RAM CHAMELI CHADHA VISHVAS GIRLS COLLEGE

ACADEMIC YEAR 2023-2024

DEPARTMENT :- (BACHELOR OF COMPUTER APPLICATION) BCA

SYNOPSIS :- ELECTRICITY BILLING SYSTEM

ROLL NO :- 210953106056

UNDER THE SUPERVISION OF:-

MRS. RAKHI SHARMA

SUBMITTED BY :-

TANYA SHARMA

Neetu Chawla

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Synopsis of Electricity Billing System

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Introduction of the Project Electricity Billing System:

The "Electricity Billing System" has been developed to override the problems prevailing in the practicing manual system. This software is supported to eliminate and in some cases reduce the hardships faced by this existing system. Moreover this system is designed for the particular need of the company to carry out operations in a smooth and effective manner.

The application is reduced as much as possible to avoid errors while entering the data. It also provides error message while entering invalid data. No formal knowledge is needed for the user to use this system. Thus by this all it proves it is user-friendly. Electricity Billing System , as described above, can lead to error free, secure, reliable and fast management system. It can assist the user to concentrate on their other activities rather to concentrate on the record keeping. Thus it will help organization in better utilization of resources.

Every organization, whether big or small, has challenges to overcome and managing the informations of Unit of Energy, Electricity, Store Record, Connections, Electricity Board. Every Electricity Billing System has different Electricity needs, therefore we design exclusive employee management systems that are adapted to your managerial requirements. This is designed to assist in strategic planning, and will help you ensure that your organization is equipped with the right level of information and details for your future goals. Also, for those busy executive who are always on the go, our systems come with remote access features, which will allow you to manage your workforce anytime, at all times. These systems will ultimately allow you to better manage resources.

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Abstract of the Project Electricity Billing System:

The purpose of Electricity Billing System is to automate the existing manual system by the help of computerized equipments and full-fledged computer software, fulfilling their requirements, so that their valuable data/information can be stored for a longer period with easy accessing and manipulation of the same. The required software and hardware are easily available and easy to work with.

Electricity Billing System, as described above, can lead to error free, secure, reliable and fast management system. It can assist the user to concentrate on their other activities rather to concentrate on the record keeping. Thus it will help organization in better utilization of resources. The organization can maintain computerized records without redundant entries. That means that one need not be distracted by information that is not relevant, while being able to reach the information.

The aim is to automate its existing manual system by the help of computerized equipments and full-fledged computer software, fulfilling their requirements, so that their valuable data/information can be stored for a longer period with easy accessing and manipulation of the same. Basically the project describes how to manage for good performance and better services for the clients.

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Objective of Project on Electricity Billing System:

The main objective of the Project on Electricity Billing System is to manage the details of Electricity, Unit of Energy, Bill, Store Record, Electricity Board. It manages all the information about Electricity, Connections, Electricity Board, Electricity. The project is totally built at administrative end and thus only the administrator is guaranteed the access. The purpose of the project is to build an application program to reduce the manual work for managing the Electricity, Unit of Energy, Connections, Bill. It tracks all the details about the Bill, Store Record, Electricity Board.

Functionalities provided by Electricity Billing System are as follows:

- Provides the searching facilities based on various factors. Such as Electricity, Bill, Store Record, Electricity Board
- Electricity Billing System also manage the Connections details online for Store Record details, Electricity Board details, Electricity.
- It tracks all the information of Unit of Energy, Connections, Store Record etc
- Manage the information of Unit of Energy
- Shows the information and description of the Electricity, Bill
- To increase efficiency of managing the Electricity, Unit of Energy
- It deals with monitoring the information and transactions of Store Record.
- Manage the information of Electricity
- Editing, adding and updating of Records is improved which results in proper resource management of Electricity data.

- Manage the information of Store Record
- Integration of all records of Electricity Board.

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Scope of the project Electricity Billing System

It may help collecting perfect management in details. In a very short time, the collection will be obvious, simple and sensible. It will help a person to know the management of passed year perfectly and vividly. It also helps in current all works relative to Electricity Billing System. It will be also reduced the cost of collecting the management & collection procedure will go on smoothly.

Our project aims at Business process automation, i.e. we have tried to computerize various processes of Electricity Billing System.

- In computer system the person has to fill the various forms & number of copies of the forms can be easily generated at a time.
- In computer system, it is not necessary to create the manifest but we can directly print it, which saves our time.
- To assist the staff in capturing the effort spent on their respective working areas.
- To utilize resources in an efficient manner by increasing their productivity through automation.
- The system generates types of information that can be used for various purposes.
- It satisfy the user requirement
- Be easy to understand by the user and operator
- Be easy to operate
- Have a good user interface
- Be expandable
- Delivered on schedule within the budget.

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Reports of Electricity Billing System:

- It generates the report on Electricity, Unit of Energy, Connections
- Provide filter reports on Bill, Store Record, Electricity Board
- You can easily export PDF for the Electricity, Connections, Store Record
- Application also provides excel export for Unit of Energy, Bill, Electricity Board
- You can also export the report into csv format for Electricity, Unit of Energy, Electricity Board

Modules of Electricity Billing System:

- Electricity Management Module: Used for managing the Electricity details.
- Electricity Board Module : Used for managing the details of Electricity Board
- Connections Module : Used for managing the details of Connections
- Unit of Energy Management Module: Used for managing the information and details of the Unit of Energy.
- Bill Module : Used for managing the Bill details
- Store Record Module : Used for managing the Store Record informations
- Login Module: Used for managing the login details
- Users Module : Used for managing the users of the system

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Input Data and Validation of Project on Electricity Billing System

- All the fields such as Electricity, Bill, Electricity Board are validated and does not take invalid values
- Each form for Electricity, Unit of Energy, Connections can not accept blank value fields
- Avoiding errors in data
- Controlling amount of input
- Integration of all the modules/forms in the system.
- Preparation of the test cases.
- Preparation of the possible test data with all the validation checks.
- Actual testing done manually.
- Recording of all the reproduced errors.
- Modifications done for the errors found during testing.
- Prepared the test result scripts after rectification of the errors.
- Functionality of the entire module/forms.
- Validations for user input.
- Checking of the Coding standards to be maintained during coding.
- Testing the module with all the possible test data.

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- Testing of the functionality involving all type of calculations etc.

- Commenting standard in the source files.

The software quality plan we will use the following SQA Strategy:

- In the first step, we will select the test factors and rank them. The selected test factors such as reliability, maintainability, portability or etc, will be placed in the matrix according to their ranks.
- The second step is for identifying the phases of the development process. The phase should be recorded in the matrix.
- The third step is that identifying the business risks of the software deliverables. The risks will be ranked into three ranks such as high, medium and low.

Features of the project Electricity Billing System:

- Product and Component based
- Creating & Changing Issues at ease
- Query Issue List to any depth
- Reporting & Charting in more comprehensive way
- User Accounts to control the access and maintain security
- Simple Status & Resolutions
- Multi-level Priorities & Severities.
- Targets & Milestones for guiding the programmers
- Attachments & Additional Comments for more information
- Robust database back-end
- Various level of reports available with a lot of filter criteria's
- It contain better storage capacity.
- Accuracy in work.
- Easy & fast retrieval of information.
- Well designed reports.
- Decrease the load of the person involve in existing manual system.
- Access of any information individually.
- Work becomes very speedy.
- Easy to update information

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Software Requirement Specification

The Software Requirements Specification is produced at the culmination of the analysis task. The function and performance allocated to software as part of system engineering are refined by establishing a complete information description, a detailed functional and behavioral description, an indication of performance requirements and design constraints, appropriate validation criteria, and other data pertinent to requirements.

The proposed system has the following requirements:

- System needs store information about new entry of Electricity.
- System needs to help the internal staff to keep information of Unit of Energy and find them as per various queries.
- System need to maintain quantity record.
- System need to keep the record of Bill.
- System need to update and delete the record.
- System also needs a search area.
- It also needs a security system to prevent data.

Identification of need:

The old manual system was suffering from a series of drawbacks. Since whole of the system was to be maintained with hands the process of keeping, maintaining and retrieving the information was very tedious and lengthy. The records were never used to be in a systematic order. there used to be lots of difficulties in associating any particular transaction with a particular context. If any information was to be found it was required to go through the different registers, documents there would never exist anything like report generation. There would always be unnecessary consumption of time while entering records and retrieving records. One more problem was that it was very difficult to find errors while entering the records. Once the records were entered it was very difficult to update these records.

The reason behind it is that there is lot of information to be maintained and have to be kept in mind while running the business .For this reason we have provided features Present system is partially automated (computerized), actually existing system is quite laborious as one has to enter same information at three different places.

Following points should be well considered:

- Documents and reports that must be provided by the new system: there can also be few reports, which can help management in decision-making and cost controlling, but since these reports do not get required attention, such kind of reports and information were also identified and given required attention.

- Details of the information needed for each document and report.

- The required frequency and distribution for each document.

- Probable sources of information for each document and report.

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- With the implementation of computerized system, the task of keeping records in an organized manner will be solved. The greatest of all is the retrieval of

information, which will be at the click of the mouse. So the proposed system helps in saving the time in different operations and making information flow easy giving valuable reports.

Feasibility Study:

After doing the project Electricity Billing System, study and analyzing all the existing or required functionalities of the system, the next task is to do the feasibility study for the project. All projects are feasible - given unlimited resources and infinite time.

Feasibility study includes consideration of all the possible ways to provide a solution to the given problem. The proposed solution should satisfy all the user requirements and should be flexible enough so that future changes can be easily done based on the future upcoming requirements.

A. Economical Feasibility

This is a very important aspect to be considered while developing a project. We decided the technology based on minimum possible cost factor.

- All hardware and software cost has to be borne by the organization.
- Overall we have estimated that the benefits the organization is going to receive from the proposed system will surely overcome the initial costs and the later on running cost for system.

B. Technical Feasibility

This included the study of function, performance and constraints that may affect the ability to achieve an acceptable system. For this feasibility study, we studied complete functionality to be provided in the system, as described in the System Requirement Specification (SRS), and checked if everything was possible using different type of frontend and backend plaformst.

C. Operational Feasibility

No doubt the proposed system is fully GUI based that is very user friendly and all inputs to be taken all self-explanatory even to a layman. Besides, a proper training has been conducted to let know the essence of the system to the users so that they feel comfortable with new system. As far our study is concerned the clients are comfortable and happy as the system has cut down their loads and doing.

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System Design of Electricity Billing System

In this phase, a logical system is built which fulfils the given requirements. Design phase of software development deals with transforming the clients's requirements into a logically working system. Normally, design is performed in the following in the following two steps:

1. **Primary Design Phase:**
   In this phase, the system is designed at block level. The blocks are created on the basis of analysis done in the problem identification phase. Different blocks are created for different functions emphasis is put on minimising the information flow between blocks. Thus, all activities which require more interaction are kept in one block.
2. **Secondary Design Phase:**
   In the secondary phase the detailed design of every block is performed.

The general tasks involved in the design process are the following:

1. Design various blocks for overall system processes.
2. Design smaller, compact and workable modules in each block.
3. Design various database structures.
4. Specify details of programs to achieve desired functionality.
5. Design the form of inputs, and outputs of the system.
6. Perform documentation of the design.
7. System reviews.

User Interface Design

User Interface Design is concerned with the dialogue between a user and the computer. It is concerned with everything from starting the system or logging into the system to the eventually presentation of desired inputs and outputs. The overall flow of screens and messages is called a dialogue.

The following steps are various guidelines for User Interface Design:

1. The system user should always be aware of what to do next.
2. The screen should be formatted so that various types of information, instructions and messages always appear in the same general display area.
3. Message, instructions or information should be displayed long enough to allow the system user to read them.
4. Use display attributes sparingly.
5. Default values for fields and answers to be entered by the user should be specified.
6. A user should not be allowed to proceed without correcting an error.
7. The system user should never get an operating system message or fatal error.

Preliminary Product Description:

The first step in the system development life cycle is the preliminary investigation to determine the feasibility of the system. The purpose of the preliminary investigation is to evaluate project requests. It is not a design study nor does it include the collection of details to describe the business system in all respect. Rather, it is the collecting of information that helps committee members to evaluate the merits of the project request and make an informed judgment about the feasibility of the proposed project.

Analysts working on the preliminary investigation should accomplish the following objectives:

- Clarify and understand the project request
- Determine the size of the project.
- Assess costs and benefits of alternative approaches.
- Determine the technical and operational feasibility of alternative approaches.
- Report the findings to management, with recommendations outlining the acceptance or rejection of the proposal.

- **Benefit to Organization**

The organization will obviously be able to gain benefits such as savings in operating cost, reduction in paperwork, better utilization of human resources and more presentable image increasing goodwill.

- **The Initial Cost**

The initial cost of setting up the system will include the cost of hardware software (OS, add-on software, utilities) & labour (setup & maintenance). The same has to bear by the organization.

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- **Running Cost**

Besides, the initial cost the long term cost will include the running cost for the system including the AMC, stationary charges, cost for human resources, cost for update/renewal of various related software.

- **Need for Training**

The users along with the administrator need to be trained at the time of implementation of the system for smooth running of the system. The client will provide the training site.

We talked to the management people who were managing a the financial issues of the center, the staff who were keeping the records in lots of registers and the reporting manager regarding their existing system, their requirements and their expectations from the new proposed system. Then, we did the system study of the entire system based on their requirements and the additional features they wanted to incorporate in this system.

Reliable, accurate and secure data was also considered to be a complex task without this proposed system. Because there was no such record for keeping track of all the activities, which was done by the Electricity Billing System on the daily basis.

The new system proposed and then developed by me will ease the task of the organization in consideration. It will be helpful in generating the required reports by the staff, which will help them to track their progress and services.

Thus, it will ease the task of Management to a great extent as all the major activities to be performed, are computerized through this system.

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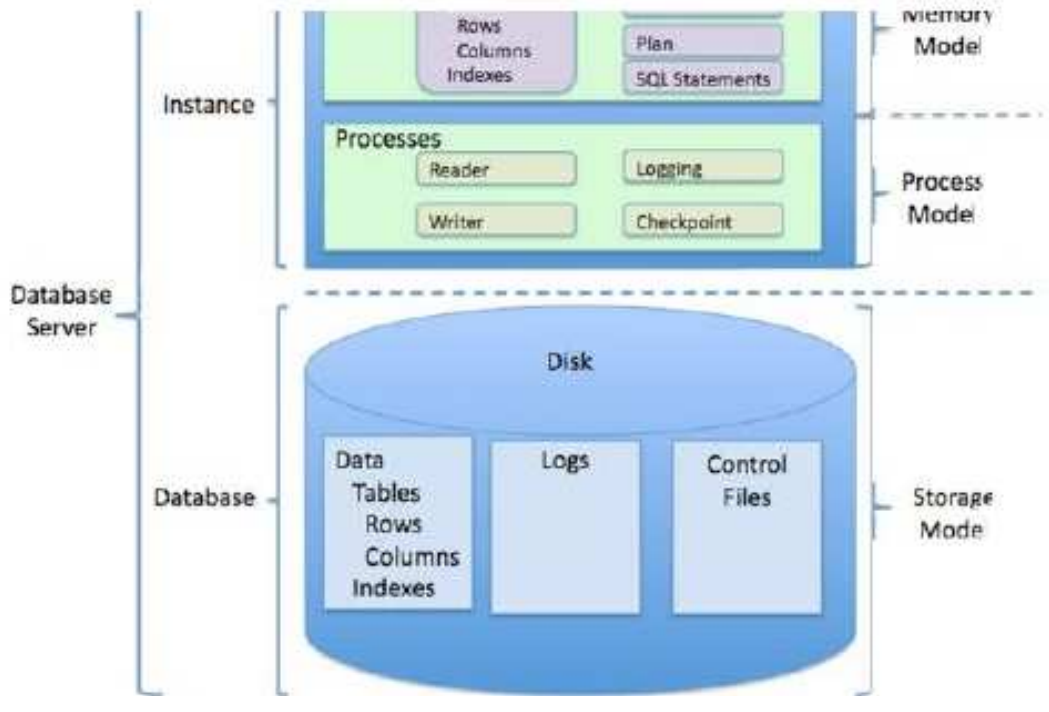
Project Category

Relational Database Management System (RDBMS) : This is an RDBMS based project which is currently using MySQL for all the transaction statements. MySQL is an opensource RDBMS System.

Brief Introduction about RDBSM :

A relational database management system (RDBMS) is a database management system (DBMS) that is based on the relational model as invented by E. F. Codd, of IBM's San Jose Research Laboratory. Many popular databases currently in use are based on the relational database model.

RDBMSs have become a predominant choice for the storage of information in new databases used for financial records, manufacturing and logistical information, personnel data, and much more since the 1980s. Relational databases have often replaced legacy hierarchical databases and network databases because they are easier to understand and use. However, relational databases have been challenged by object databases, which were introduced in an attempt to address the object-relational impedance mismatch in relational database, and XML databases.



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Implementation Methodology:

Model View Controller or MVC as it is popularly called, is a software design pattern for developing web applications. A Model View Controller pattern is made up of the following three parts:

- **Model** - The lowest level of the pattern which is responsible for maintaining data.
- **View** - This is responsible for displaying all or a portion of the data to the user.
- **Controller** - Software Code that controls the interactions between the Model and View.

MVC is popular as it isolates the application logic from the user interface layer and supports separation of concerns. Here the Controller receives all requests for the application and then works with the Model to prepare any data needed by the View. The View then uses the data prepared by the Controller to generate a final presentable response. The MVC abstraction can be graphically represented as follows.

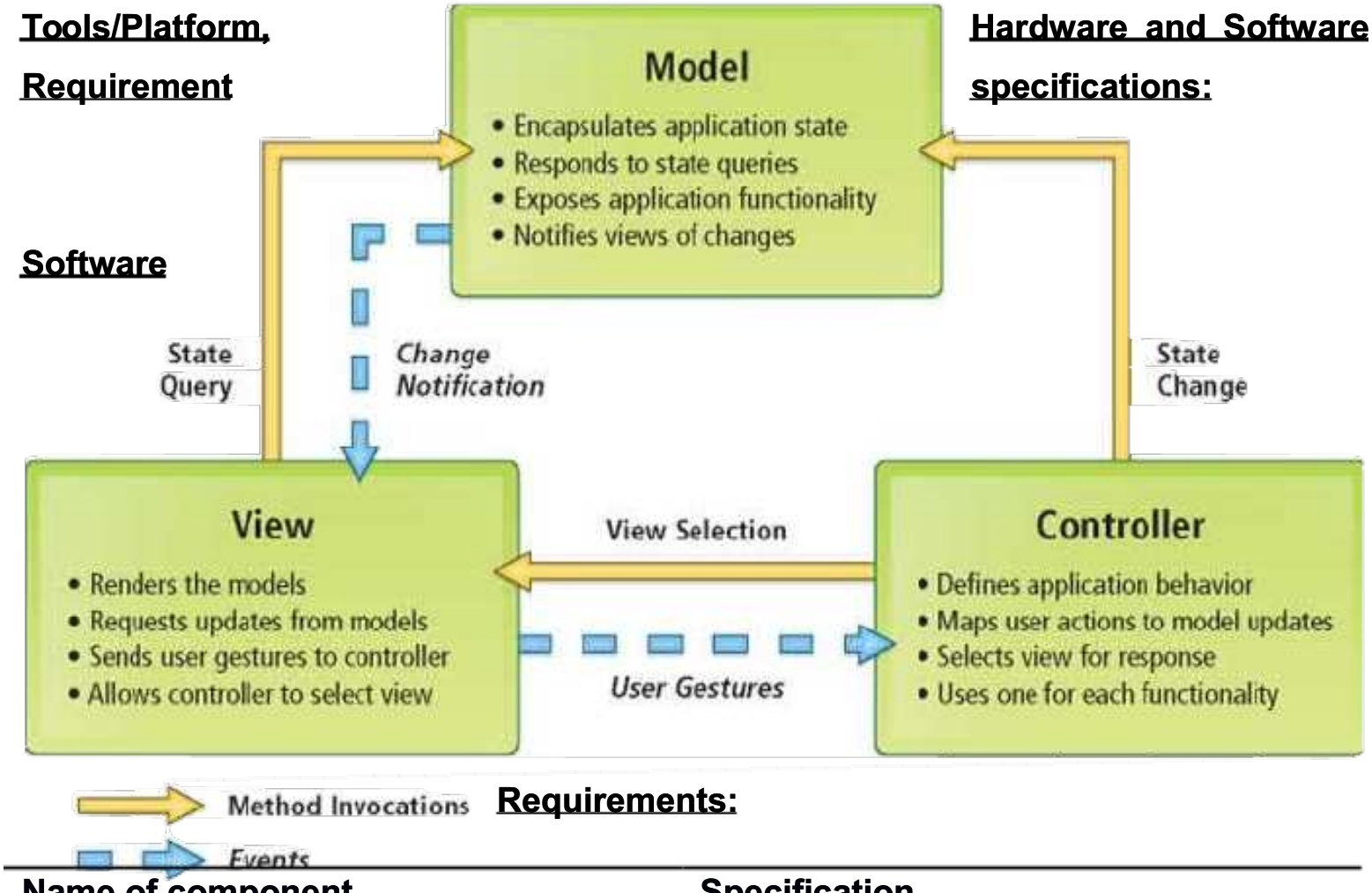
MVC (Model View Controller Flow) Diagram

DATA FLOW DIAGRAMS

Tools/Platform, Requirement

Hardware and Software specifications:

Software



Requirements:

Name of component	Specification
Operating System	Windows 98, Windows XP, Windows7,

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	Linux
Language	Java 2 Runtime Environment
Database	MySQL Server
Browser	Any of Mozilla, Opera, Chrome etc
Web Server	Tomcat 7
Software Development Kit	Java JDK 1.7 or Above
Scripting Language Enable	JSP (Java Server Pages)
Database JDBC Driver	MySQL Jconnector

Hardware Requirements:

Name of component	Specification
Processor	Pentium III 630MHz
RAM	128 MB
Hard disk	20 GB
Monitor	15” color monitor
Keyboard	122 keys

System Analysis:

System analysis is a process of gathering and interpreting facts, diagnosing problems and the information about the Electricity Billing System to recommend improvements on the system. It is a problem solving activity that requires intensive communication between the system users and system developers. System analysis or study is an important phase of any system development process. The system is studied to the minutest detail and analyzed. The system analyst plays the role of the interrogator and dwells deep into the working of the present system. The system is viewed as a whole and the input to the system are identified. The outputs from the organizations are traced to the various processes. System analysis is concerned with becoming aware of the problem, identifying the relevant and decisional variables, analyzing and synthesizing the various factors and determining an optimal or at least a satisfactory solution or program of action. A detailed study of the process must be made by various techniques like interviews, questionnaires etc. The data collected by these sources must be scrutinized to arrive to a conclusion. The conclusion is an understanding of how the system functions. This system is called the existing system. Now the existing system is subjected to close study and problem areas are identified. The designer now functions as a problem solver and tries to sort out the difficulties that the enterprise faces. The solutions are given as proposals. The proposal is then weighed with the existing system analytically and the best one is selected. The proposal is presented to the user for an endorsement by the user. The proposal is reviewed on user request and suitable changes are made. This is loop that ends as soon as the user is satisfied with proposal. Preliminary study is the process of gathering and interpreting facts, using the information for further studies on the system. Preliminary study is problem solving activity that requires intensive communication between the system users and system developers. It does various feasibility studies. In these studies a rough figure of the system activities can be obtained, from which the decision about the strategies to be followed for effective system study and analysis can be taken.

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Existing System of Electricity Billing System:

In the existing system the exams are done only manually but in proposed system we have to computerize the exams using this application.

- Lack of security of data.
- More man power.
- Time consuming.
- Consumes large volume of pare work.
- Needs manual calculations.
- No direct role for the higher officials

Proposed System of Electricity Billing System:

The aim of proposed system is to develop a system of improved facilities. The proposed system can overcome all the limitations of the existing system. The system provides proper security and reduces the manual work.

- Security of data.
- Ensure data accuracy's.
- Proper control of the higher officials.
- Minimize manual data entry.
- Minimum time needed for the various processing.
- Greater efficiency.
- Better service.
- User friendliness and interactive.
- Minimum time required.

Data Dictionary:

This is normally represented as the data about data. It is also termed as metadata some times which gives the data about the data stored in the database. It defines each data term encountered during the analysis and design of a new system. Data elements can describe files or the processes.

Following are some major symbols used in the data dictionary

- = equivalent to
- + and
- [] either/ or
- () Optional entry

Following are some rules, which defines the construction of data dictionary entries:

1. Words should be defined to understand for what they need and not the variable need by which they may be described in the program .
2. Each word must be unique. We cannot have two definition of the same client.
3. Aliases or synonyms are allowed when two or more enters shows the same meaning. For example a vendor number may also be called as customer number.
4. A self-defining word should not be decomposed. It means that the reduction of any information in to subpart should be done only if it is really required that is it is not easy to understand directly.

Data dictionary includes information such as the number of records in file, the frequency a process will run, security factor like pass word which user must enter to get excess to the information.

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Conclusion of the Project Electricity Billing System:

Our project is only a humble venture to satisfy the needs to manage their project work. Several user friendly coding have also adopted. This package shall prove to be a powerful package in satisfying all the requirements of the school. The objective of software planning is to provide a frame work that enables the manger to make reasonable estimates made within a limited time frame at the beginning of the software project and should be updated regularly as the project progresses.

At the end it is concluded that we have made effort on following points…

- A description of the background and context of the project and its relation to work already done in the area.
- Made statement of the aims and objectives of the project.
- The description of Purpose, Scope, and applicability.
- We define the problem on which we are working in the project.
- We describe the requirement Specifications of the system and the actions that can be done on these things.
- We understand the problem domain and produce a model of the system, which describes operations that can be performed on the system.
- We included features and operations in detail, including screen layouts.
- We designed user interface and security issues related to system.
- Finally the system is implemented and tested according to test cases.

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Future Scope of the Project:

In a nutshell, it can be summarized that the future scope of the project circles around maintaining information regarding:

- We can add printer in future.
- We can give more advance software for Electricity Billing System including more facilities
- We will host the platform on online servers to make it accessible worldwide
- Integrate multiple load balancers to distribute the loads of the system
- Create the master and slave database structure to reduce the overload of the database queries
- Implement the backup mechanism for taking backup of codebase and database on regular basis on different servers

The above mentioned points are the enhancements which can be done to increase the applicability and usage of this project. Here we can maintain the records of Electricity and Unit of Energy. Also, as it can be seen that now-a-days the players are versatile, i.e. so there is a scope for introducing a method to maintain the Electricity Billing System. Enhancements can be done to maintain all the Electricity, Unit of Energy, Bill, Store Record, Electricity Board.

We have left all the options open so that if there is any other future requirement in the system by the user for the enhancement of the system then it is possible to implement them.In the last we would like to thanks all the persons involved in the development of the system directly or indirectly. We hope that the project will serve its purpose for which it is develop there by underlining success of process.

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Limitation of Project on Electricity Billing System

Although I have put my best efforts to make the software flexible, easy to operate but limitations cannot be ruled out even by me. Though the software presents a broad range of options to its users some intricate options could not be covered into it; partly because of logistic and partly due to lack of sophistication. Paucity of time was also major constraint, thus it was not possible to make the software foolproof and dynamic. Lack of time also compelled me to ignore some part such as storing old result of the candidate etc.

Considerable efforts have made the software easy to operate even for the people not related to the field of computers but it is acknowledged that a layman may find it a bit problematic at the first instance. The user is provided help at each step for his convenience in working with the software.

List of limitations which is available in the Electricity Billing System:

- Excel export has not been developed for Electricity, Unit of Energy due to some criticality.
- The transactions are executed in off-line mode, hence on-line data for Bill, Store Record capture and modification is not possible.
- Off-line reports of Electricity, Electricity Board, Bill cannot be generated due to batch mode execution.

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PROLOGUE

The software package LT BILLING SYSTEM can be used for computerising the electricity bill preparation of the consumers. The project also contains programs for preparing various kinds of reports such as daily, monthly and personnel etc. This is developed in java a d the database used here is MS SQL SERVER. It also developed programs to display information of consumers. Many irregularities exist in the present system, which is manually maintained. It requires high processing time. Errors may also occur in this system. The new system developed includes the provision for future expansion.

The main objective of this system is

1. To reduce the manual processing time.
2. To make the system easy for handling by organizing the system in the regular order.
3. To reduce the maintenance cost of the system
4. To easily incorporate the future developments and changes.
5. To maintain an error free data base.

To achieve this objective we have designed a LT BILLING SYSTEM. This software package can be operational in menu driven way which will be helpful to the end user

PERSPECTIVE TO COMPUTERS

Computers are l the most powerful tool man has ever created. Computer has made a great impact on one every day life. Computers, personnel computers, mainframe computers, super computers are the integral part of daily life. All kinds of people for variety of tasks in modern industrialized society using the computers.

Computer is a programmable machine Earlier computers were used for complex computations and used by only scientist and engineers. Developments in software and hardware applications of computers for non computational jobs like weather forecasting designing , painting, preparation and manipulation of data storage and data retrieval, sending graphics and pictures from one end to another end artificial intelligence and expert systems are the another modern era facilities provided by the computers. Among them robotics is the latest.

Most exiting development may perhaps occur the area of information technology internet contributed a lot to this. Internet is a rather the result of a collaborative effort of people and connected computers installed and functioning in different. Internet is a system of connected computers that allow your desk top computer to exchange data messages and files with any of the very large number of other computers with connections to the internet. Electronic mail is the most important activity made possible by computer communications. E-mail is the one feature re that nearly every internet user

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uses nearly every day. Any one who was connected to the internet could sent and receive E-Mail message to anyone. Hotmail, web servers etc provides survive to avail this facility. Chatting, video conferencing are now a common process to everybody's life.

NEED OF INFORMATION TECHNOLOGY

Most important aspect of the interface is the communication between user and the computer. Information is the back born of any system. It is fairly established a fact that information technology has become a strategic weapon in the present information dominated era. Internet is per4haps the most exciting development take place in the area of information Technology today. Information is a powerful tool. People are increasingly becoming dependent on Information generation in the electronic media the world over. A user can now have all the latest information that needs one this finger tips. Access to information as a basic right can stimulate the world's economy to the benefit of all.

There is today we have in need of developing low cost ,high quality, better functioning information products that satisfy human needs important aspect of achieving timely identification of information needs may be sufficient to cater the needs of the business groups.

ABOUT JAVA:-

Java is a computer language with a difference. It is a purely object oriented. It has having many features of C++. It can also say that this may be a complete language available today. This language can be used for doing web based programs. Java supports

1. Data abstraction and encapsulation.
2. Inheritance
3. Polymorphism

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4. Dynamic binding
5. Message communication.

BENEFITS AND APPLICATION OF OOPS

Since oops supports inheritance and polymorphism, it eliminates redundant codes and extend the use of existing classes. So we can build the programs on a classic working model. This saves development of time and disc space. This ensures higher productivity. Data hiding helps the programmer to build secure applications. It is easy to have multiple objects to coexist and better possibility of up gradation. Software complexity can easily manage. Following a re the features of java.

- Compiled and interpreted.
- Platform in depended and portable
- Object oriented
- Robust and secure
- Distributed
- Familiar, simple and small
- Multithreaded and interactive
- High performance
- Dynamic and extensible

Java compiler compiles and interprets the source code, and generates machine code that can be directly run by the JRE. Since this code is platform independent it can be ported to any system we use or work on. This feature enables the programmer to develop browser programs. Actually java provides unlimited number of cacheable applets and applications.

Each and every thing in java is represented in objects. All the data and objects are rests inside the objects and classes. Java provides many safeguards, it has strict run time and compile time checking, security issue is more concerned for the programming people. A programmer cannot access a memory location without clear authorization. Java is a distributed language; this is used to create applications in the network. This enables multiple programmers to work in the same program to develop modular functions. Many feature of C and C++ are incorporated into this language hence there occurs more detailed comparison of java with C

Java provides safeguards to code written it is designed as garbage collected language relieving the programmers virtually all memory management problems. Security becomes an important issue for a language that is used for programming on internet. Threat of viruses and abuse of resources lies everywhere. Java systems not only verity all memory access but also ensure that no virus are communicated with applet. The absence of pointers in java ensures that programs cannot gain access to memory location without proper authorization.

Java is referred as distributed language for creating applications on networks It has the ability to share data, database and programmers. These applications can be access to remote objects on internet as easily as they can do in a local system. This enables multiple programmers at multiple remote locations to collaborate and work together on a single project.

Java is referred as simple language. Java uses multithreading capabilities. This means we need not wait for the application to finish one task before beginning another. This support multiprocessor synchronization and construct smoothly running interactive system. Multithreading incorporates the enhancement of overall execution speed of java programs.

Java is a dynamic language, capable of linking in new class libraries, methods, and objects. These functions are known as native methods. This facility enables the programmers to use the efficient factions available in this language.

File operations in java programmers:

Files are primary source and destination for data within most programmers. File operations are common in any language. Java devotes whole range of methods found in a class called file in the java .io package.

ABOUT MS SQL SERVER:-

SQL Server is built to deliver the performance scalability and transactional in gritty required for heavy-duty high visibility databases. If the data is critical to an organization, then a well developed and maintained sol sever based application is worthy of the tasks. SQL Server is a complete database system and fully mastering its scope can take years. In terms of features, commands subsystems, components, and possibilities, SQL sever is one of the largest and most complex database in the market. Desktop database perform all the database tasks the entire client. While multi-user desktop database may use client sever fuelled processing it doesn't qualify as client

server database. To visualize a desktop database searching for phone number, picture the entire telephone book moving through network actually some desktop database to try to optimize the operation by opening only a portion of the database file, such as an index or a data page. Once the client computer has the index the client computer searches it and selects the correct row. It then opens the table and retrieves the row.

In contrast to the desktop databases which make the clients do all the work client server databases are like research librarians who handle the request by finding the information, and then return a photocopy. The actual reference materials never leave the watchful eye of the research librarian.

A database is used for day today processing with frequent data inserts updates, and searches is referred to an online transaction processing database OLTP databases typically have multiple purposes with several front end applications accessing he data for searches modifications and reporting. Another database type is the online analysis processing database. These databases generally receive large amounts of data from several OLTP databases in a process called extract transform load (ETL). Primary task of OLAP database is data retrieval and analysis so the data integrity; concerns presents with an OLTP database don't apply.

Relationship cardinality:-

The cardinality of the relationship describes the number of tuples on each side of the relationship. Either side of the relationship may either be restricted to a single tuples or allow multiple tuples. The type of key enforces the e restriction of multiple tuples. Primary keys enforces the single tuples restriction while foreign key permit multiple tuples.

Relationship type	First entity's key	Second entity's key
One to one	Primary entity primary key _single tuples	Primary entity primary key _single tuples
One to many	Primary entity primary key _single tuples	Secondary entity foreign key multiple tuples
Many to many	Secondary entity foreign key multiple tuples	Secondary entity _ foreign key multiple tuples

Relationship optimality is the difference between an optional and mandatory relationship. That is some secondary tuples requires a foreign key point to a primary key. The secondary tuple would be incomplete or meaningless without the primary entity. It is critical in the sense that the relationship be enforced as a mandatory relationship for the following reasons.

1. An order line item without an order is meaningless.
2. An order without a customer is invalid.
3. In the cape hatteras adventures database, an even without an associated tour tuple is a useless event tuple.

DATAMODELS:-

A data model describes the logical relationship between data in a database and doesn't concern with the specific values that a data item might take.

There are three data models:-

1. hierarchical
2. network
3. relational

Most relational database management system supports a single data mode. Most of the micro computer database is relational as they are simpler and more powerful.

DATA BASE:-

Database technology has been descried as one of the most rapidly growing areas of computer and information science as a field it is still comparatively young. Basically it is nothing more hat computer based record keeping systems; that is a system whose overall purpose is to record and to maintain. A database system involves four major components.

1. data
2. hardware
3. software
4. users

Database is a repository of for stored data. In general it is both integrated and shared. Hardware consists of the secondary storage volumes disks, drums etc. Between the physical database itself and the users of the system it is a larger of software. Users are application programmers responsible for writing applications programs that use the database. End user

accessing the database from the terminal and another user is database administrator.

DATABASE MANAGAEMENT SYSTEM:-

All requests from users for access to the database are handled by the Database Management system. Between the physical database and the users of system is a layer of software, usually called Database Management System is thus shielding of database users from hardware level detail. The Database Management System is the software that handles all access to the database. Database Management system performs necessary operation on the stored database and intercepts the request and interprets it.

The need for relational database management system.

1. Lack of data definition or program independence.
2. Data redundancy
3. Data integrity
4. Adhoc queries. Multi user issues
5. Security issues
6. Development and maintains of application systems

SYSTEM DEVELOPMENT TOOLS:-

These are tools typically available to development stuff using a Relational Database Management System and can be broadly grouped under

1. structured query language(SQL)
2. Form management
3. 4GL
4. Report Generators

Structured Query Language is the DDL/DML for relational database management system. Structured Query Language statement can be entered at an interactive keyboard or screen for immediate interpretation and processing by the relational database management system. The form management feature of relational database management system enable the development of such applications with remarkable rapidity compared to traditional programming methods. They also support the subsequent running of the application of the users.

ABOUT COMPUTER SYSTEM:-

The computer is used for developing the software entitled "LT BILLING SYSTEM is an IBM based Pentium IV. The hardware and software which are used in the development is as follows

HARDWARE SPECIFICATION

1	System PC/XT
2	Pentium III and above
3	Clock speed 33 MHz and above
4	Word length 32bit/64bit
5	Ram capacity 256mb or above
6	Visual display unit CRT or LCD
7	Monitor 24x80 B/W or Color
9	Key board 101 keys
10	Printer TVS or wipro 136 column
11	Memory 80 GB or above

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SOFTWARE SPECIFICATON

Operating system windows xp, JRE for windows platform, java 1.5.0

ABOUT THE SOFTWARE:-

Java was selected for computerization of billing system is based on some rules and principles. Once the programmer has analyzed the problem to be programmed. The objective of our project is to provide a better management of the billing branch and provision is included to include the cash collection also to be included as a part of the billing system later. Several windows are designed in addition to the main program so that future applications also may be included while in the expanding environment of the computer application. Though networking facility is not included presently, it also can be included in the future without much strain because all the codes have been written in java.

ABOUT THE ORGANISATION:-

The Kerala State Electricity Board was formed as per section 5(1) of the Electricity supply act 1948, 1st April 1957 as successor of the Electricity Department of the Kerala State. KSEB is the sole authority which has been responsible for the generation, transmission and supply of electricity in the State of kerala, and where the distribution profit centers play a major role in the collection of revenue and management of distribution of power and proper accounting of the revenue collection. KSEB generates power mainly form the hydro power and it has now the capacity to design and build sophisticated hydro power projects with its on design. Board has now equipped with ample number of brilliant engineers and accountants to manage its resources.

ABOUT THE PROJECT:-

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L T BILLING SYSTEM has been developed to computerize the billing system of KSEB where all dealing was done manually earlier. Now a day's computerization is spreading with great speed. Many organizations are being computerized and are surely enjoying the benefits of computerization.

Earlier one person was gone to collect the meter reading, then another one check the unit charge and another person calculate the total charge. These details are all stored in special records. Though al the most importance, tedious a care needed job is the bill calculation. Any one of mistakes may cause severe consequence. Computerization helps to overcome all these problems, by integrating the system that is the above said jobs can be done by a single person. That is one computer user LT BILLING SYSTEM helps to create accurate bills, with great speed. This includes the consumer details report generation.

EXISTING SYSTEM:-

A system can be regarded as a set of interacting elements, producing outputs from a set of inputs. Existing system is completely manual. There may be a lot of chance of clerical and procedural errors. Existing system has several disadvantages such as

1. Redundancy in stored data
2. Lack of security
3. Data is inconsistent
4. More time required
5. Waste storage space

6. Manpower required
7. Errors may occur
8. Regular watching and supervision is necessary

PROPOSED SYSTEM:-

The system avoids the difficulties of the existing system. The Advantages of proposed system are

1. Faster performance
2. Redundancy can be reduced
3. Time saving
4. Inconsistency can be avoided
5. Data Sharing
6. Security restrictions can be applied
7. Less storage space required
8. Debugging

CHARECTRISTICS OF A SYSTEM:-

Any array of elements or entity arranged according to a plan to achieve an objective or a system is a set of object with relation between those objects and between their attributes. Any system can be considered as a collection of group of subsystems. Failure of a subsystem can lead to the failure of a project

CHARAECTERISTICS OF A SYSTEM:-

1. Organization
2. Interaction

3. Interdependence
4. Integration
5. Central objective

ELEMENTS OF A SYSTEM:-

1. Inputs and outputs
2. Processors
3. Control
4. Feedback
5. Boundaries and interphase
6. Environment
7.

SYSTEM ANALYSIS:-

In a process of analyzing a system with the potential goal of improving or modifying it. In other words system analysis involves the study of the present system and formulates the design of something to achieve a desired goal. In order to modify it hopefully for the better. Analysis is the process of breaking down the problems into smaller elements for study and ultimately solution. The system analysis approach to a problem differs from trial and error approach. In trial and error method, identifying a number of solutions to the problem and then testing each randomly until the alternative appears to

provide can acceptable solution. In the system analysis approach all major influences and constraints are identified and evaluated in terms of this impact on the various decision points in the system. A decision point that point in a system

at which some person or automatic mechanism must react to input output data and make a division.

STAGES OF COMPUTERIZATION:-

The way to computerize can be

1. Initial investigation
2. Feasibility study
3. System design
4. Programming
5. Implementation
6. Evaluation
7. Documentation.

1. Initial investigation:-

The term is obvious is a study should made in recognizing the various requirements of the business. It is directed towards clarifying the problem and strengthening the analyst background in the problem area. The initial investigation is beginning by studying the organization responsible for current system and identifying product flow and information flow. Study of existing system of organization provides background knowledge of problem area. The requirement analysis is vital because based up on these arguments only we can to step to next.

2. Feasibility study:-

A feasibility study is a test of system proposal according to its workability, impact on the organization, ability to meet user need s and effective

use of resources. The objective of a feasibility study is not to solve the problem but to acquire a sense of its scope. The result of feasibility study is simply a report. This report contains the nature and scope of the proposed solution the three aspects in feasibility study are technical feasibility, operational feasibility.

2. System design:-

It is the process of planning a new business system or one to replace compliment an existing system. The design of an information system produces the details that state how a system will meet the requirements identified during analysis.

3. Programming:-

Transforming the system analysis idea procedures to computer programs is a programmer's job. The selection of programming language depends upon the type of application we are doing. After programs being written to meet on specific purpose, the programs are completed, debugged and stimulated with some preliminarily data is satisfying it the same purpose.

4. Implementation:-

Implementation is the process of having systems personnel checkout and put new equipment into use, train users, installs the new application, and constructs any files of data needed to use it.

Depending on the size of the organization that will be involved in using their application and the risk associated with its use, system developers may choose to pilot the operation in only one area of the firm, say in one department or with only one or two persons.

5. Evaluation:-

Evaluation of a system is performed to identify its strength and weakness. The actual evaluation can occur along any of the following dimensions. Operational evaluation, Organizational impact, user manager assessment.

6. Documentation:-

It is one of the important aspects of a computer system programmers are also responsible for documenting the program, providing an explanation of who and why certain procedures are coded in specific ways. Documentation is essential to test the program and carry on maintenance once the application has been installed.

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SYSTEM DESIGN

INTRODUCTION TO SYSTEM DESIGN:-

The design phase is the life cycle phase in which the detailed design of the selected system in the study phase is accomplished. In the design phase, the technical specifications are prepared for the performance of all allocated tasks. It also includes the construction of programs and program testing.

In the design phase, the first step is to determine the output is to be produced and in what format. Second, input data and master files have to be designed to meet the requirements of proposed output.

The system analyst has to define the methods of capturing and input programs and format of the output and its use by the users.

SYSTEM FLOW CHART:-

A graphic representation of a system showing the overall flow of control in the processing at the job level; specifies what activities must be done to convert from a physical to logical model is known as a system flowchart. Thus it summarizes what operations are undertaken and where and when they take place. Normally in a system flowchart input from outside are shown to the left and outputs to the right. Symbols representing the operations

undertaken and the documents used are then placed in the appropriate places which gives a general flow of data from top to bottom and left to right.

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Arrows are used on the connecting lines to indicate the logical flow or sequence where the flow is not in the standard direction. No interaction is implied by crossing lines. Decisions which lead to different actions can also be shown

DATA FLOW DAGRAM:-

A data flow diagram is graphic representation of a system that shows data flows to, from and with in the system, processing functions that change the date in some manner, and the storage of this data. They are networks of related system function that indicated form where information is revived and to where it is sent. An external entity is the originator or receiver of data or information.

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A data store symbol portraits a file or database in which data resides. A process is depicted by a circle some times it is called a bubble or transform. Process portraits the transformation of the content of status of data

DATABASE DESIGN:-

This activity deals with the design of the physical database. The designer begins to concentrate on file design or how data should be organized around user requirements. How data are organized depends on the data and response requirements that determine hardware configurations.

An integrated approach to file design is the database. The general theme is to handle information as an integrated whole, with a minimum of redundancy

and improved performance, type and size of data structure used. The objectives of data base are accuracy and integrity, privacy and security of data etc.

CODE DESIGN:-

Codes can provide brief identification of data items and replace longer descriptions that would be more awkward to store and to manipulate.

INPUT DESIGN:-

Input design is processing of converting the user oriented description of the inputs of the system. The goal of designing input data to make data entry as easy logical and free from errors as possible. In entering data, operates need to know the following.

1. The allocated space for each field.
2. Field sequence which must match that in the source document.
3. The format in which data fields are entered for example, filling out the data field is required through the edited format mm/dd/ yy

When we approach input data design, we design source documents that capture the data and then selected the media use to enter them into the computer. There are different ways in which data can be introduced into the system such as

a. The data is converted into a machine sensible from by some realistic source document and types in the relevant items using a keyboard connected to the system.

b. The document can be read directly by a machine and this converts information held in the human sensible form into a machine readable form without need for human investigations.

c. Data entered into a system through a keyboard. This is done interactively by the person using the system.

d. Data is presented in a form suitable to computer as a result of some of the processing.

e. The data entry in the system has been designed so as to make to user friendly and also to incorporate certain validation checks.

The field name must be documented. The field name must be known to data entry operator or users so that the data entry will not exceed the allocated space. Our system contains the following inputs.

OUTPUT DESIGN:-

The primary consideration in the design of all output is the information requirement and other objective of the users. It is the most important and direct source of information to the user. A major form of output is a hard copy. Print out should be designed around the output requirements of the user. Each output should be given a specific name or title. The output data

is displayed on the visual display unit and output can be redirected to printers and or sorted in a file for later use.

Here, in this system, program is designed so as to generate a number of relevant outputs displayed in various kinds of user-defined tables in

an easily readable and comprehensive manner which can be readily read and understood by the user. So no further attempt has been made to generate reports which of course could have been easily implemented into the system.

PROCEDURE DESIGN:-

When program become very long, they are divided into smaller programs or modules. These smaller programs can be written, tested and debugged separately. This technique of programming is known as modular programming. The advantages of modular programming are.

1. It is easy to write, test and debug a module.
2. Generally the modules of common nature are prepared, which can be used at many places.
3. The programmer can use the previously written programs.
4. If a change is to be made, it is made in the particular module; the entire program is not affected.

Functions and procedures are subprograms which perform well defined tasks. The encourage top down programming be dividing large programs into small, easily programmed parts. A function is used when a single value is to computed using one or more arguments or when no values are to be computed using one or more arguments. A function is called by the appearance of the function name in a statement. When the procedure is to be used in a program it is called by using the name of procedures.

SYSTEM IMPLEMENTATION

PROGRAM DEVELOPMENT:-

In the case of program development first of all the problem is defined. It includes input-output specifications, requirements, execution times, accuracy etc. A necessary system flowchart is expended to show additional detail input and out files are identified, and computer programs logic flowchart are prepared for each computer program component. An algorithm can also write to solve the problem. The following are the stages for the development of software.

1. Problem definition
2. Program design
3. Coding
4. Debugging
5. Testing
6. Documentation
7. Maintenance, Extension, and Redesign.

The criteria for evolution of a program are reliability, speed hardware cost, programming time and cost of use error tolerance and extensibility. A good program should utilize memory and times efficiently. An interface should be simple and less costly as far as possible to perform a ascertain task. Good design and clear documentation make a program simple and it can be used by others.

SOFTWARE SELECTION:-

Software selection is critical aspect of system development. These are two ways of acquiring software custom-made or "off-the-shelf" packages. Today's trend towards purchasing packages, which represent roughly 10 percent

of what are costs to, developed same in house. Prior to selecting the software, the project team must setup criteria for software selection. Software readability brings up the concept of modularity. Functionally, it is definition of the e facilities, performance and other factors that the user requires in the finished product. Capacity refers to the capability of the software package to handle the user's requirements. The criterion, usability refers to the effort required to the operate, prepare the input and interpret the output program. Serviceability focuses on documentation and vendor support lost is major consideration. The other criteria are flexibility, security, performance, and ownership.

SECURITY FEATURES:-

Every candidate system must provide built in for security and integrity of data. Without safeguards against unauthorized access and natural disasters, a system could be so vulnerable as to threaten survival of the organization. To do an adequate job on security, a system analyst must analyze the risks, exposure and costs and specify measures such as passwords and encryption to provide protection. In addition, backup copies of software and recovery re start procedures must be available when needed.

System security refers to the technical innovations and procedures applied to the hardware and operating system. To protect against deliberate or accidental damage from a defined threat. In contrast, data security is the protection of data some loss, disclosure, modification and destruction. The system security problem can be provided into four related issues: security, integrity, privacy, and access procedures.

The software entitled payroll system provides only the password protection. This lets you means that no one else can open the system they know the password. It makes sure unauthorized personnel cannot execute it.

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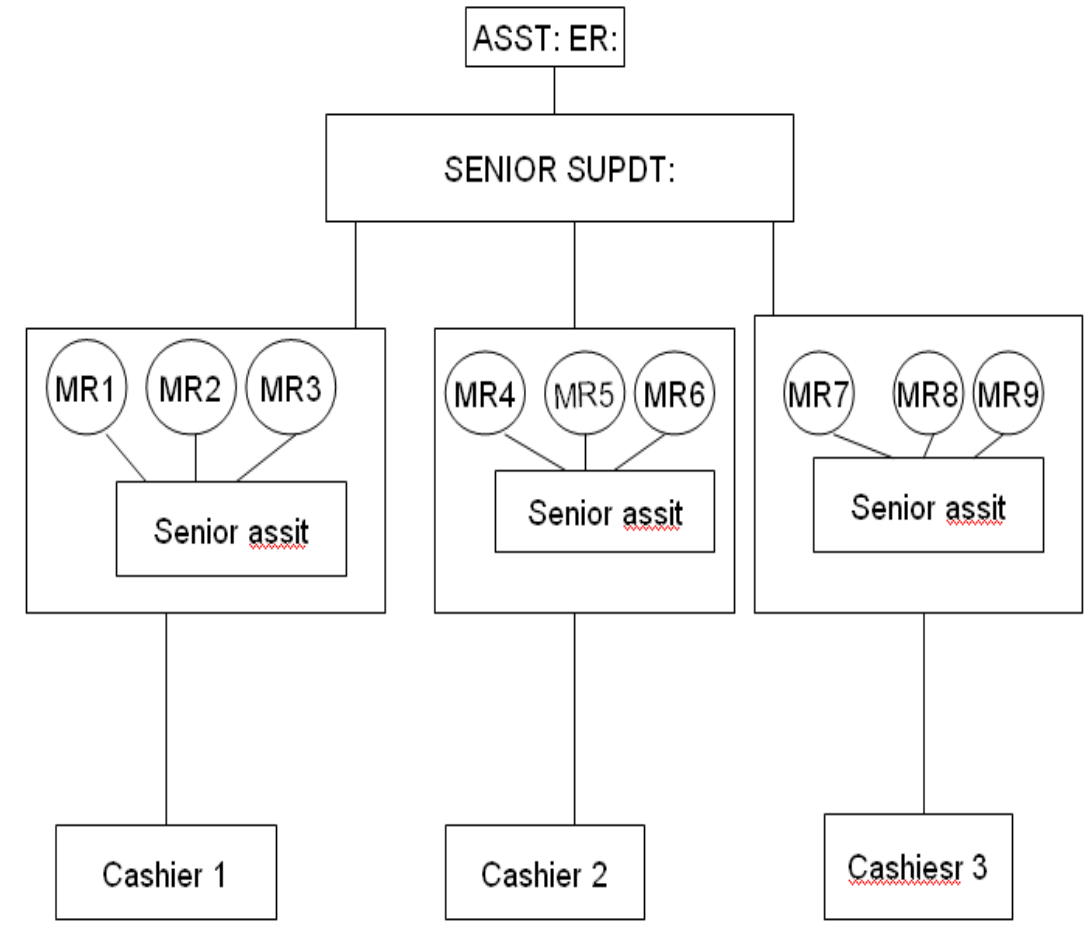

MR – Meter reader

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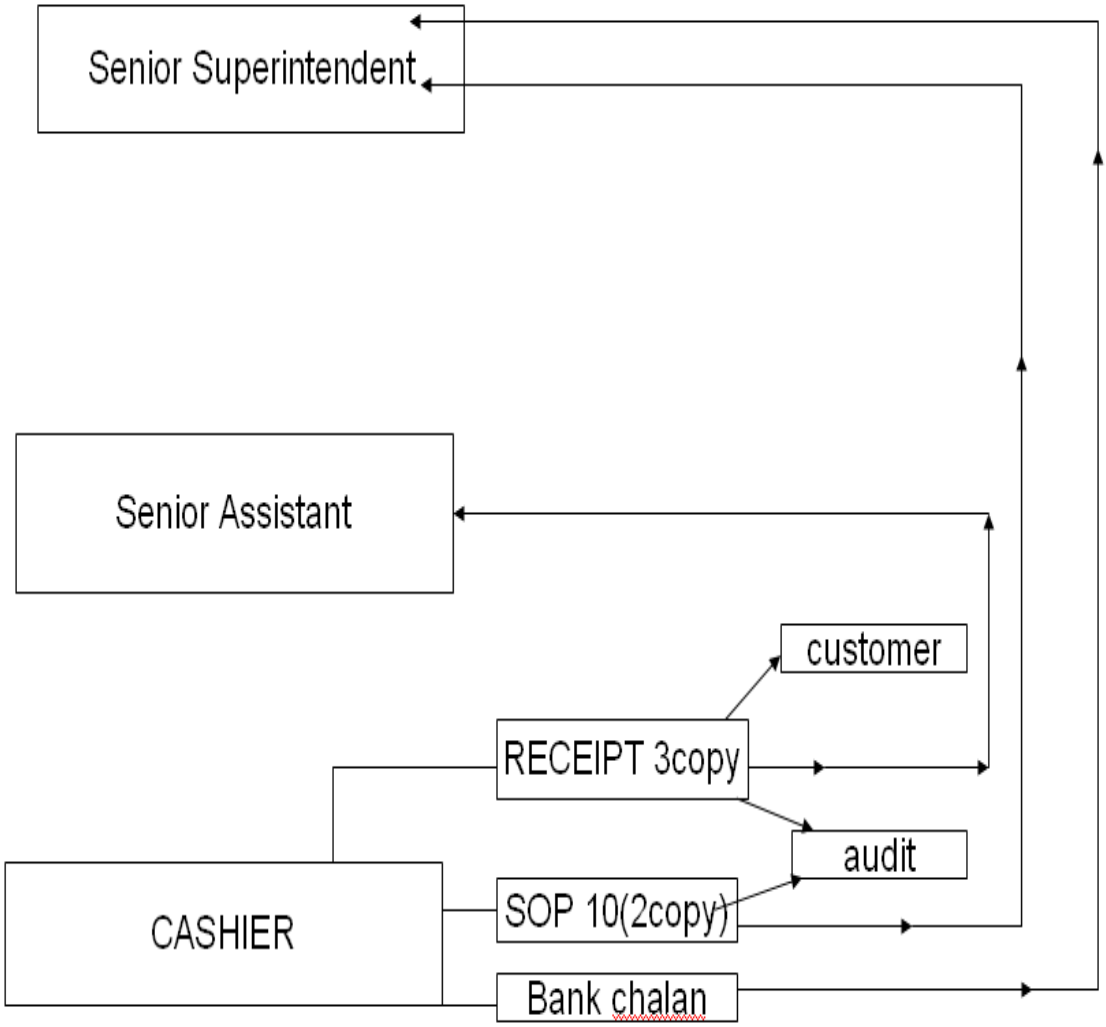

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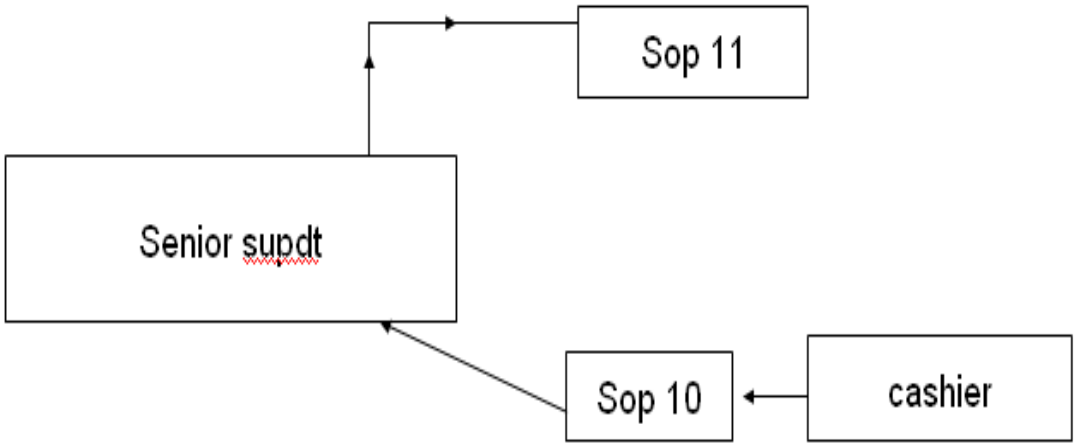

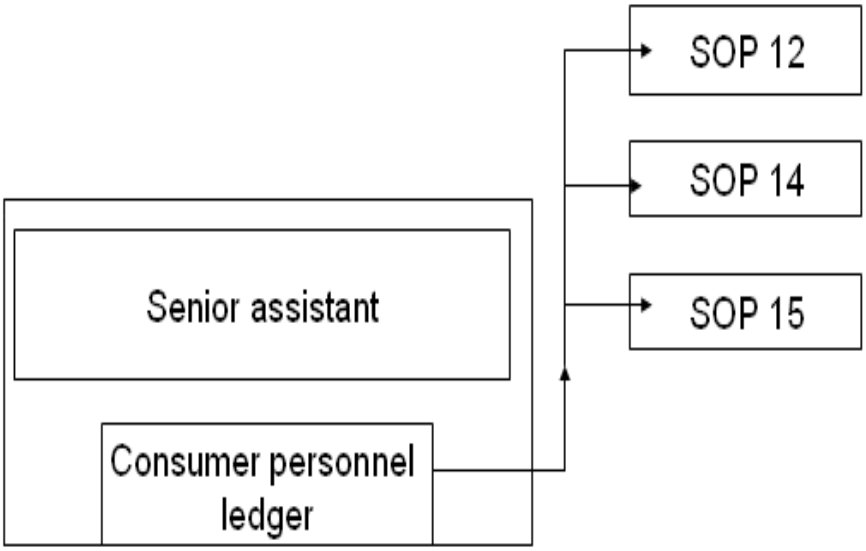

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Sop 11 tallied with sop 12
Sop 12 and sop 15 together tallied with sop 14

SOP= Sale of Power

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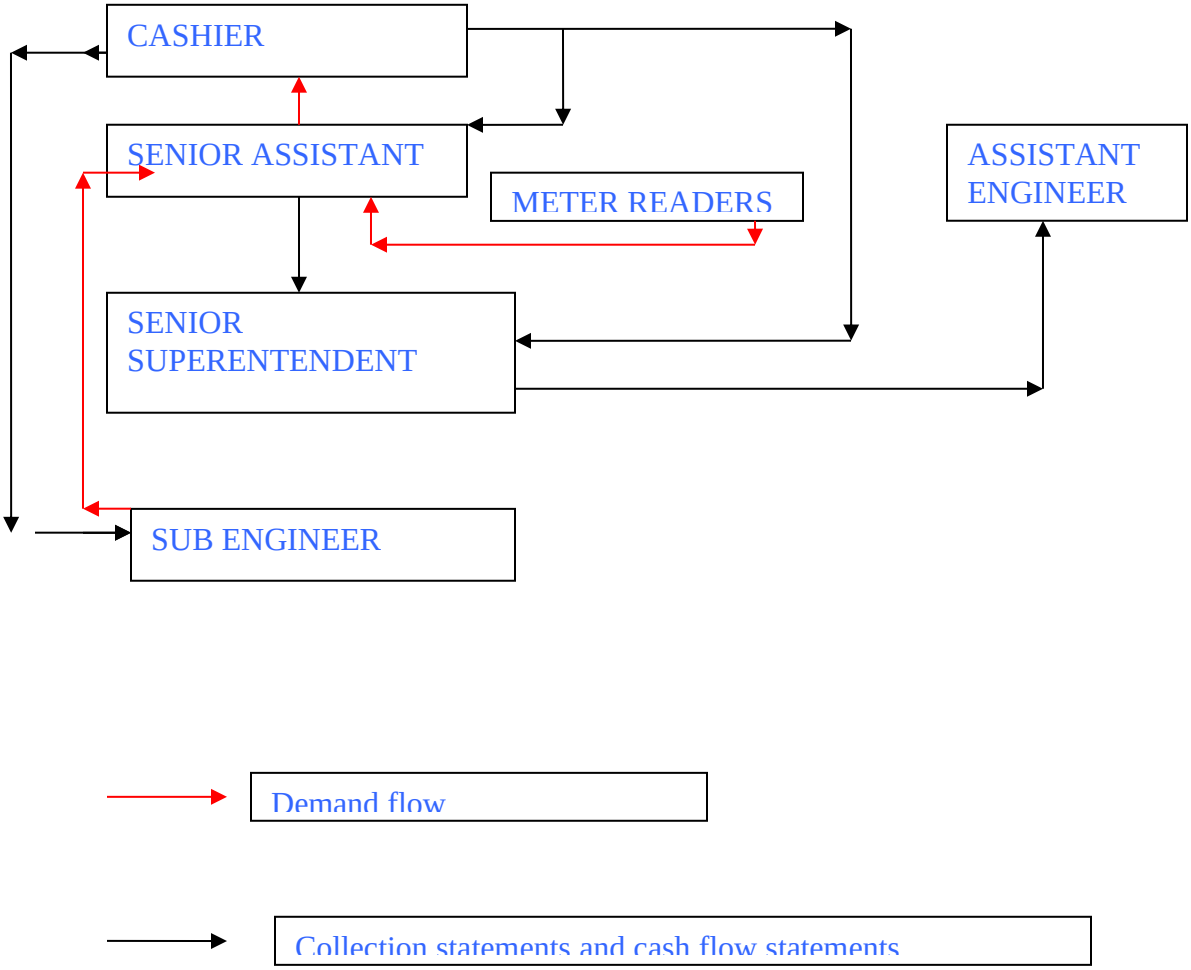
SEQUENCE CHART

Administrative Module



Kerala State Electricity Board is the sole distributor of electric power in Kerala They have vide network in the whole kerala but still now they are using manual system for their collection of revenue and its accounting. Here this project proposes a computerized collection system very similar to the manual operations they are practicing now. This project gives administrative

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power to the server to share resources to the computers in the network This project plans to a client server system, and prone to upgradeable for any type of future requirements.

Our system can view all users connected with the server. Our system can view the hardware status of the client and all process currently running under the client machine.

We can transfer the needed files from and to the system. Our system supports client screen and can visualize that to the administrator. He can also get the history of users logged in these systems. So the project will benefit every administrator in delivering his duties.

OBJECTIVES:-

Today the consumer who wants to remit his current bill has to identify his counter before standing in the queue. This is too difficult for him in a rush day. Moreover he has to bring exact tender coins to remit his current charge. In this system, balance if any due to the consumer can be adjusted as his future credit. Since this is a data base program any cashier can access the data of any consumer in front of him this may helpful to both the consumer as well as the staffs handling the huge number of consumers.

This program may reduce the manual processing time.

TARIFF STRUCTURES:-

LT- IA domestic (single/three phases)

LT- II colonies (single/three phases)

LT – III temporary connection

LT – IV industry

LT- V agriculture

LT- VI A non domestic (single/three phase)

B State government office, hostel building (university), TB, etc.

C KWA, KSRTC, KSWTC, income tax & central excise dept:

Sales tax dept, postal, railway, etc.

D schools, hostels, polio homes and similar institutions,

LT- VII A commercial where connected load exceeds 1000w

LT- VII B commercial where connected load below 1000w

LT- VIIC tariff applicable to cinema theatres, circus and similar activities.

LT- VIII temporary extension taken form consumer premises

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ANALYSIS:-

a) Data Flow Diagram

Data flow diagram is a graphical representation of data movement, process files used in support of an information system. Unlike detail flow charts, DFDs do not supply detailed description of modules but graphically describe a system's data and how the data interact with the system. Workflow focuses on what happens to the data through various points in the system. A data flow diagram represents the information at each processing points in the system and the direction it takes from the source and destination

To construct a data flow diagram, we use

- ❖ Arrows
- ❖ Circles
- ❖ Open-ended boxes
- ❖ Squares

An arrow identifies data flow or data in motion. Circle stands for a process that converts data into information. An open-ended box represents a data source or a temporary repository of data. A square defines a source or the destination of given data

The following information rules govern construction of DFD

a) Arrows should not cross each other
b) Squares, circles, and files must bear names.

No two data flows, squares or circles can have the same etc.

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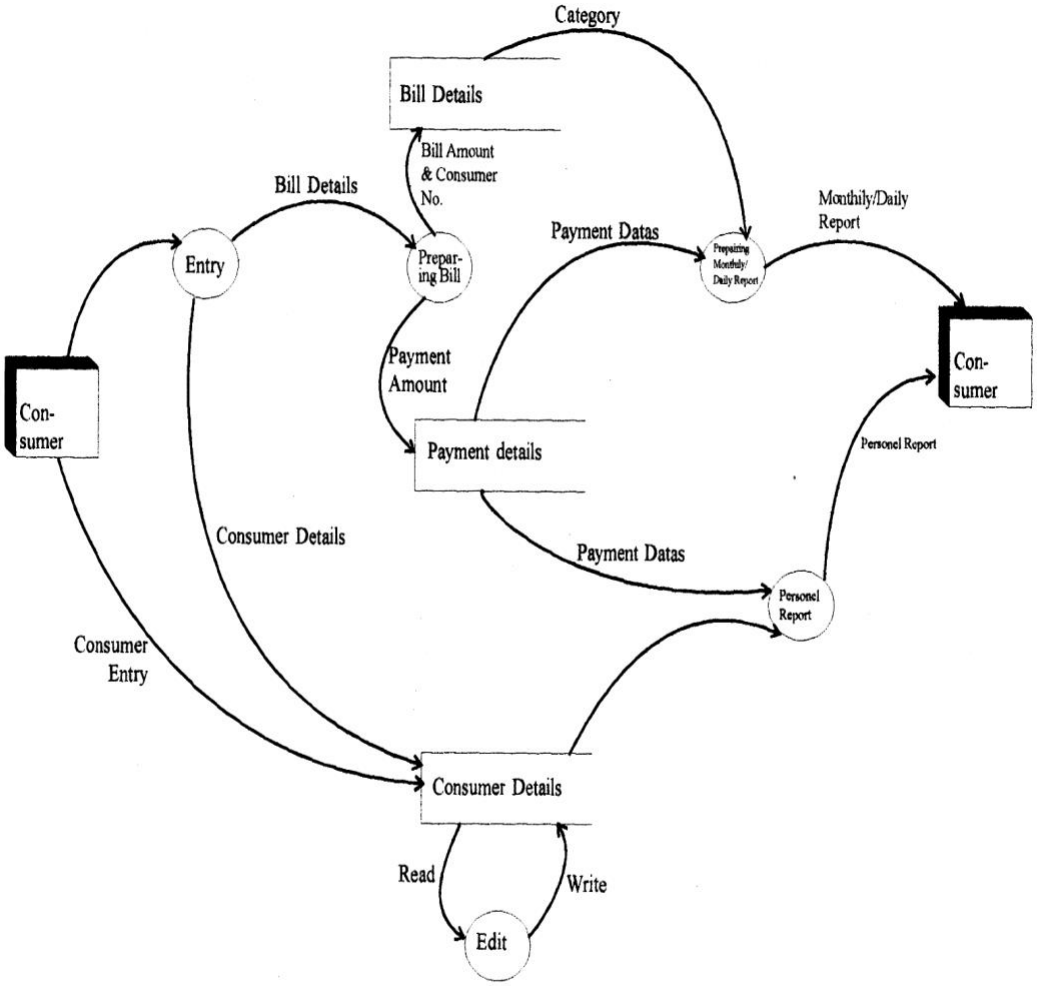

DATAFLOW DIAGRAM

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DEMAND

SL NO	FIELD NAME	TYPE	WIDTH
1	areacode	varchar	20
2	mrcode	varchar	20
3	conno	varchar	20
4	previousreading	numeric	
5	presentreading	numeric	
6	unitconsumed	numeric	
7	demandid	varchar	20
8	fixedcharge	numeric	
9	energycharge	numeric	
10	duty	numeric	
11	mtrrent	numeric	
12	reconfee	numeric	
13	demand	varchar	20
14	subsidy	numeric	
15	advancepaid	numeric	
16	previousarrears	numeric	
17	total	numeric	
18	intrestoncd	numeric	
19	netamt	numeric	
20	bd	varchar	
21	dd	varchar	
22	disd	varchar	

ACD COLLECTION

SL NO	FIELD NAME	TYPE	WIDTH
1	conno	varchar	20
2	acdcollected	varchar	20

CD

SL NO	FIELD NAME	TYPE	WIDTH
1	conno	varchar	20
2	cdid	varchar	20
3	cdneeded	numeric	
4	cdavilable	numeric	
5	acd	numeric	
6	intrestoncd	numeric	

ADV PAYMENT

SL NO	FIELD NAME	TYPE	WIDTH
1	areacode	varchar	20
2	mtr code	varchar	20
3	conno	varchar	20
4	period	numeric	
5	expected cc	numeric	
6	expected mr	numeric	
7	rebate	numeric	
8	total	numeric	

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CDADJ

SL NO	FIELD NAME	TYPE	WIDTH
1	conno	varchar	20
2	cdid	varchar	20
3	cdadjcc	numeric	
4	cdrefund	numeric	

CH TARIFF

SL NO	FIELD NAME	TYPE	WIDTH
1	conno	varchar	20
2	areacode	varchar	20
3	tariff id	varchar	20
4	old tariff	varchar	20
5	newtariff	varchar	20
6	finalrdng	numeric	200
7	chdate	varchar	20
8	note	varchar	20

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CONSUMER

SL NO	FIELD NAME	TYPE	WIDTH
1	conno	varchar	20
2	areacode	varchar	20
3	mrcode	varchar	20
4	tariff	varchar	20
5	phase	varchar	20
6	posetno	varchar	20
7	connectedload	varchar	20
8	conname	varchar	20
9	address	varchar	20
10	connectiondate	varchar	20
11	tariffid	varchar	20

DMD

ADJ

SL NO	FIELD NAME	TYPE	WIDTH
1	conno	varchar	20
2	dmdid	varchar	21
3	nameof office	varchar	22
4	dmdadjted	numeric	

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DMD WDR

SL NO	FIELD NAME	TYPE	WIDTH
1	conno	varchar	20
2	dmdid	varchar	21
3	totdmd	varchar	22
3	withdrawals	varchar	23

SL NO	FIELD NAME	TYPE	WIDTH
1	username	varchar	20
2	password	varchar	20
3	mode	varchar	20

MTRCH

SL NO	FIELD NAME	TYPE	WIDTH
1	conno	varchar	20
2	prmtrno	varchar	20
3	fr	numeric	
4	newmtrno	varchar	20
5	nodigits	varchar	20
6	initreading	numeric	
7	dch	varchar	20
8	mch	varchar	20
9	ych	varchar	20

MTRDETAILS

SL NO	FIELD NAME	TYPE	WIDTH
1	conno	varchar	20
2	meterno	varchar	20
3	noofdigits	varchar	20
4	initialreading	numeric	

MG

SL NO	FIELD NAME	TYPE	WIDTH
1	conno	varchar	20
2	lemgamt	varchar	20
3	scmgamt	varchar	20
4	lramt	varchar	20
5	ilemg	varchar	20
6	iscmg	varchar	20
7	ilr	varchar	20
8	mgendingdate	varchar	20

SBCOLLECTION

SL NO	FIELD NAME	TYPE	WIDTH
1	conno	varchar	20
2	areacode	varchar	20
3	mrcode	varchar	20
4	amtcollected	numeric	

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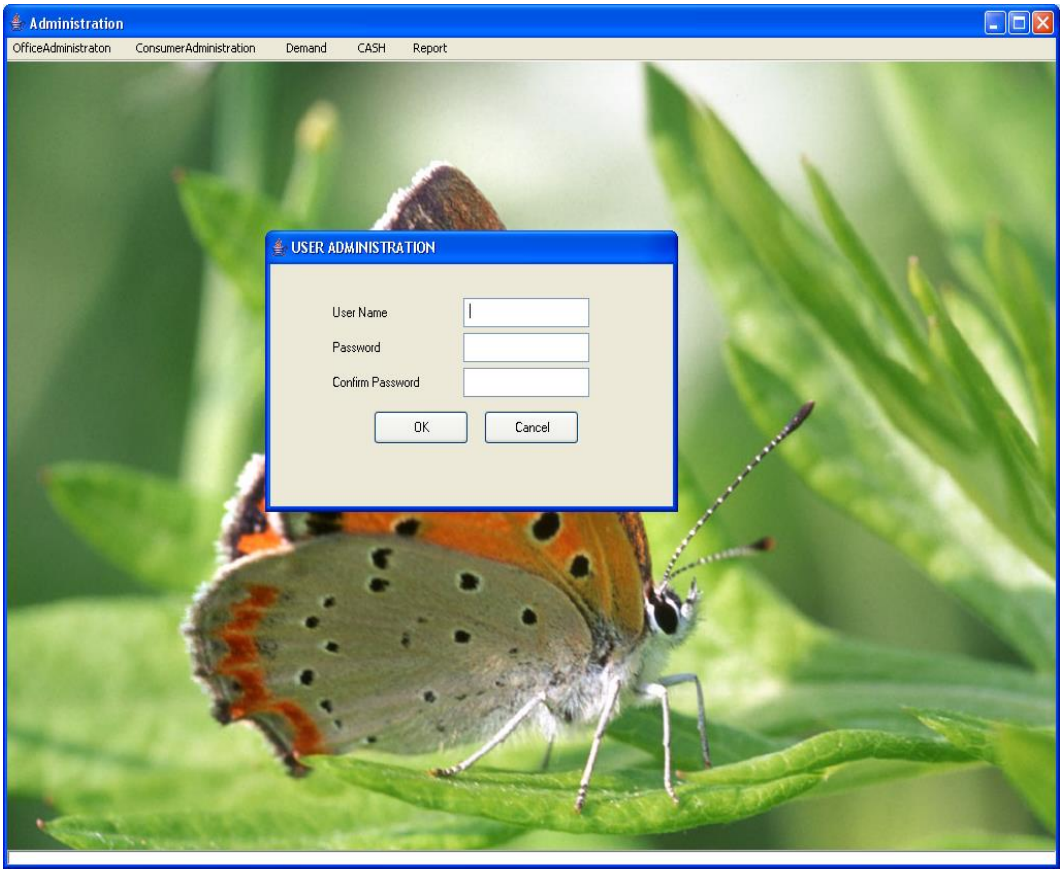

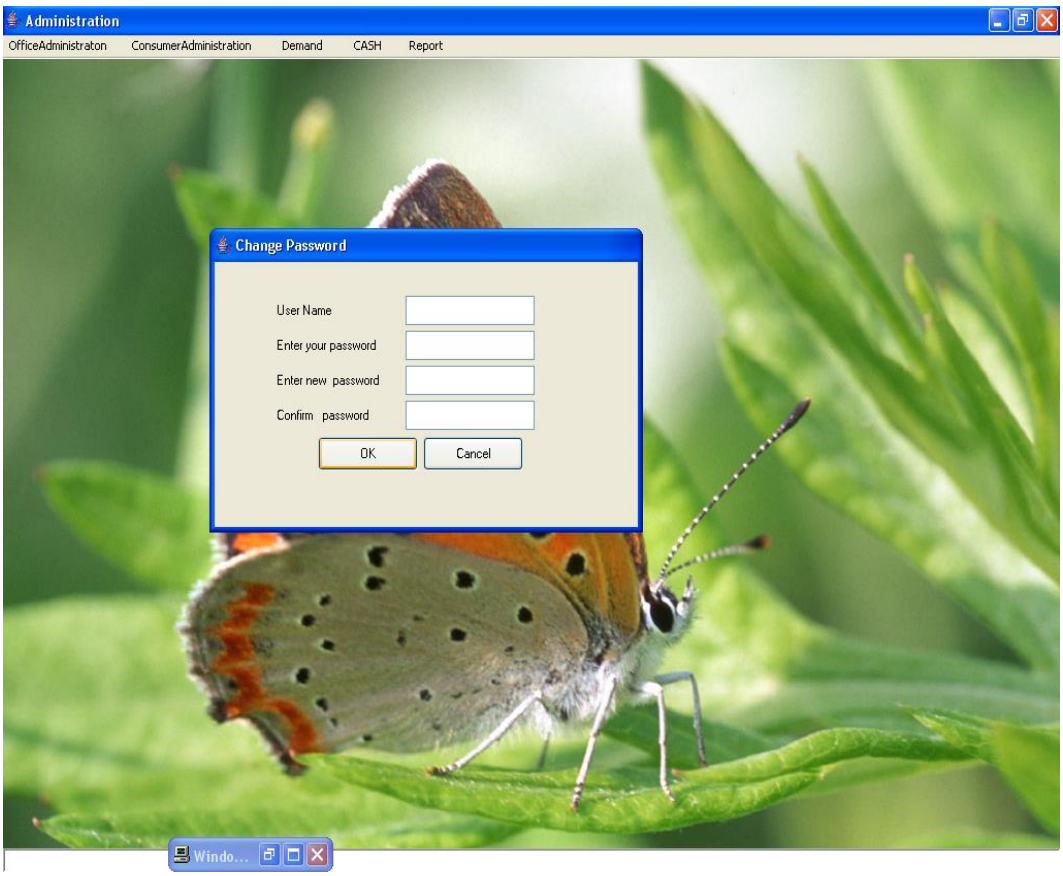

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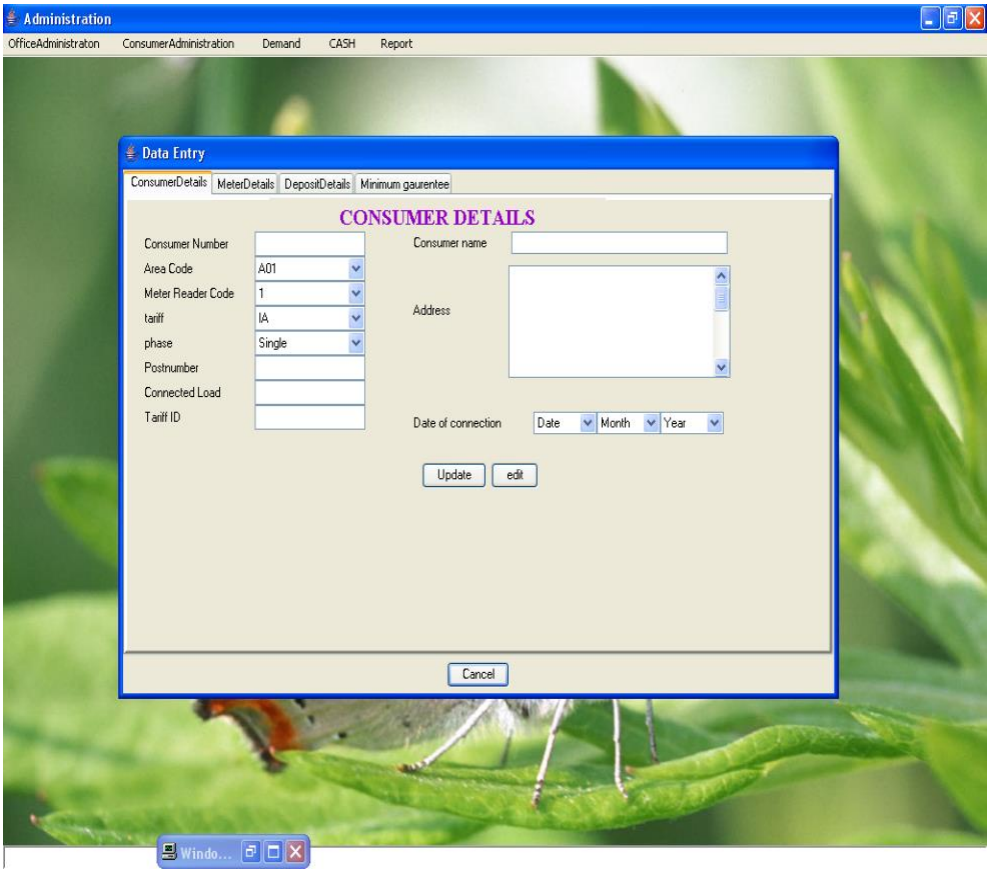
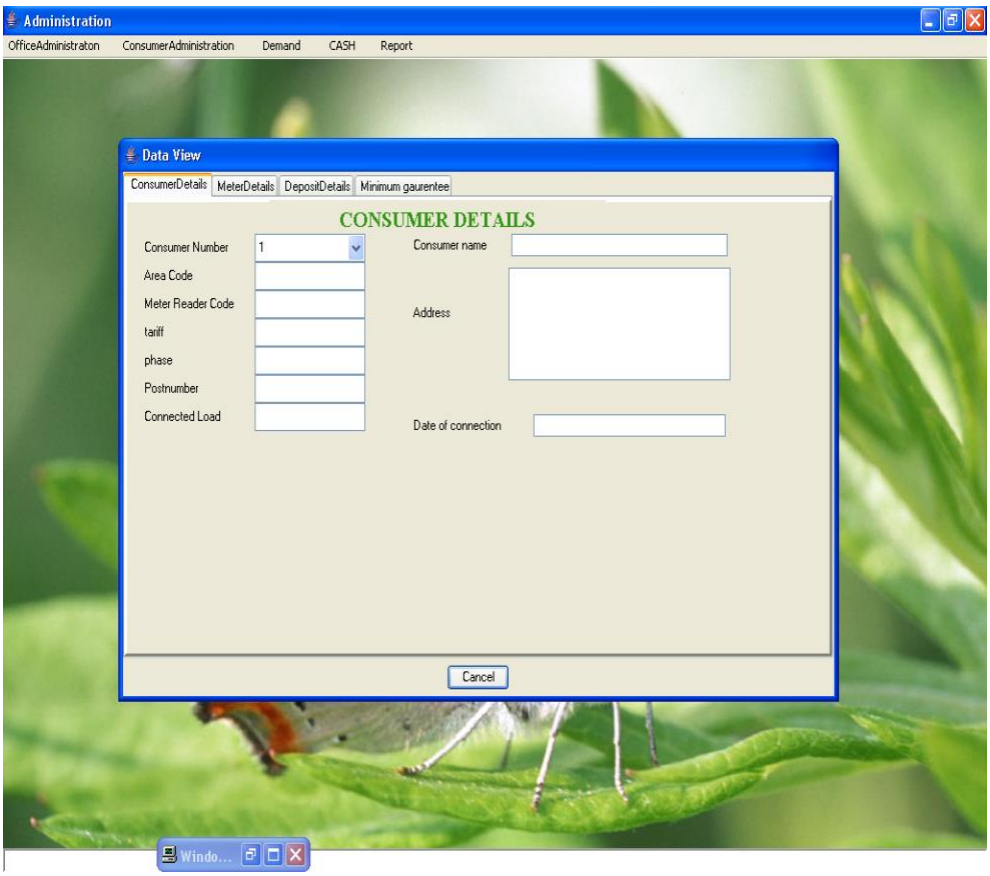
DN: c=IN, o=Personal, title=0850, pseudonym=A8FC4A8D7D204496152816 9B7EA63F06, 2.5.4.20=821c3527e6738993fe77eb8fa2611 7d32c0c49e38f885e3b1996617 5f3b118cd, postalCode=201002, st=Uttar Pradesh, serialNumber=D19FCC2B2D739E2DBEE341F 97889AF9EFA23997A3F3380362 6EB7FE44C 991BAE, cn=Neetu Chawla
Date: 2023.10.18 12:39:12 +05'30'





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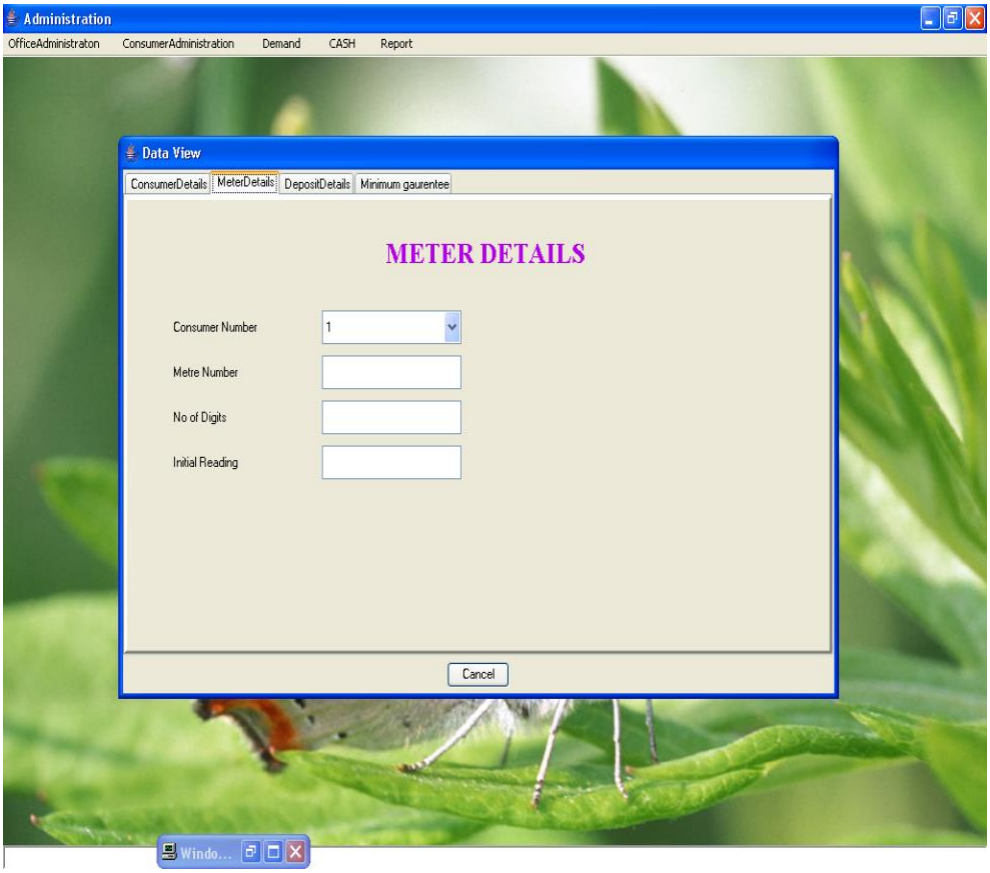
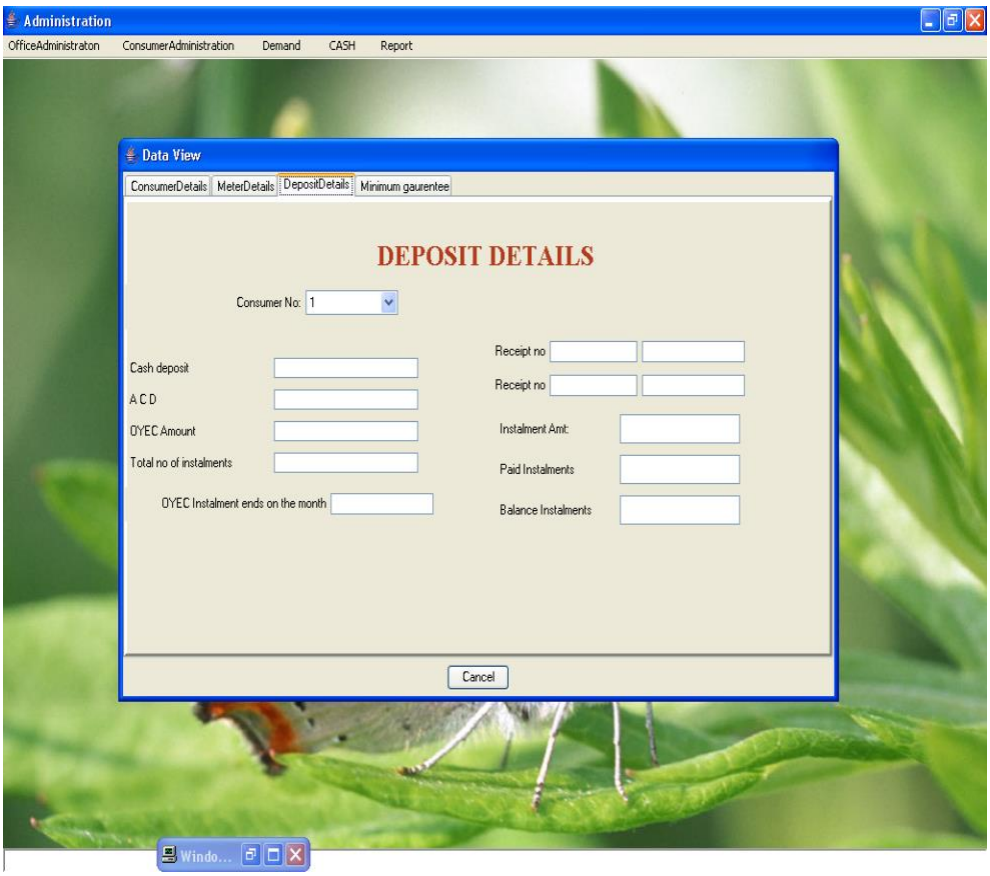
Date: 2023.10.18 12:39:12 +05'30'





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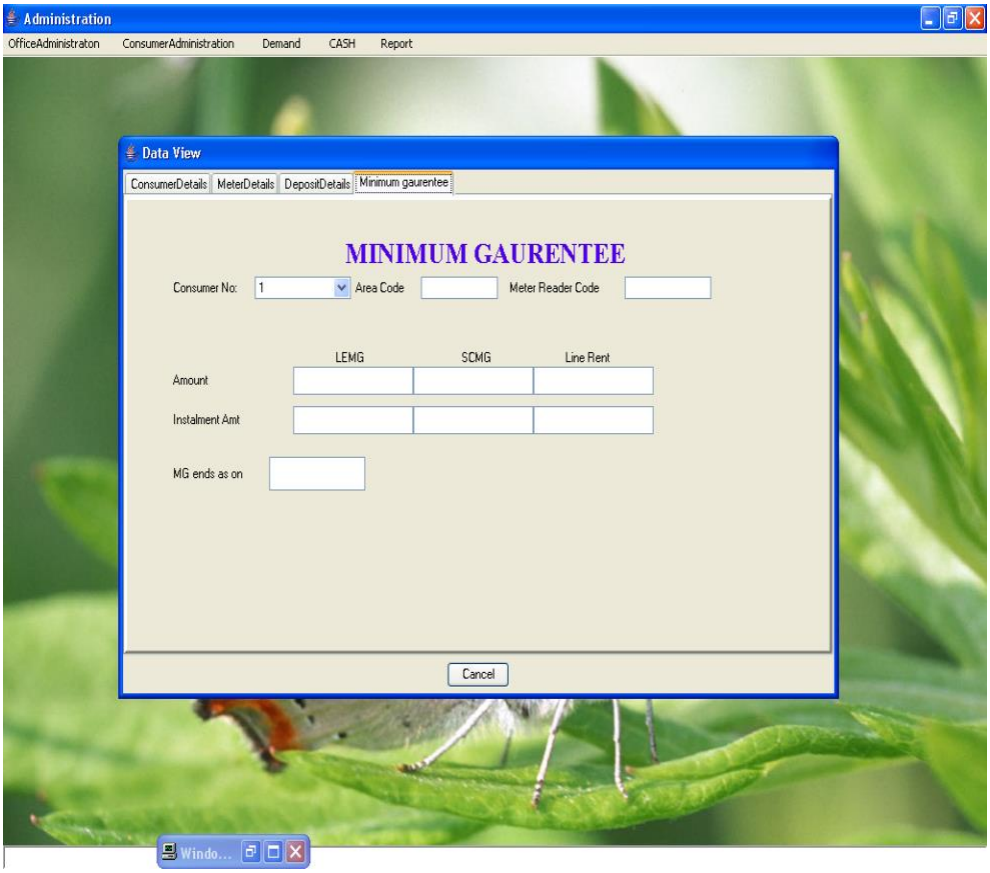

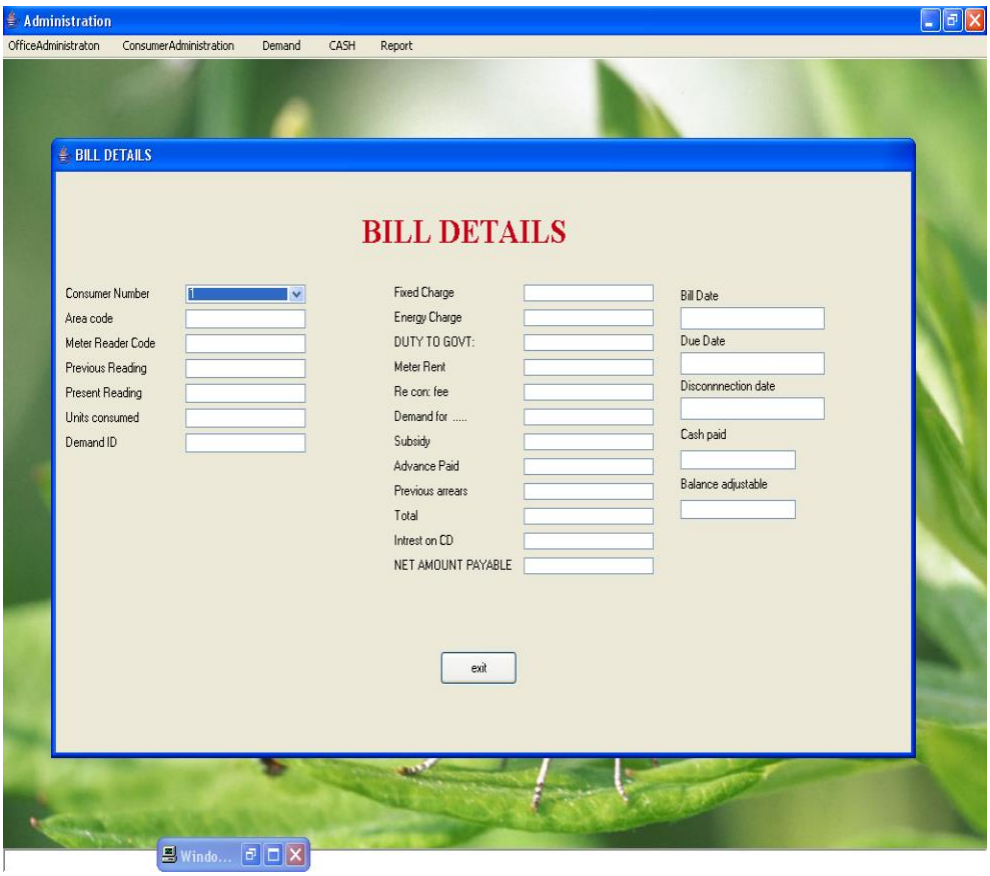

Neetu Chawla

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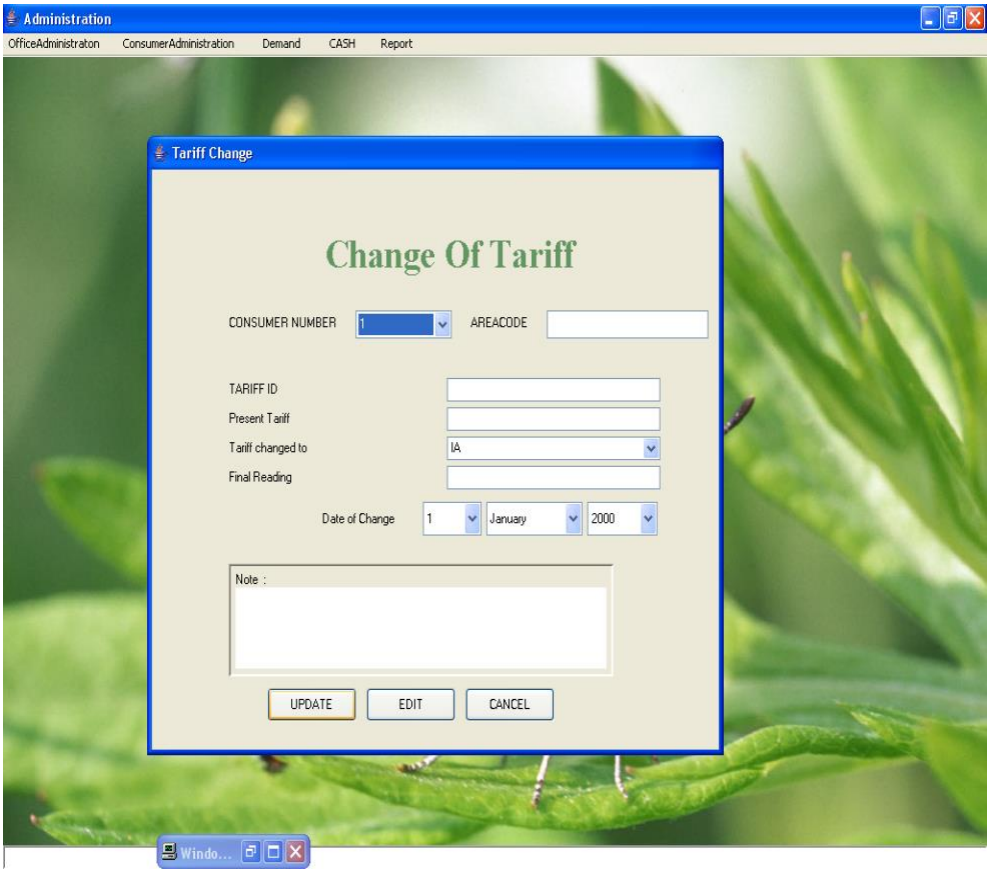
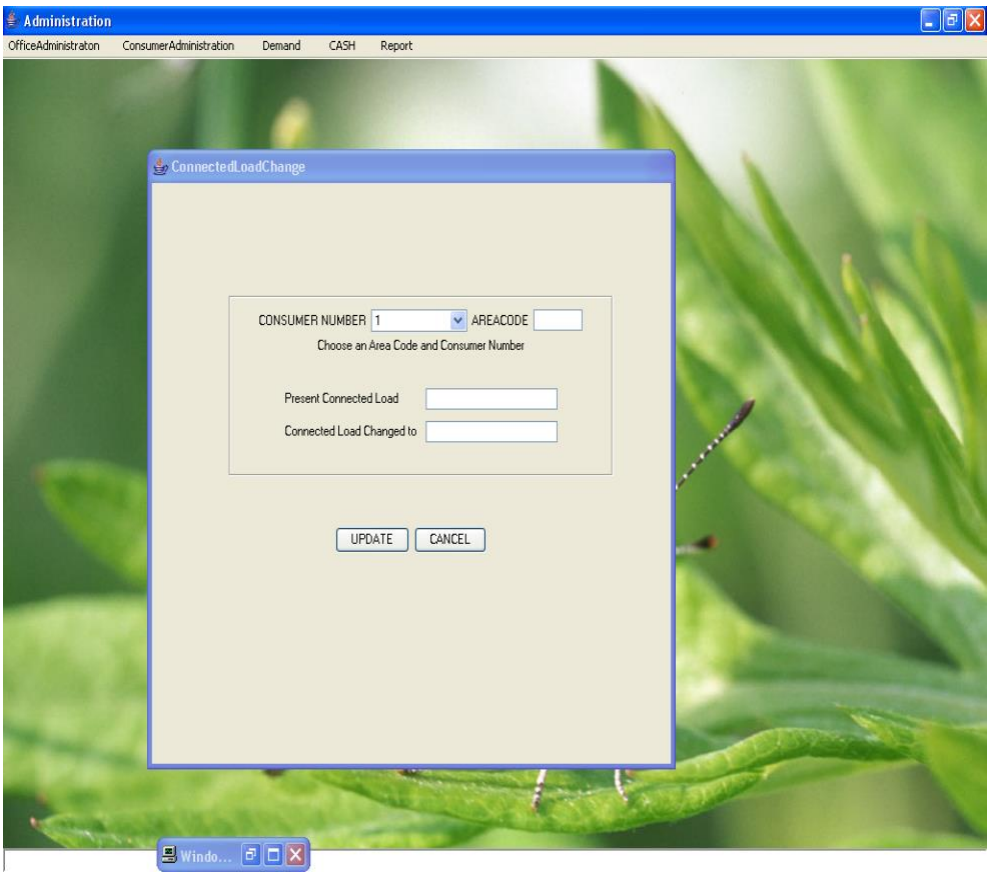
Date: 2023.10.18 12:39:12 +05'30'





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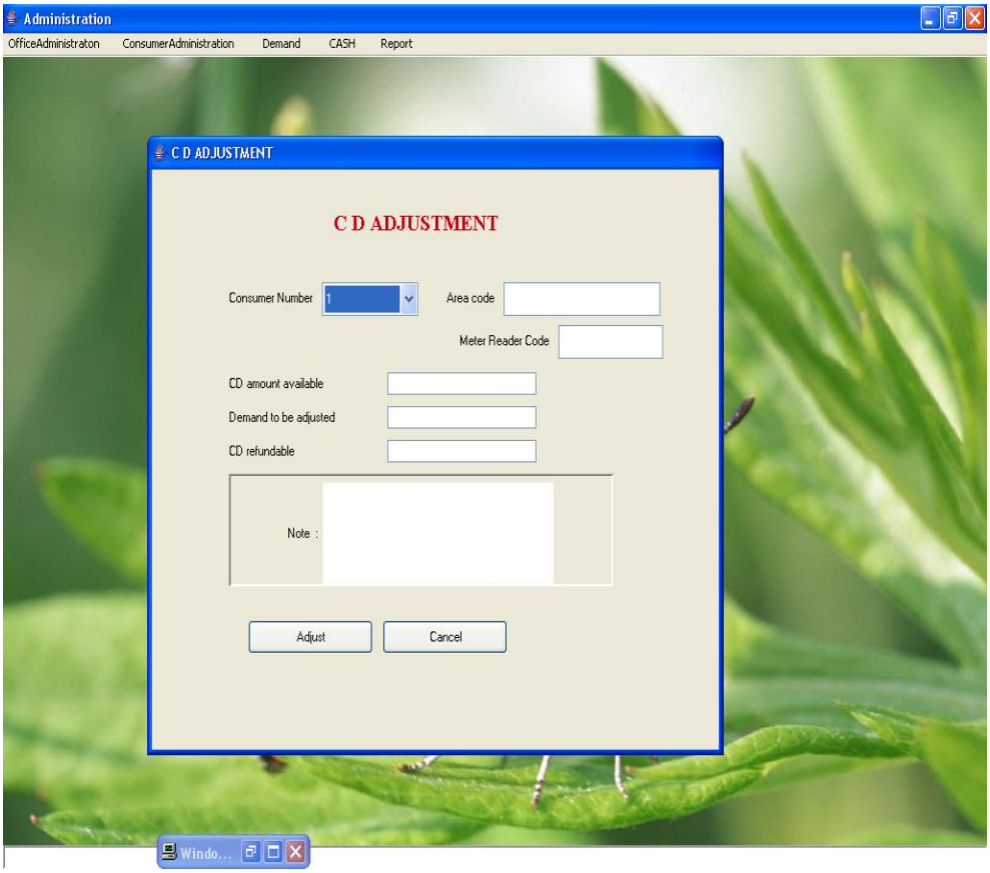

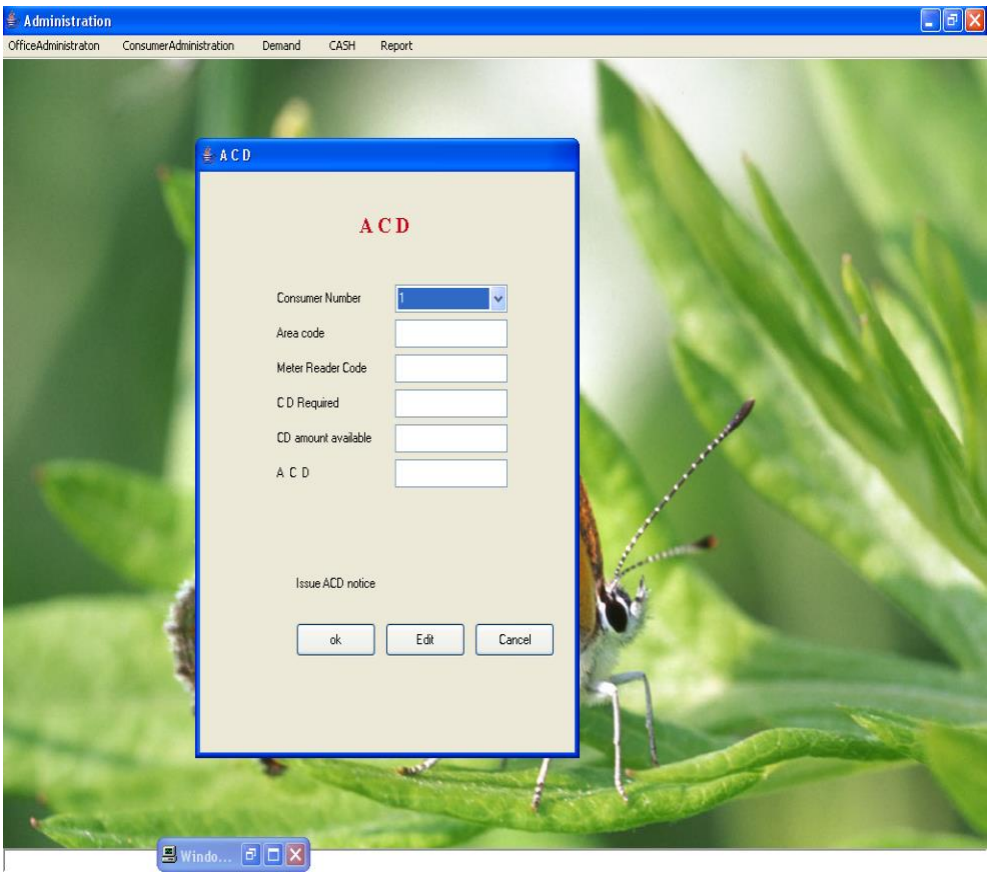

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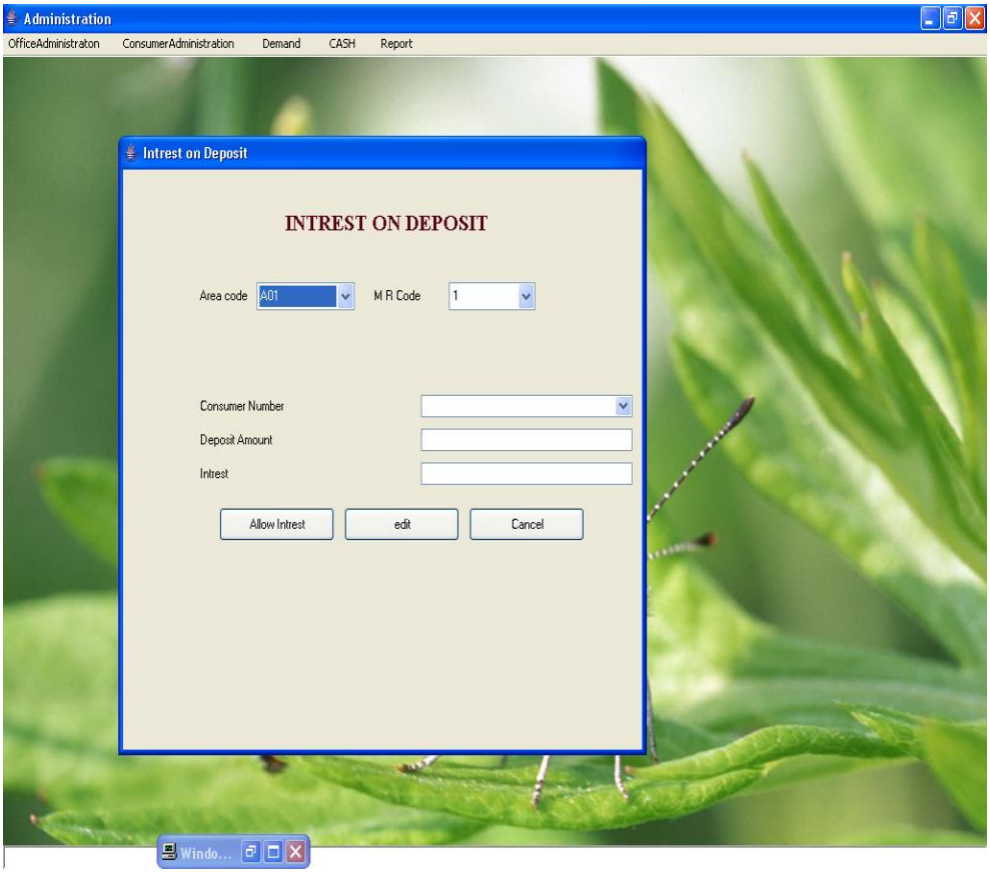

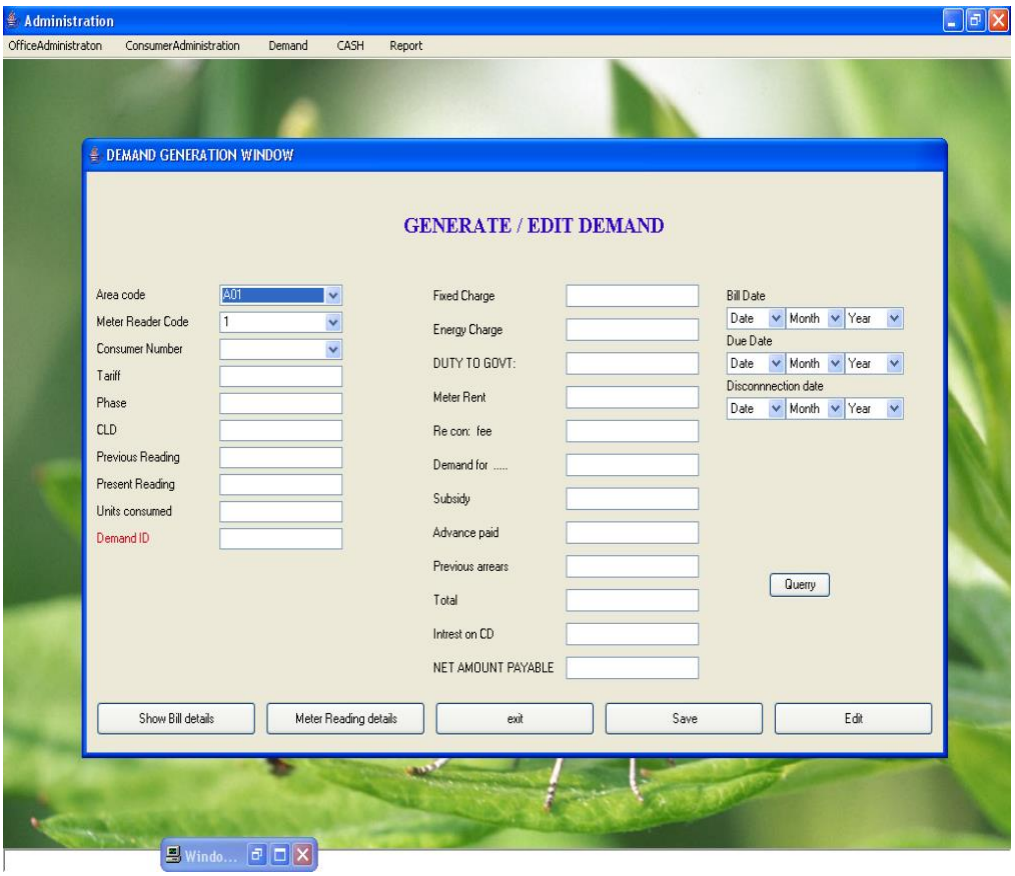

Neetu Chawla

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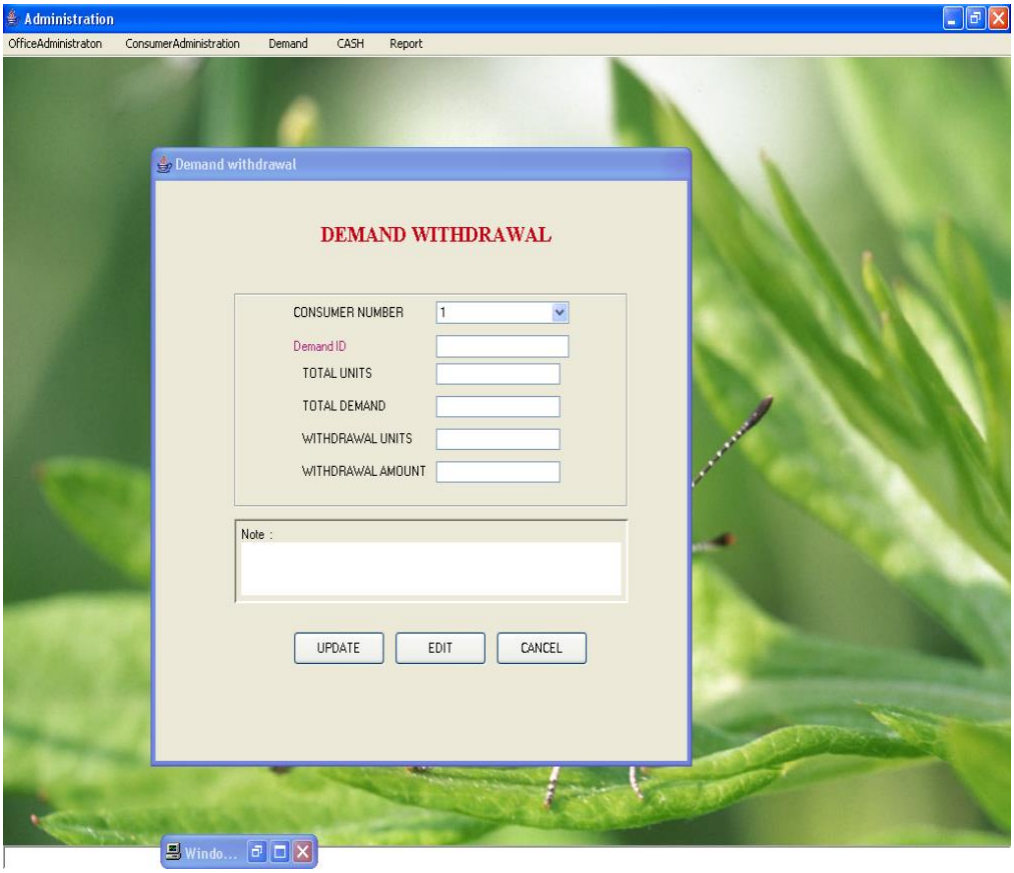
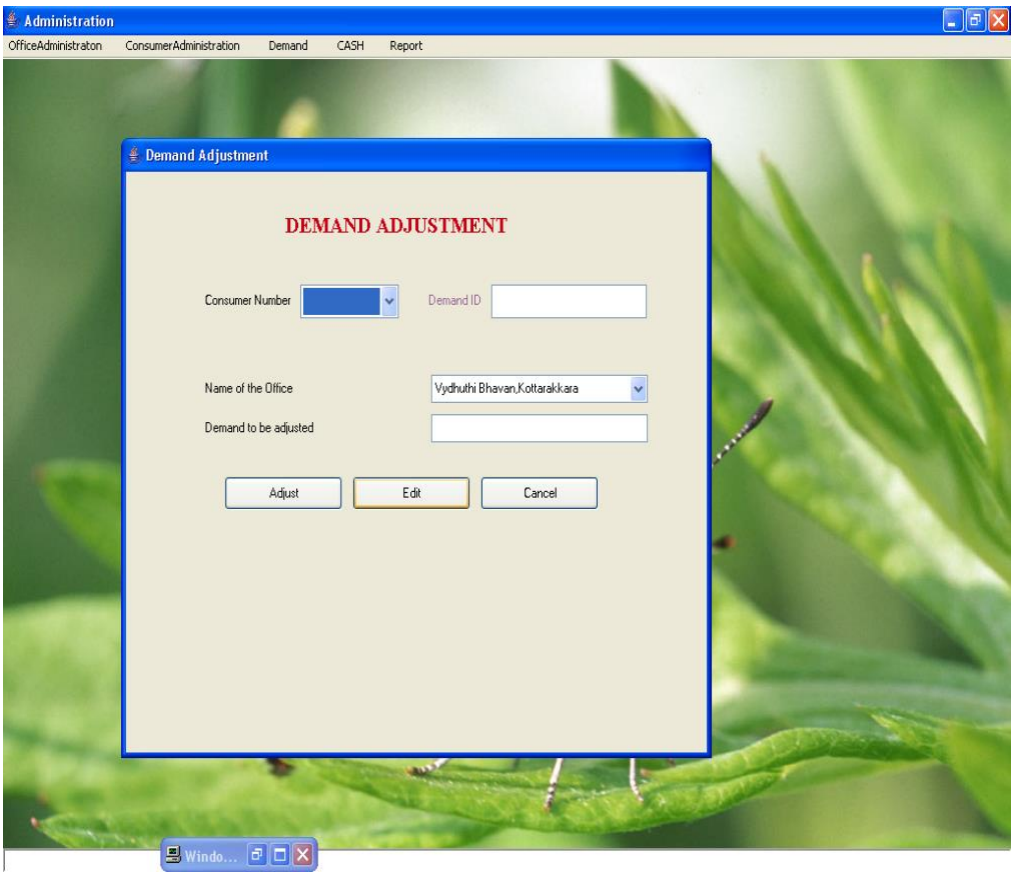
Date: 2023.10.18 12:39:12 +05'30'





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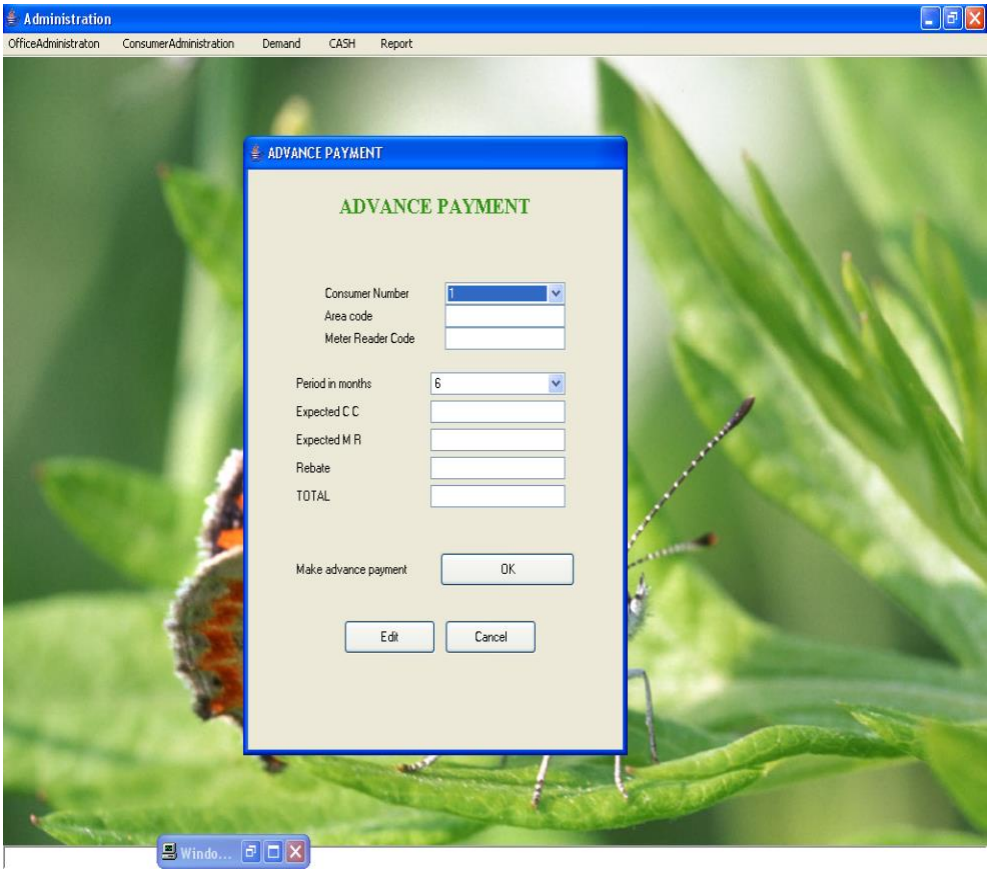

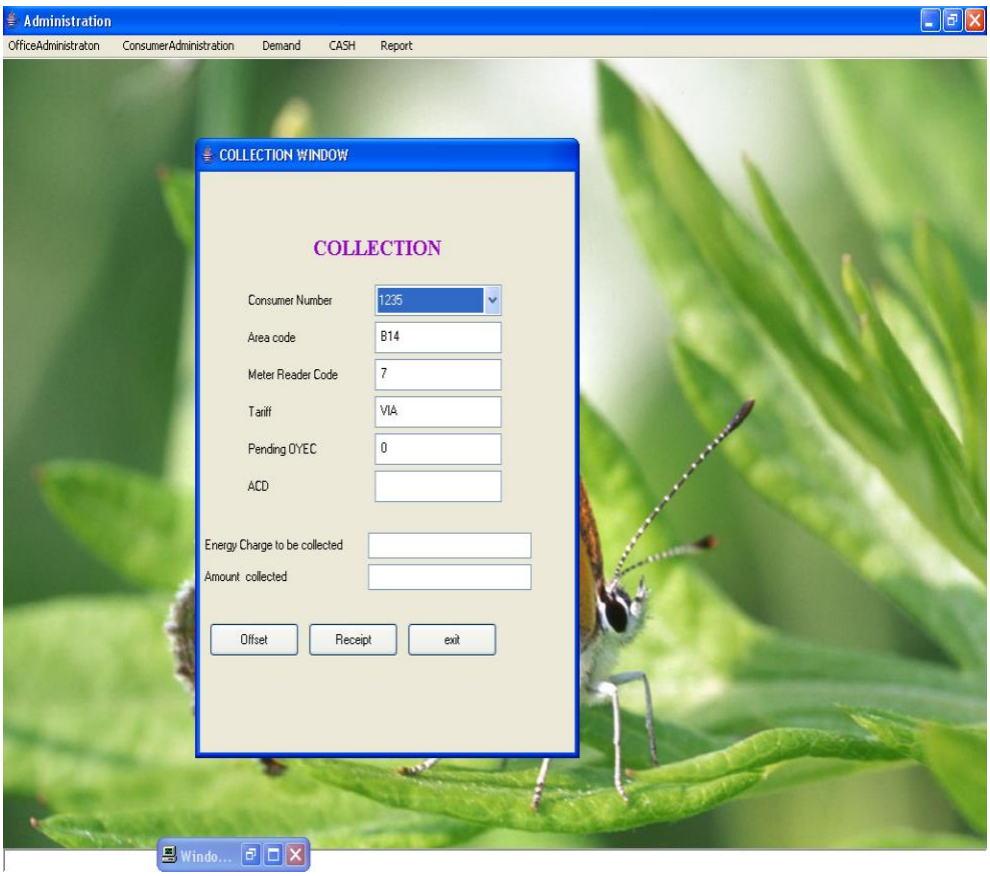

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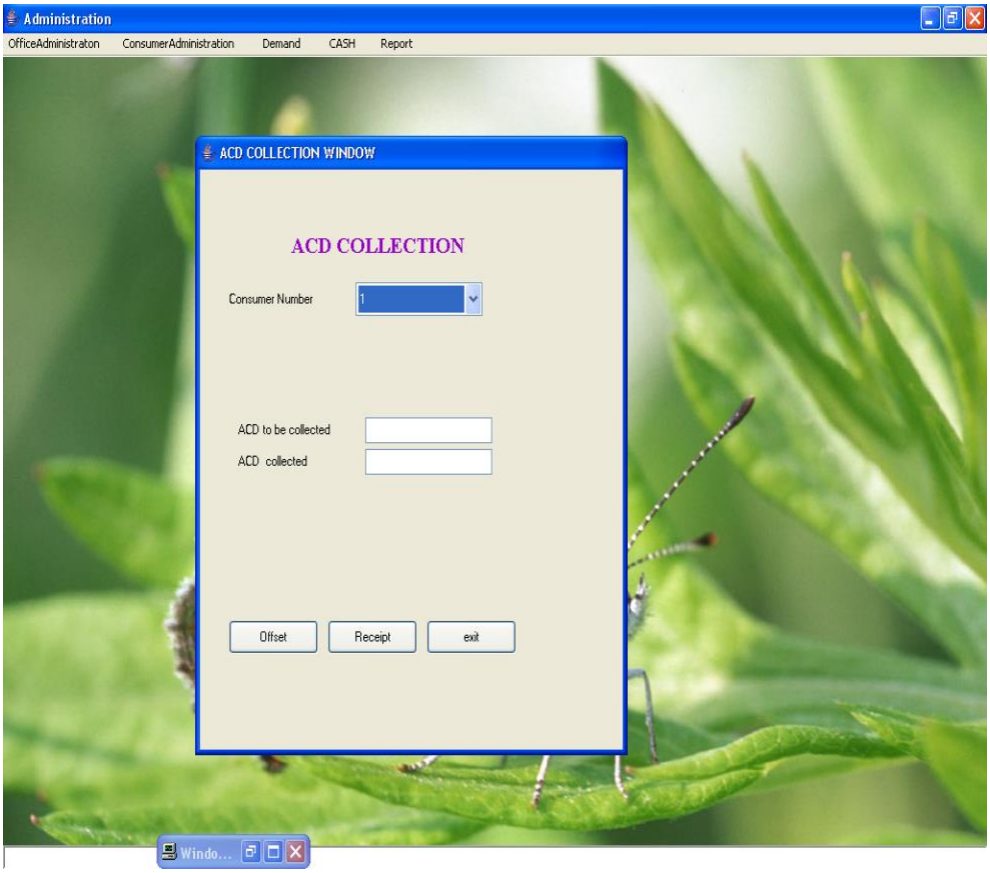

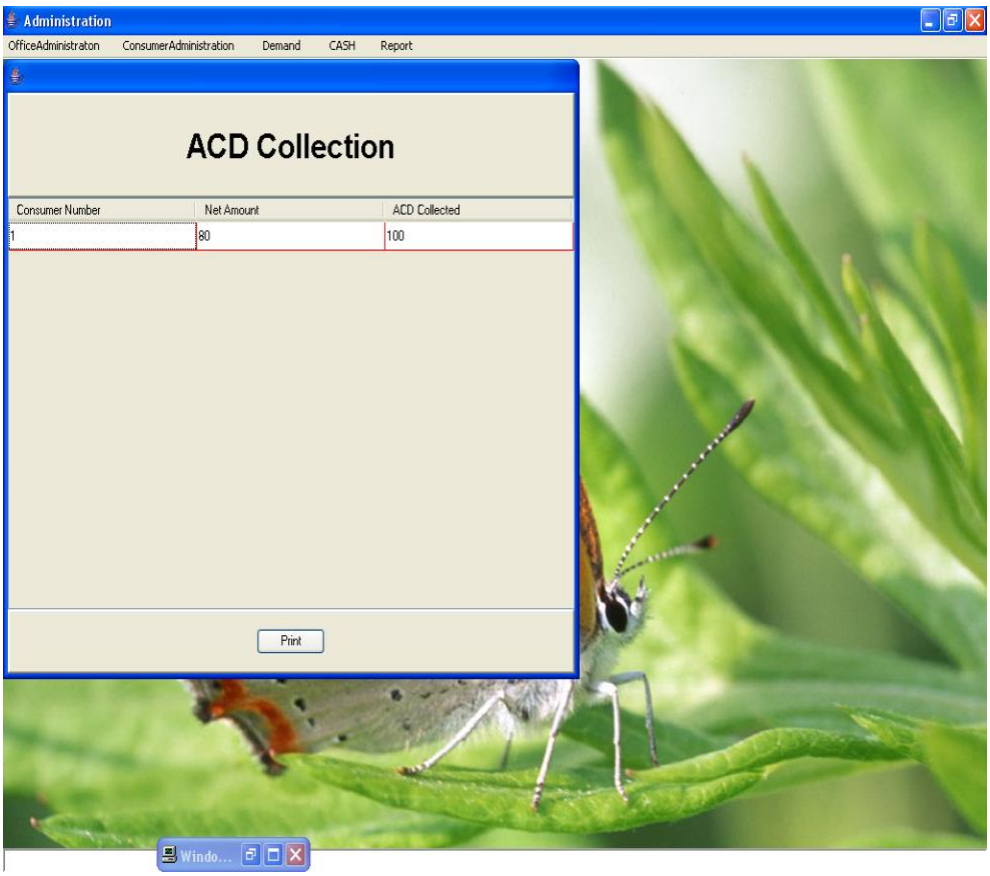

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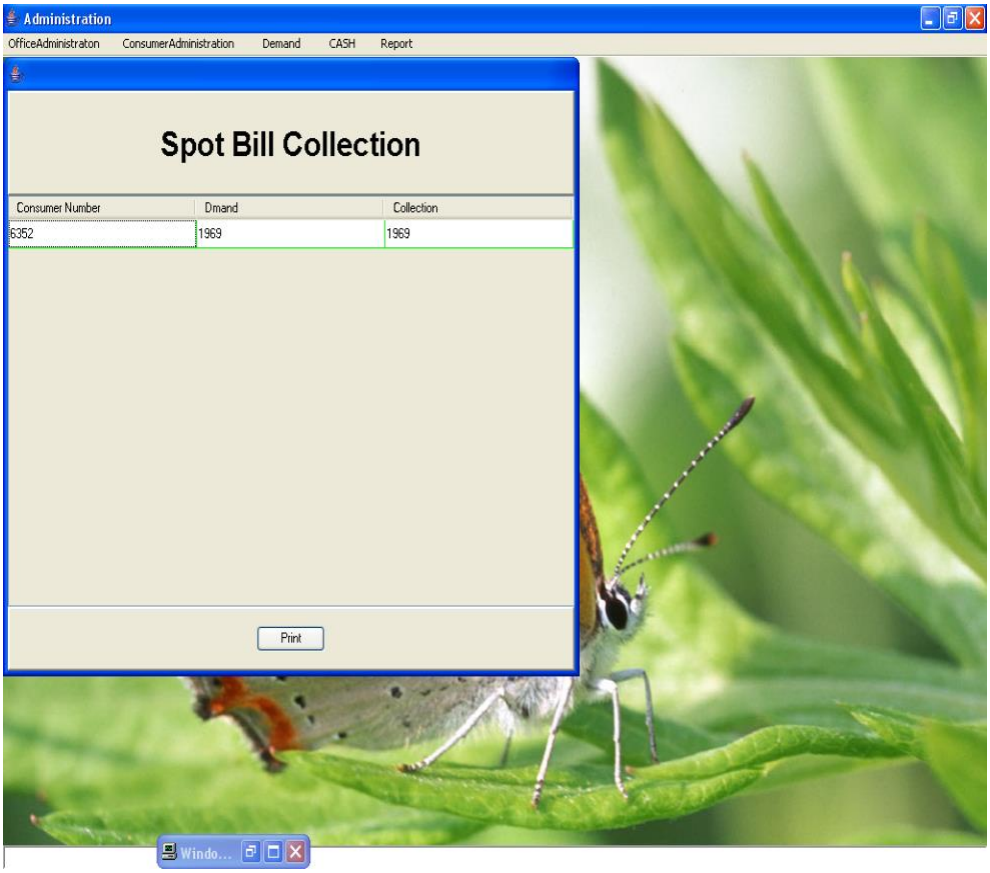

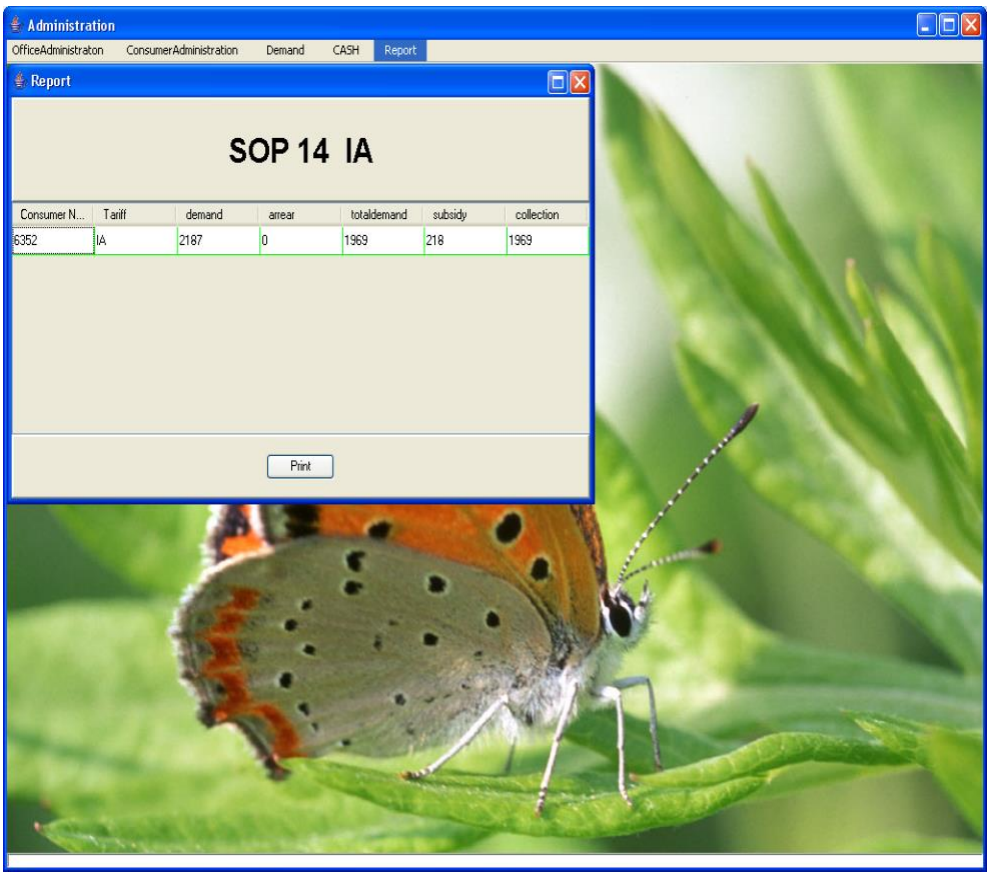

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Date: 2023.10.18 12:39:12 +05'30'

PROGRAMME CODES

```
import java.awt.*;
import javax.swing.*;
import java.awt.event.*;
import java.sql.*;
import javax.swing.border.*;

public class SeniorManagerLogon extends JFrame implements ActionListener
 {
    JMenuBar mb;
    JMenu file,ca,report,csd,cd,dmd,csh;
    JMenuItem
user,cpwd,exit,tc,woa,addcon,cln,acdcln,acd,modifycon,clc,nc,vc,vb,mc,vd,dw,id,
cdaj,acdaj,adj,adv,DatEnt,DatView,acdrep,colln,sop14,sop141a,sop142,sop143,so
p144,sop145,sop146a,sop146b,sop146c,sop146d,sop147a,sop147b,sop147c,sop14
8;
    Connection con;
    PreparedStatement stat;
    JDesktopPane desktop;
    public SeniorManagerLogon(String title)
    {

            super("   L  T  BILLING  ");
            try{

    UIManager.setLookAndFeel("com.sun.java.swing.plaf.windows.WindowsLoo
kAndFeel");
SwingUtilities.updateComponentTreeUI(this);
            }catch(Exception ex)
            {
```

```
System.out.println("Exception in LookAnd Feel");
                }
                String category=title;
                desktop = new JDesktopPane();
                mb = new JMenuBar();
                file = new JMenu("OfficeAdministraton  ");
                user = new JMenuItem("Add User");
                cpwd = new JMenuItem("Change Password");
                exit = new JMenuItem("Exit");
                file.add(user);
                file.add(cpwd);
                file.addSeparator();
                file.add(exit);

                ca = new JMenu("  ConsumerAdministration   ");
                nc = new JMenuItem("Add / Edit Consumer");
                //addcon = new JMenuItem("Add New Consumer");
                //nc.add(addcon);
                vc = new JMenuItem("View Consumer Status");
                vb = new JMenuItem("View Bill details");

                //csd.add(modifycon);

                //mc = new JMenuItem("MeterChange");
                tc = new JMenuItem("Change Tariff");
                clc = new JMenuItem("Connected Load Change");
                cd = new JMenu("Cash Deposit ");

                        cdaj=new JMenuItem("C D adjustment");
                        acdaj=new JMenuItem("A C D");
                        id = new JMenuItem("Intrest on deposit");
                cd.add(cdaj);
```

```
            cd.add(acdaj);
            cd.add(id);
            woa = new JMenuItem("WalkOrderAssignment");
//          DatEnt=new JMenuItem("Entering new consuer");
//          DatView=new JMenuItem("View a consuer");
            ca.add(nc);
            ca.add(vc);
            ca.add(vb);
//          ca.add(mc);
            ca.add(tc);
            ca.add(clc);
            ca.add(cd);
            ca.add(woa);
            //ca.add(DatEnt);
            //ca.add(DatView);
            dmd=new JMenu("   Demand   ");
        vd = new JMenuItem("Generate/edit Demand ");
        dw = new JMenuItem("Demand Withdrawal");
        adj = new JMenuItem("Demand Adjustments");
        adv = new JMenuItem("Advance payment");
            dmd.add(vd);
            dmd.add(dw);
            dmd.add(adj);
            dmd.add(adv);

        csh=new JMenu("   CASH   ");
        cln = new JMenuItem("Spot Bill Collection ");
        csh.add(cln);
        acdcln=new JMenuItem("ACD Collection ");
        csh.add(acdcln);
            report = new JMenu("  Report ");
            acdrep=new JMenuItem("ACD Collection Report");
```

```
colln=new JMenuItem("Spot Bill Collecton Report");
sop14=new JMenu("Spot Bill Collecton Report");

        sop141a=new JMenuItem("SOP 14 - IA");
        sop142=new JMenuItem("SOP 14 - II");
        sop143=new JMenuItem("SOP 14 - III");
        sop144=new JMenuItem("SOP 14 - IV");
        sop145=new JMenuItem("SOP 14 - V");
        sop146a=new JMenuItem("SOP 14 - VI A");
        sop146b=new JMenuItem("SOP 14 - VI B");
        sop146c=new JMenuItem("SOP 14 - VI C");
        sop146d=new JMenuItem("SOP 14 - VI D");
        sop147a=new JMenuItem("SOP 14 - VII A");
        sop147b=new JMenuItem("SOP 14 - VII B");
        sop147c=new JMenuItem("SOP 14 - VII C");
        sop148=new JMenuItem("SOP 14 - VIII ");

sop14.add(sop141a);
sop14.add(sop142);
sop14.add(sop143);
sop14.add(sop144);
sop14.add(sop145);
sop14.add(sop146b);
sop14.add(sop146a);
sop14.add(sop146c);
sop14.add(sop146d);
sop14.add(sop147a);
sop14.add(sop147b);
sop14.add(sop147c);
sop14.add(sop148);
```

```
                mb.add(file);
                mb.add(ca);
                mb.add(dmd);
                mb.add(csh);
                mb.add(report);
                report.add(acdrep);
                report.add(colln);
                report.add(sop14);

                setJMenuBar(mb);

    desktop.setBorder(BorderFactory.createCompoundBorder(BorderFactory.crea
teMatteBorder(700,0,0,0,new
ImageIcon("pictures/peace.jpg")),BorderFactory.createBevelBorder(BevelBorder.
LOWERED)));
                getContentPane().add(desktop,BorderLayout.CENTER);

                user.addActionListener(this);
                cpwd.addActionListener(this);

                nc.addActionListener(this);
                vc.addActionListener(this);

                vb.addActionListener(this);
    //          mc.addActionListener(this);
                tc.addActionListener(this);
                clc.addActionListener(this);
/*---*/ cdaj.addActionListener(this);
                acdaj.addActionListener(this);
                id.addActionListener(this);
```

```
vd.addActionListener(this);
dw.addActionListener(this);
adj.addActionListener(this);
adv.addActionListener(this);
cln.addActionListener(this);
acdcln.addActionListener(this);
acdrep.addActionListener(this);
colln.addActionListener(this);
sop141a.addActionListener(this);
sop142.addActionListener(this);
sop143.addActionListener(this);
sop144.addActionListener(this);
sop145.addActionListener(this);
sop146a.addActionListener(this);
sop146b.addActionListener(this);
sop146c.addActionListener(this);
        sop146d.addActionListener(this);
        sop147a.addActionListener(this);
sop147b.addActionListener(this);
sop147c.addActionListener(this);
sop148.addActionListener(this);

addWindowListener(new WindowAdapter(){
        public void windowClosing(WindowEvent e)
        {
                System.exit(0);
        }
});
if(category.equals(""))
{
        // button enable
        // button disable
```

```
}

else if(category.equals(""))
{

}
}
public void actionPerformed(ActionEvent e)
{


        if(e.getSource() == nc)
        {
        DatEnt de=new DatEnt("Add / Edit Consumer");
        desktop.add(de);
        de.setVisible(true);
            de.setSize(750,500);
        }

        else if(e.getSource() == user)
        {
        AddUser au = new AddUser("ADD USER");
        desktop.add(au);
        au.setSize(400,250);
        //setLocation(400,400);
        au.setVisible(true);
        }
        else if(e.getSource() == cpwd)
        {
        Chpwd chp= new Chpwd("CHANGE PASSWORD");
        desktop.add(chp);
        chp.setSize(420,270);
        chp.setVisible(true);
        }
```

```
else if(e.getSource() == vc)
{
DatView dv=new DatView("View Consumer Status");
desktop.add(dv);
dv.setVisible(true);
    dv.setSize(750,500);
}

else if(e.getSource() == vb)
{
Billdetails bd = new Billdetails("BILL DETAILS");
desktop.add(bd);
bd.setVisible(true);
bd.setSize(900,550);

}

/*else if(e.getSource() == mc)
{
                MeterChange mch = new MeterChange("Meter
Change");
                desktop.add(mch);
                mch.setSize(550,550);
                mch.setVisible(true);
}*/
```



```
else if(e.getSource() == tc)
{
TariffChange w = new TariffChange("Tariff Change");
desktop.add(w);
```

```
                    w.setVisible(true);
                    w.setSize(600,550);
                    }

                    else if(e.getSource() == clc)
                    {
                    ConnectedLoadChange clch = new
ConnectedLoadChange("ConnectedLoadChange");
                    desktop.add(clch);
                    clch.setSize(550,550);
                    clch.setVisible(true);
                    }
    //---------------------------------------------------------------------------
                    else if(e.getSource() == cdaj)
                    {
                    Cdadj cdad = new Cdadj("C D Adjustment");
                    desktop.add(cdad);
                    cdad.setSize(600,550);
                    cdad.setVisible(true);
                    }
                    else if(e.getSource() == acdaj)
                    {
                    Acd acd = new Acd("Addl: C.D");
                    desktop.add(acd);
                      acd.setSize(400,550);
                     acd.setVisible(true);
                    }
                    else if(e.getSource()==id)
                    {
                    IntrestonDeposit id = new IntrestonDeposit("Intrest on
Deposit");
                    desktop.add(id);
```

```
                id.setSize(550,550);
                id.setVisible(true);
                }

//-------------------------------------------------------------------------

                else if(e.getSource() == vd)
                {

                Demand d = new Demand("DEMAND");
                desktop.add(d);
                d.setSize(880,550);
                d.setVisible(true);
                }
                else if(e.getSource() == dw)
                {

                        DemandWithdrawal wid = new
DemandWithdrawal("Demand Withdrawal");
                        desktop.add(wid);
                        wid.setSize(550,550);
                        wid.setVisible(true);
                }

                else if(e.getSource()==adj)
                        {

           Ccadj cadj = new Ccadj("Current Charge Adjustment");
           desktop.add(cadj);
                cadj.setSize(600,550);
                cadj.setVisible(true);
                }
```

```
else if(e.getSource()==adv)
{
        Ccadv ccad = new Ccadv("ADVANCE PAYMENT");
        desktop.add(ccad);
        ccad.setSize(400,550);
        ccad.setVisible(true);
}

        else if(e.getSource()==cln)
{
        Collection c = new Collection("COLLECTION");
        desktop.add(c);
        c.setSize(400,550);
        c.setVisible(true);
}

else if (e.getSource()==acdcln)
{
System.out.println("Entered ACDC");
AcdCollection acdc = new AcdCollection(" ACD COLLECTION WINDOW");
desktop.add(acdc);
acdc.setSize(450,550);
acdc.setVisible(true);
}
else if (e.getSource()==acdrep)
{
System.out.println("Entered ACDreport");
ACDReport acdr= new ACDReport();
desktop.add(acdr);
acdr.setSize(600,550);
```

Neetu Chawla

Digitally signed by Neetu Chawla
DN: c=IN, o=Personal, title=0850, pseudonym=A8FC4A8D7D2044961528169B7EA63F06, 2.5.4.20=821c3527e6738993fe77eb8fa26117d32c0c49e38f885e3b1996175f3b118cd, postalCode=201002, st=Uttar Pradesh, serialNumber=D19FCC2B2D739E2DBEE341F978B9AF9EFA23997A3F3380626EB7FE44C991BAE, cn=Neetu Chawla
Date: 2023.10.18 12:39:12 +05'30'

.

```
acdr.setVisible(true);
}

else if (e.getSource()==colln)
{
System.out.println("Entered collection report");
SBcollection sb = new SBcollection();

desktop.add(sb);
sb.setSize(600,550);
sb.setVisible(true);
}

        else if (e.getSource()==sop141a)
{
System.out.println("Entered sop141a report");
SOPforteen sop14a= new SOPforteen();

desktop.add(sop14a);
//sop14a.setSize(600,550);
sop14a.setVisible(true);
}


        else if (e.getSource()==sop142)
{
System.out.println("Entered sop142 report");
SOPforteen2a sop142= new SOPforteen2a();

desktop.add(sop142);
//sop14a.setSize(600,550);
sop142.setVisible(true);
```

```
                }

                else if (e.getSource()==sop143)
        {
        System.out.println("Entered sop143 report");
        SOPforteen3 sop143= new SOPforteen3();

        desktop.add(sop143);
        //sop14a.setSize(600,550);
        sop143.setVisible(true);
}

        else if (e.getSource()==sop144)
        {
        System.out.println("Entered sop144 report");
        SOPforteen4 a= new SOPforteen4();

        desktop.add(a);
        //sop14a.setSize(600,550);
        a.setVisible(true);
}

else if (e.getSource()==sop145)
        {
        System.out.println("Entered sop145 report");
        SOPforteen5 a= new SOPforteen5();

        desktop.add(a);
        //sop14a.setSize(600,550);
        a.setVisible(true);
}
```

```
        else if (e.getSource()==sop146a)
        {
        System.out.println("Entered sop146a report");
        SOPforteen6a a= new SOPforteen6a();

        desktop.add(a);
        //sop14a.setSize(600,550);
        a.setVisible(true);
}
 else if (e.getSource()==sop146b)
        {
        System.out.println("Entered sop146b report");
        SOPforteen6b a= new SOPforteen6b();

        desktop.add(a);
        //sop14a.setSize(600,550);
        a.setVisible(true);
}
 else if (e.getSource()==sop146c)
        {
        System.out.println("Entered sop146c report");
        SOPforteen6c a= new SOPforteen6c();

        desktop.add(a);
        //sop14a.setSize(600,550);
        a.setVisible(true);
}

else if (e.getSource()==sop146d)
        {
        System.out.println("Entered sop146d report");
        SOPforteen6d a= new SOPforteen6d();
```

```
        desktop.add(a);
        //sop14a.setSize(600,550);
        a.setVisible(true);
}

else if (e.getSource()==sop147a)
        {
        System.out.println("Entered sop147a report");
        SOPforteen7a a= new SOPforteen7a();

        desktop.add(a);
        //sop14a.setSize(600,550);
        a.setVisible(true);
}
else if (e.getSource()==sop147b)
        {
        System.out.println("Entered sop147b report");
        SOPforteen7b a= new SOPforteen7b();

        desktop.add(a);
        //sop14a.setSize(600,550);
        a.setVisible(true);
}

else if (e.getSource()==sop147c)
        {
        System.out.println("Entered sop147c report");
        SOPforteen7c a= new SOPforteen7c();

        desktop.add(a);
        //sop14a.setSize(600,550);
        a.setVisible(true);
```

```
 }

                else if (e.getSource()==sop148)
                        {
                        System.out.println("Entered sop148 report");
                        SOPforteen8 a= new SOPforteen8();

                        desktop.add(a);
                        //sop14a.setSize(600,550);
                        a.setVisible(true);
                  }
                 }
                public static void main(String arg[])
                {
                        SeniorManagerLogon ss = new SeniorManagerLogon("gf");
                        Toolkit tool = Toolkit.getDefaultToolkit();
                                                Dimension d =
tool.getScreenSize();

    ss.setSize((int)d.getWidth(),(int)d.getHeight());
                                                //ss.setOpaque(true);
                                                //ss.setDragEnabled(false);
                                                ss.setBackground(Color.white);
                                                ss.setVisible(true);
                                                //.setVisible(false);
                }

}
```

```
import java.awt.*;
import javax.swing.*;
import java.awt.event.*;
import java.sql.*;
import javax.swing.border.*;
import java.util.*;

public class Demand extends JInternalFrame implements
ActionListener,FocusListener
 {
    JLabel conno,areacode,prereading,presentreading,mtrcode,unitcon ;

    JTextField
cld,ph,r_f,ta_riff,dty,net_amt,cdint,tot,arrear,dem,sub,dm_id,f_c,e_c,m_r,pre_read
ing,present_reading,ints,unit_con,adv;
    JComboBox
d1,d2,d3,m1,m2,m3,y1,y2,y3,area_code,day_code,mtr_code,con_no;
    JButton qry,bd,mrd,exit,edit,ok;
    String
dw[]={"Date","1","2","3","4","5","6","7","8","9","10","11","12","13","14","15","
16","17","18","19","20","21","22","23","24","25","26","27","28","29","30","31"}
;
    String
mw[]={"Month","JAN","FEB","MAR","APR","MAY","JUN","JUL","AUG","SE
P","OCT","NOV","DEC"};

    String
yw[]={"Year","2005","2006","2007","2008","2009","2010","2011","2012","2013
","2014","2015","2016","2017","2018","2019","2020"};
    String
ac[]={"A01","A02","A03","A04","A05","A06","A07","A08","A09","A10","A11"
,"A12","A13","A14","A15","A16","A17","A18","A19","A20","A21","A22","A23
```

","A24","A25","B01","B02","B03","B04","B05","B06","B07","B08","B09","B10
","B11","B12","B13","B14","B15","B16","B17","B18","B19","B20","B21","B22
","B23","B24","B25"};
String mc[]={"1","2","3","4","5","6","7","8"};
Vector v2=new Vector();

public Demand(String title)
{

super("DEMAND GENERATION WINDOW");
setLayout(null);
conno=new JLabel("Consumer Number");

//con_no=new JComboBox();

areacode=new JLabel("Area code");
area_code=new JComboBox(ac);
mtrcode=new JLabel("Meter Reader Code");
mtr_code=new JComboBox(mc);
area_code.addActionListener(this);
mtr_code.addActionListener(this);

con_no=new JComboBox(v2);
JLabel Tariff=new JLabel("Tariff");
ta_riff=new JTextField(10);
JLabel phase=new JLabel("Phase");
ph=new JTextField(10);

JLabel clds=new JLabel("CLD");
cld=new JTextField(10);
con_no.setPreferredSize(new Dimension(100,20));

```
//System.out.println("Elements in V2 " + v2);
prereading=new JLabel("Previous Reading");
pre_reading=new JTextField(10); //read from the database
presentreading=new JLabel("Present Reading");
present_reading=new JTextField(10);
unitcon=new JLabel("Units consumed");
unit_con=new JTextField(10);
unit_con.addFocusListener(this);

JLabel dmid=new JLabel("Demand ID");
dmid.setForeground(new Color(200,0,20));
dm_id=new JTextField(10);

qry=new JButton("Querry");

FlowLayout layout=new FlowLayout();
bd=new JButton("Show Bill details");

mrd=new JButton("Meter Reading details");

exit=new JButton("exit");
ok=new JButton("Save");
//cancel=new JButton("Cancel");
edit=new JButton("Edit");

JPanel p1,p2,p3,p4,p5,p6,p7,p8,p9,p10,p11,p12,p13;


p1=new JPanel();
p1.setLayout(new GridLayout(11,2,0,5));

p1.add(areacode);
```

```
p1.add(area_code);
p1.add(mtrcode);
p1.add(mtr_code);

p1.add(conno);
p1.add(con_no);

p1.add(Tariff);
p1.add(ta_riff);

p1.add(phase);
p1.add(ph);

p1.add(clds);
p1.add(cld);

p1.add(prereading);
p1.add(pre_reading);
p1.add(presentreading);
p1.add(present_reading);
p1.add(unitcon);
p1.add(unit_con);

p1.add(dmid);
p1.add(dm_id);
p1.setBounds(10,100,250,260);
add(p1);

p2=new JPanel();
p2.setLayout(new FlowLayout());
p2.add(qry);
p2.setBounds(680,350,90,40);
```

```
add(p2);

JLabel c=new JLabel("GENERATE / EDIT DEMAND");
c.setFont(new Font("Times New Roman",Font.BOLD,20));
c.setForeground(new Color(50,0,200));

      p6=new JPanel();
                p6.setLayout(new FlowLayout());
         p6.setBounds(280,30,350,50);
         p6.add(c);
         add(p6);
         //panel1.add(p65);


p5=new JPanel();
p5.setLayout(new GridLayout(1,3,10,10));
p5.add(bd);
p5.add(mrd);
p5.add(exit);
p5.add(ok);
p5.add(edit);

p5.setBounds(10,470,850,30);
add(p5);

JLabel fc=new JLabel("Fixed Charge");
f_c=new JTextField(10);
JLabel ec=new JLabel("Energy Charge");
e_c=new JTextField(10);

JLabel duty=new JLabel("DUTY TO GOVT:");
dty=new JTextField(10);
```

```
JLabel mr=new JLabel("Meter Rent");
m_r=new JTextField(10);

JLabel rf=new JLabel("Re con:  fee");
r_f=new JTextField(10);

JLabel demd=new JLabel("Demand for  ..... ");
dem=new JTextField(10);

JLabel subsi=new JLabel("Subsidy");
sub=new JTextField(10);
JLabel prebal=new JLabel("Previous arrears");
arrear=new JTextField(10);


JLabel ad=new JLabel("Advance paid");
adv=new JTextField(10);



JLabel total=new JLabel("Total");
tot=new JTextField(10);
JLabel intcd=new JLabel("Intrest on CD");
cdint=new JTextField(10);
JLabel netamt=new JLabel("NET AMOUNT PAYABLE");
net_amt=new JTextField(10);

p7=new JPanel();
p7.setLayout(new GridLayout(12,2,0,10));
p7.add(fc);
p7.add(f_c);
f_c.setEditable(false);
```

```
p7.add(ec);
p7.add(e_c);
                    e_c.setEditable(false);
p7.add(duty);
p7.add(dty);
dty.setEditable(false);
p7.add(mr);
p7.add(m_r);
m_r.setEditable(false);

p7.add(rf);
p7.add(r_f);
p7.add(demd);
p7.add(dem);
p7.add(subsi);
p7.add(sub);

p7.add(ad);
p7.add(adv);

p7.add(prebal);
p7.add(arrear);

p7.add(total);
p7.add(tot);
p7.add(intcd);
p7.add(cdint);
p7.add(netamt);
p7.add(net_amt);
p7.setBounds(352,100,270,350);
add(p7);
```

```
JLabel bdate=new JLabel("Bill Date");

d1=new JComboBox(dw);
m1=new JComboBox(mw);
y1=new JComboBox(yw);
JLabel ddate=new JLabel("Due Date");
d2=new JComboBox(dw);
m2=new JComboBox(mw);
y2=new JComboBox(yw);
JLabel disdate=new JLabel("Disconnnection date");
d3=new JComboBox(dw);
m3=new JComboBox(mw);
y3=new JComboBox(yw);

p8=new JPanel();
p8.setLayout(new GridLayout(1,1,10,10));
p8.add(bdate);
p8.setBounds(650,100,120,20);
add(p8);

p9=new JPanel();
p9.setLayout(new GridLayout(1,1,0,10));
p9.add(d1);
p9.add(m1);
 p9.add(y1);
p9.setBounds(650,120,180,20);
add(p9);


p10=new JPanel();
p10.setLayout(new GridLayout(1,1,10,10));
p10.add(ddate);
p10.setBounds(650,140,180,20);
add(p10);
```

```
p11=new JPanel();
p11.setLayout(new GridLayout(1,1,0,10));
p11.add(d2);
p11.add(m2);
p11.add(y2);
p11.setBounds(650,160,180,20);
add(p11);

p12=new JPanel();
p12.setLayout(new GridLayout(1,1,10,10));
p12.add(disdate);
p12.setBounds(650,180,180,20);
add(p12);

p13=new JPanel();
p13.setLayout(new GridLayout(1,1,0,10));
p13.add(d3);
p13.add(m3);
p13.add(y3);
p13.setBounds(650,200,180,20);
add(p13);


        setLocation(80,70);

exit.addActionListener(this);
con_no.addActionListener(this);
ok.addActionListener(this);
f_c.addFocusListener(this);
e_c.addFocusListener(this);
dty.addFocusListener(this);
m_r.addFocusListener(this);
```

```
r_f.addFocusListener(this);

dem.addFocusListener(this);
sub.addFocusListener(this);
tot.addFocusListener(this);
net_amt.addFocusListener(this);
}
public void focusGained(FocusEvent e)
{
	if(e.getSource()==unit_con)
	{
		long
pre=Integer.parseInt(present_reading.getText().trim());
		long
prev=Integer.parseInt(pre_reading.getText().trim());
		long v=pre-prev;
		unit_con.setText(""+v);

	}

	else if(e.getSource()==f_c)
	{
		System.out.println("Lost Focused from Tarif");
		if((ta_riff.getText()).trim().equals("IA"))
		{
			long f=0;
			f_c.setText(""+f);
			System.out.println(f_c.getText());

		}
		if((ta_riff.getText()).trim().equals("II"))
		{
			long f=1990;
			f_c.setText(""+f);
```

```
System.out.println(f_c.getText());

        }


        if((ta_riff.getText()).trim().equals("III"))
        {
                long c=Integer.parseInt(cld.getText().trim());
                long f=c*1350/100000;
                f_c.setText(""+f);
                System.out.println(f_c.getText());

        }

                if((ta_riff.getText()).trim().equals("V"))
        {
                long c=Integer.parseInt(cld.getText().trim());
                long f=c*600/100000;
                f_c.setText(""+f);
                System.out.println(f_c.getText());

        }


                if((ta_riff.getText()).trim().equals("VIA"))
        {
                long c=Integer.parseInt(cld.getText().trim());
                long f=c*4000/100000;
                f_c.setText(""+f);
                System.out.println(f_c.getText());

        }
```

```
        if((ta_riff.getText()).trim().equals("VIB"))
{
        long c=Integer.parseInt(cld.getText().trim());
        long f=c*5500/100000;
        f_c.setText(""+f);
        System.out.println(f_c.getText());

}


        if((ta_riff.getText()).trim().equals("VIC"))
{
        long c=Integer.parseInt(cld.getText().trim());
        long f=c*17000/100000;
        f_c.setText(""+f);
        System.out.println(f_c.getText());

}


        if((ta_riff.getText()).trim().equals("VID"))
{
        //long c=Integer.parseInt(cld.getText().trim());
        long f=0;
        f_c.setText(""+f);
        System.out.println(f_c.getText());
```



```
}

    if((ta_riff.getText()).trim().equals("VIIA")&&(ph.getText()).trim().equals("Si
ngle"))
```

```
{

        long c=Integer.parseInt(cld.getText().trim());
                if ((c>0)&&(c<=1000))
                {
        long f=1*50000/1000;
        f_c.setText(""+f);
        System.out.println(f_c.getText());
                }
        if ((c>1001)&&(c<=2000))
                {
        long f=2*50000/1000;
        f_c.setText(""+f);
        System.out.println(f_c.getText());
                }
        if ((c>2001)&&(c<=3000))
                {
        long f=3*100000/1000;
        f_c.setText(""+f);
        System.out.println(f_c.getText());
                }
        if ((c>3001)&&(c<=4000))
                {
        long f=4*100000/1000;
        f_c.setText(""+f);
        System.out.println(f_c.getText());
                }
        if ((c>4001)&&(c<=5000))
                {
        long f=5*100000/1000;
        f_c.setText(""+f);
        System.out.println(f_c.getText());
                }
        if ((c>5001)&&(c<=6000))
```

```
                {

                long f=6*100000/1000;
                f_c.setText(""+f);
                System.out.println(f_c.getText());
                }
                if ((c>6001)&&(c<=7000))
                {
                long f=7*100000/1000;
                f_c.setText(""+f);
                System.out.println(f_c.getText());
                }
        }

    if((ta_riff.getText()).trim().equals("VIIA")&&(ph.getText()).trim().equals("Th
ree"))
        {
                long c=Integer.parseInt(cld.getText().trim());

                if ((c>0)&&(c<=1000))
                {
                long f=1*100000/1000;
                f_c.setText(""+f);
                System.out.println(f_c.getText());
                }
                if ((c>1001)&&(c<=2000))
                {
                long f=2*100000/1000;
                f_c.setText(""+f);
                System.out.println(f_c.getText());
                }
                if ((c>2001)&&(c<=3000))
                {
                long f=3*100000/1000;
```

```
                    f_c.setText(""+f);
                    System.out.println(f_c.getText());
                        }
                    if ((c>3001)&&(c<=4000))
                        {
                    long f=4*100000/1000;
                    f_c.setText(""+f);
                    System.out.println(f_c.getText());
                        }
                    if ((c>4001)&&(c<=5000))
                        {
                    long f=5*100000/1000;
                    f_c.setText(""+f);
                    System.out.println(f_c.getText());
                        }
                    if ((c>5001)&&(c<=6000))
                        {
                    long f=6*100000/1000;
                    f_c.setText(""+f);
                    System.out.println(f_c.getText());
                        }

                    }

    if((ta_riff.getText()).trim().equals("VIIB"))//&&(ph.getText()).trim().equals("
Single"))
                        {
                            long c=Integer.parseInt(cld.getText().trim());
                            long f=c*3000/100000;
                            f_c.setText(""+f);
                            System.out.println(f_c.getText());
```

```
}


    if((ta_riff.getText()).trim().equals("VIIC"))//&&(ph.getText()).trim().equals("
Single"))
                                {
                                        int c=Integer.parseInt(cld.getText().trim());
                                        int f=c*8000/1000000;
                                        f_c.setText(""+f);
                                        System.out.println(f_c.getText());

                                }
                                 }

                        //=============================================


                                        else if(e.getSource()==m_r)
                                        {
                                System.out.println("Lost Focused from Duty");
                                if((ph.getText()).trim().equals("Single"))
                                {
                                        long f=20;
                                        m_r.setText(""+f);
                                        System.out.println(m_r.getText());

                                }

                                if((ph.getText()).trim().equals("Three"))
                                {
                                        long f=60;
                                        m_r.setText(""+f);
```

```
System.out.println(m_r.getText());

                    }


                     }


                    else if(e.getSource()==dem)

                            {
                    System.out.println("Lost Focused from MRent");
                    long fc = Long.parseLong((f_c.getText()).trim());
                    long ec = Long.parseLong((e_c.getText()).trim());
                    long dy = Long.parseLong((dty.getText()).trim());
                    long r = Long.parseLong((m_r.getText()).trim());
                    long rf=Long.parseLong((r_f.getText()).trim());
                    //long d=fc+ec+dy+r;
                    long dm=fc+ec+dy+r+rf;
                    dem.setText(""+dm);
                            }
                            else if(e.getSource()==sub)

                            {
                    System.out.println("Lost Focused from Demand");
                    //long d = Long.parseLong((dem.getText()).trim());
                    long fc = Long.parseLong((f_c.getText()).trim());
                    long ec = Long.parseLong((e_c.getText()).trim());
                    long dy = Long.parseLong((dty.getText()).trim());
                    long r = Long.parseLong((m_r.getText()).trim());
                    //long rf=Long.parseLong((r_f.getText()).trim());
                    //long d=fc+ec+dy+r;
```

```
long s=(fc+ec+dy+r)/10;
sub.setText(""+s);
        }


else if(e.getSource()==tot)

        {
System.out.println("Lost Focused from TOT");
//long d = Long.parseLong((dem.getText()).trim());
long fc = Long.parseLong((f_c.getText()).trim());
long ec = Long.parseLong((e_c.getText()).trim());
long dy = Long.parseLong((dty.getText()).trim());
long r = Long.parseLong((m_r.getText()).trim());
long rf = Long.parseLong((r_f.getText()).trim());
long su=Long.parseLong((sub.getText()).trim());
long ad=Long.parseLong((adv.getText()).trim());
long arr=Long.parseLong((arrear.getText()).trim());
/*long cdi=Long.parseLong((cdint.getText()).trim());
//long na=Long.parseLong((net_amt.getText()).trim());
//long d=fc+ec+dy+r;*/

long t=fc+ec+dy+r+rf-su-ad+arr;
tot.setText(""+t);
        }

            else if(e.getSource()==net_amt)

        {
System.out.println("Lost Focused from TOT");
```

```
                //long d = Long.parseLong((dem.getText()).trim());
                long fc = Long.parseLong((f_c.getText()).trim());
                long ec = Long.parseLong((e_c.getText()).trim());
                long dy = Long.parseLong((dty.getText()).trim());
                long r = Long.parseLong((m_r.getText()).trim());
                long rf = Long.parseLong((r_f.getText()).trim());
                long su=Long.parseLong((sub.getText()).trim());
                long ad=Long.parseLong((adv.getText()).trim());
                long arr=Long.parseLong((arrear.getText()).trim());
                long cdi=Long.parseLong((cdint.getText()).trim());
                //long na=Long.parseLong((net_amt.getText()).trim());
                //long d=fc+ec+dy+r;

                long t=fc+ec+dy+r+rf-su-ad+arr-cdi;
                net_amt.setText(""+t);
                        }


//=================================================

                else if(e.getSource()==e_c)

                {
                long uc = Long.parseLong((unit_con.getText()).trim());
                        if ((uc>0)&&(uc<=40))
                        {
                        long c=uc*115/100;
                        e_c.setText(""+c);
                        }
                        else if ((uc>=41)&&(uc<=80))
                        {
```

```
long c=uc*190/100;
e_c.setText(""+c);
}
else if ((uc>=81)&&(uc<=120))
{
long c=uc*240/100;
e_c.setText(""+c);
}
else if ((uc>=121)&&(uc<=150))
{
long c=uc*300/100;
e_c.setText(""+c);
}
else if ((uc>=151)&&(uc<=200))
{
long c=uc*365/100;
e_c.setText(""+c);
}
else if ((uc>=201)&&(uc<=300))
{
long c=uc*430/100;
e_c.setText(""+c);
}
else if ((uc>=301)&&(uc<=500))
{
long c=uc*530/100;
e_c.setText(""+c);
}
else if (uc>=501)
{
long c=uc*545/100;
e_c.setText(""+c);
```

```
    }

                    }


            else if(e.getSource()==dty)
                        {
                        System.out.println("Lost Focused from duty");
                        long d = Long.parseLong((e_c.getText()).trim());

                                long dy=d*175/10000;
                                dty.setText(""+dy);
                                System.out.println(f_c.getText());

                        }

                    }
//-------------------------------------------------}


            /* else if (e.getSource()==m_r)
                        {
                                System.out.println("lost focus form mtr_rent");
                                if(ph="Single")
                                {
                                        long r=20;
                                        m_r.setText(""+r);
                                }


                        }
```

```
		}*/

		//}
	public void focusLost(FocusEvent e)
	{
		/*if(e.getSource()==ta_riff)
		{
			System.out.println("Lost Focused from Tarif");
			if(ta_riff.getText().equals("IA"))
			{
			//long f=Integer.parseInt(f_c.getText().trim());
			long f=0;
			f_c.setText(""+f);

			System.out.println(f_c.getText());
			}
		}*/
	}
  //_____
_____
	public void actionPerformed(ActionEvent e)
	{
	if(e.getSource()==exit)
	{
		this.dispose();
	}
	if((e.getSource()==area_code)||(e.getSource()==mtr_code))
	{
		System.out.println("Selected area code");

		 try{
		QueryData qd = new QueryData();
```

```
                v2.clear();

    v2.addAll(qd.getCons((String)area_code.getSelectedItem(),(String)mtr_code.g
etSelectedItem()));

                System.out.println("Elements in V2  " + v2);



              }catch(Exception ex){System.out.println("Error in DataEnt " + ex);}
            }

    if((e.getSource()==area_code)||(e.getSource()==mtr_code)||(e.getSource()==c
on_no))
            {
                System.out.println("Selected con_no,area_code,mtr_code");

                 try{
                QueryData qd = new QueryData();

                                    String
id=(String)con_no.getSelectedItem();//||(String)mtr_code.getSelectedItem()||(Strin
g)con_no.getSelectedItem());

                                    String cl=qd.getInitialReading(id);
                                    String c2=qd.getPhase(id);
                                    String c3=qd.getCl(id);
                                    String cl2=qd.getTariff(id);
                                    pre_reading.setText(cl);
                                ph.setText(c2);

                                    cld.setText(c3);
```

```
                    ta_riff.setText(cl2);

                }catch(Exception ex){System.out.println("Error in DataEnt " + ex);}

            }
            else if(e.getSource()==ok)
                    {
                    try{
                        QueryData qd = new QueryData();
                        PreparedStatement pst2 =
qd.getConnect().prepareStatement("insert into demand
values(?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?,?)");

    pst2.setString(1,(String)area_code.getSelectedItem());

    pst2.setString(2,(String)mtr_code.getSelectedItem());

    pst2.setString(3,(String)con_no.getSelectedItem());
                        pst2.setString(4,(String)pre_reading.getText());

    //pst2.setString(5,(String)present_reading.getText());
                        //pst2.setString(6,(String)unit_con.getText());



    //pst2.setInt(4,Integer.parseInt(pre_reading.getText()));

    pst2.setInt(5,Integer.parseInt(present_reading.getText()));

    pst2.setInt(6,Integer.parseInt(unit_con.getText()));
                        pst2.setString(7,(String)dm_id.getText());
                        //pst2.setInt(6,Integer.parseInt(f_c.getText()));
```

```
pst2.setString(8,(String)f_c.getText());
pst2.setString(9,(String)e_c.getText());
pst2.setString(10,(String)dty.getText());
pst2.setString(11,(String)m_r.getText());
pst2.setString(12,(String)r_f.getText());
pst2.setString(13,(String)dem.getText());
pst2.setString(14,(String)sub.getText());
pst2.setString(15,(String)adv.getText());
pst2.setString(16,(String)arrear.getText());
pst2.setString(17,(String)tot.getText());
pst2.setString(18,(String)cdint.getText());
pst2.setString(19,(String)net_amt.getText());

        String ds,ys,ms,dates;
        ds=(String)d1.getSelectedItem();
        ms=(String)m1.getSelectedItem();
        ys=(String)y1.getSelectedItem();
        dates=ds+"/"+ms+"/"+ys;
        pst2.setString(20,dates);

        String da,ya,ma,dates1;
        da=(String)d2.getSelectedItem();
        ma=(String)m2.getSelectedItem();
        ya=(String)y2.getSelectedItem();
        dates1=da+"/"+ma+"/"+ya;
        pst2.setString(21,dates1);

        String db,yb,mb,dates2;
        db=(String)d3.getSelectedItem();
        mb=(String)m3.getSelectedItem();
        yb=(String)y3.getSelectedItem();
        dates2=db+"/"+mb+"/"+yb;
```

```
                                    pst2.setString(22,dates2);



                                    int i=pst2.executeUpdate();

                                    if(i>0)
                                    {

    JOptionPane.showInternalMessageDialog(this,"Demand      Generated","NEW
DEMAND ",1);
                                    }


                                    }catch(Exception ex){System.out.println("Inside
Save   :" +ex);}


                              }

          }


          public static void main(String arg[])
          {
          /*        Demand d = new Demand("DEMAND");
                    d.setSize(1000,550);
                    d.setVisible(true);*/
     }

}
```

CONCLUSION

Main achievements of this project:-

Administrative staff can view all the details of consumer bill details and can search for any result. Different types of reports can be obtained from the report menu. Different types of reports can be obtained from the report menu. All manual and paper works in the billing branch can be avoided by implementing this software. Since this is built in java, it is platform independent and it can make workable by simply installing JRE.

ABOUT THIS PROJECT:-

1. It is simple and user friendly
2. Platform independent
3. vide scope for future expansion
4. manual as well as paper works can be fully eliminated in the billing branch
5. accuracy and reliability are surely increased
6. it make sure that unauthorized personal cannot execute this program

System security refers to the technical innovations and procedures applied to hardware and operating system. To protect against deliberate or accidental damage from a defined threat. In contrast, data security is the protection of data, some loss, disclosure, modification and destruction. The system security problem can be provided into four related issues.

1. Security
2. integrity
3. privacy
4. access procedures

Using the power tools of JAVA and SQL server “LT BILLING SYSTYEM” as developed with a high degree of accuracy and user friendliness. Though the system is developed for domestic and commercial tariffs, a full provision is given for a full fledged billing system used at any billing centre of KSEB. This software provides advancement in KSEBoards revenue collection and

accounting of the sale. In future all provided options can be included and activated to increase the functionality of the LT BILLING SYSTEM.

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