INTRODUCTION

The Energy Conservation Methods is daily analysis of consumption of energy. It helps the user to keep record of the data of energy consumption of the equipment and to calculate the bill of the energy on daily basis. To save the energy the suggestions are given to the customer.

This software is developed to check daily consumption of energy by the user. Today's software generate bill monthly according to the units. The monthly billing system cannot give the user the data of the daily energy consumed by the equipment's that they are using. The software is accurate to calculate the total energy consumption by the user. The suggestions are given to the user to help in the energy saving. The daily basis record can be shown to the user by this the user can analyze the data and repair the equipment or replace according to the suggestion.

This helps the user to save the cost that they require on daily basis. the user can see the suggestions about the equipment's. Which help to use energy efficient appliance at the home.

SYSTEM ANALYSIS

"The Process of studying a procedure or business in order to identify its goals and purposes and create systems and procedures that will achieve them in an efficient way".

The software analysis phase is the study of the system to identify its goals and purposes and create systems that will achieve them in efficient way. The System that is proposed to develop is the system to achieve the energy consumption and the method is used for that purpose is to suggest the user the user energy efficient appliances. This equipment's are using the energy according to the software. This reduces the consumption of energy and show user the user-friendly environment.

The purpose of the system is to develop a software that take the input as the quantity of the equipment that the customer is using and also to add the energy consumed by the equipment. Then the software calculates the actual energy consumed by the equipment. And show the user how much energy they are wasting and also a suggestion to use another equipment which will consume less amount of energy. The suggested equipment consumes less amount of energy.

The goals of the system to show customer they are wasting a lot of energy. They can save their money and also save energy. This software is mainly developed for customer, to show how much amount of energy they have to consume daily and how much of energy they are using.

FEASIBILITY ANALYSIS

A feasibility study is an analysis that takes all of a project's relevant factors into account—including economic, technical, legal, and scheduling considerations to ascertain the likelihood of completing the project successfully. Project managers use feasibility studies to discern the pros and cons of undertaking a project before they invest a lot of time and money into it.

The feasibility study the software is checked that it can actually be implemented or not. The cost estimation for the project to develop and the technical issues they have to face during the software completion. The legal issues of the software are checked and the schedule for the project is calculated in this phase.

The Energy conservation Methods software is to develop in the java and for this the Apache NetBeans IDE have to use. And the database for this is the MYSQL. This software doesn't need any cost they are free to use by the user. Hence it will the only cost for the labor work.

To develop the software the need of the man power is needed and the software can be developed in the java that needs technical persons who are best in java development. The development of this software also needs some data like the energy efficient equipment and the minimum energy they are consuming. This will help us to develop the software the data need to maintain the record of the of that data and give suggestion to the user of that data.

The legal considerations are like the software is already developed and it is patented and it can't be taken by other. It also needs to see the terms and conditions for that. The software is developed according to the legal authorities.

The scheduling consideration the schedule for the software development is scheduled. The energy conservation methods use the waterfall model which is used for small scale project and this will need the approximately 10 to 15 days to complete the project. This will help us to develop the software by using the standard format.

SYSTEM REQUIREMENT

HARDWARE REQUIREMENTS:

- **Processor:** Intel dual core or above
- **Processor Speed:**1.0GHZ or above
- **RAM:** 1 GB RAM or above
- **Hard Disk:** 20 GB hard disk or above

SOFTWARE REQUIREMENTS:

- **Language:** Java 8.0.221
- **Java IDE :** Apache Tomcat 11.0
- **Database:** MYSQL 8.0.17, MySQL connector
- **Operating System** : windows XP/Vista/7/8/8.1/10

DATA FLOW DIAGRAM

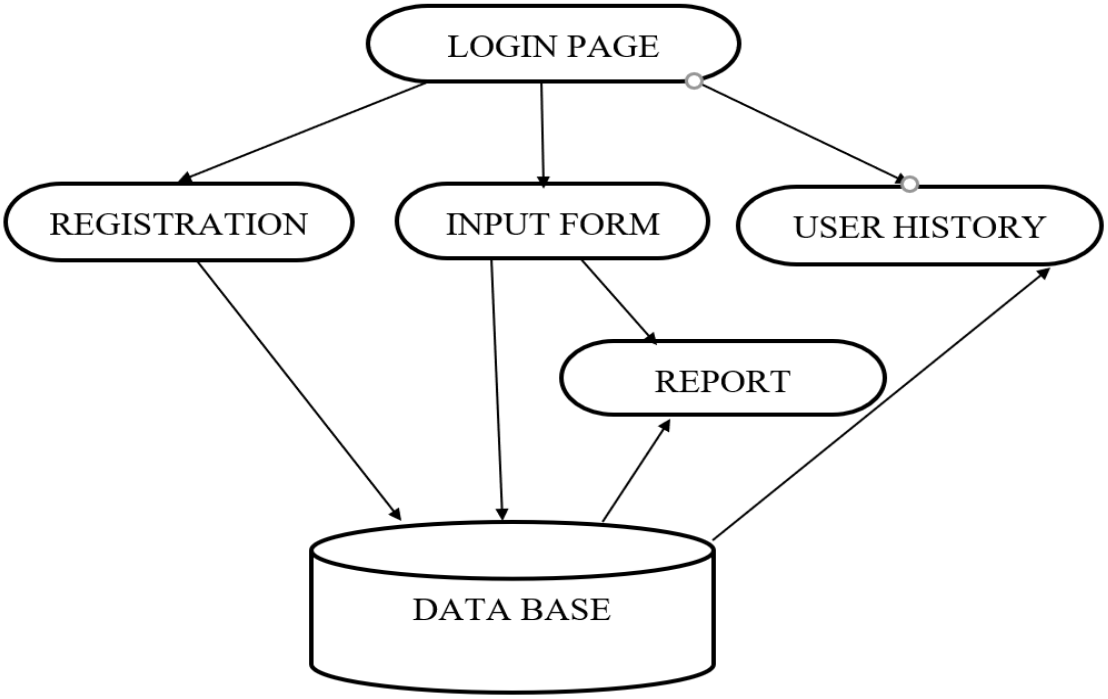


Fig. DFD for Energy Conservation Method

SOFTWARE INTERFACE

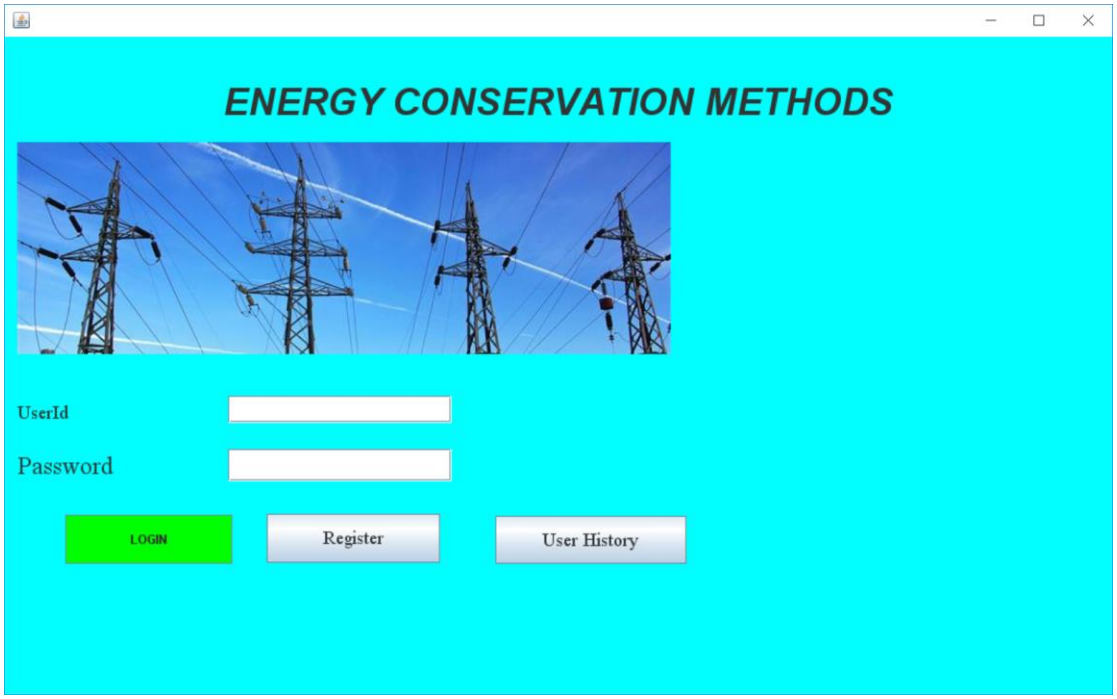
An interface is a shared boundary across which two or more separate components of a computer system exchange information. The exchange can be between software, computer hardware, peripheral devices, humans, and combinations of these.

In the Energy Conservation Method, the software development is done in java. Its interface is user friendly and the software is interfaces with another JFrames through the Constructors. The software interfaces with the MYSQL database by the MYSQL connector. For that the connector is attached with the java code from the library and it also have to connect to the database by the connection string. The connection is established by the java Connection class.

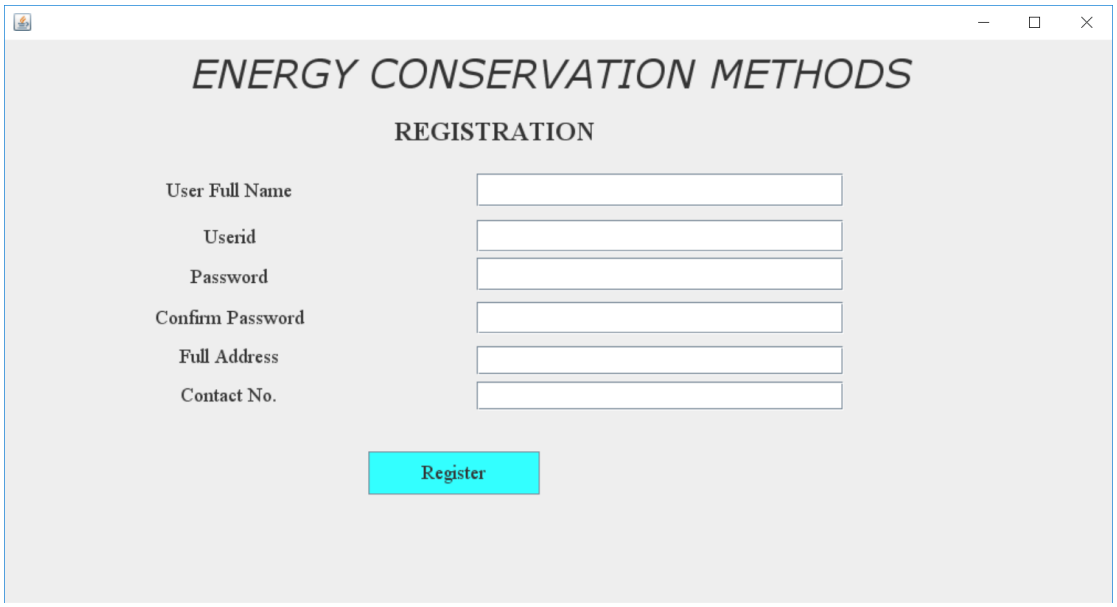
The Software is user friendly. Its interface is very attractive. The software show reports of the data which also makes it very attractive and easy to analyze the data. The data can be easily analyzed and easy to view. The software makes easy to access the other components. And not much complications that makes it easy to use.

SYSTEM DESIGN

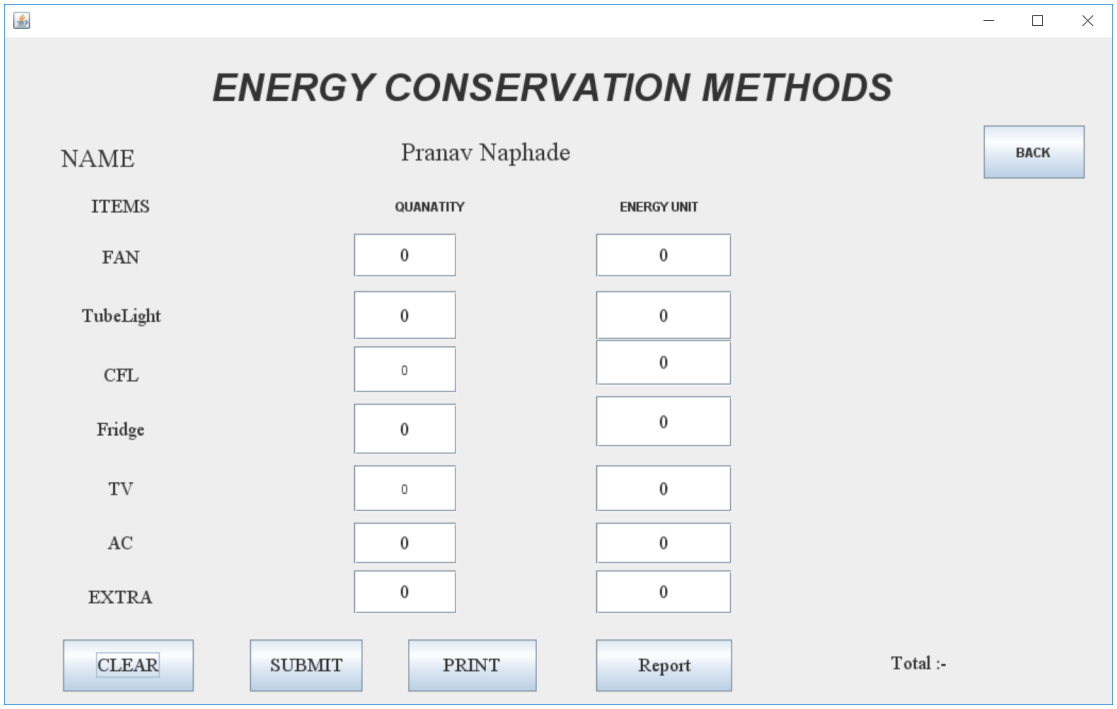
1) HOME PAGE:-



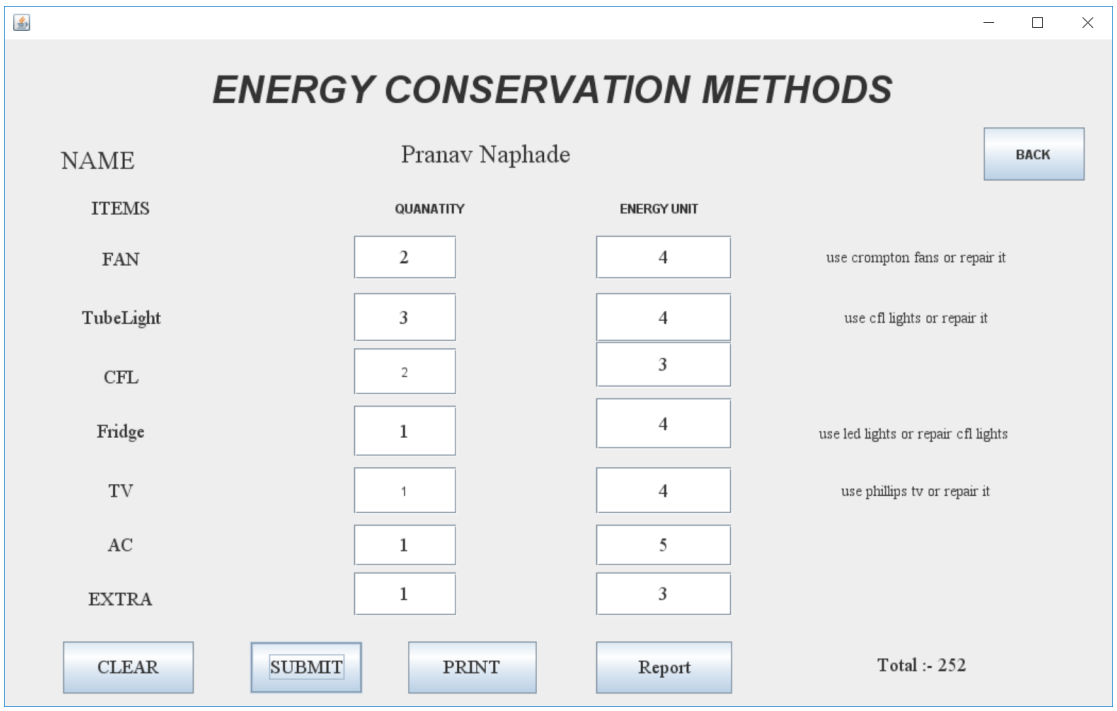
2) Registration Page



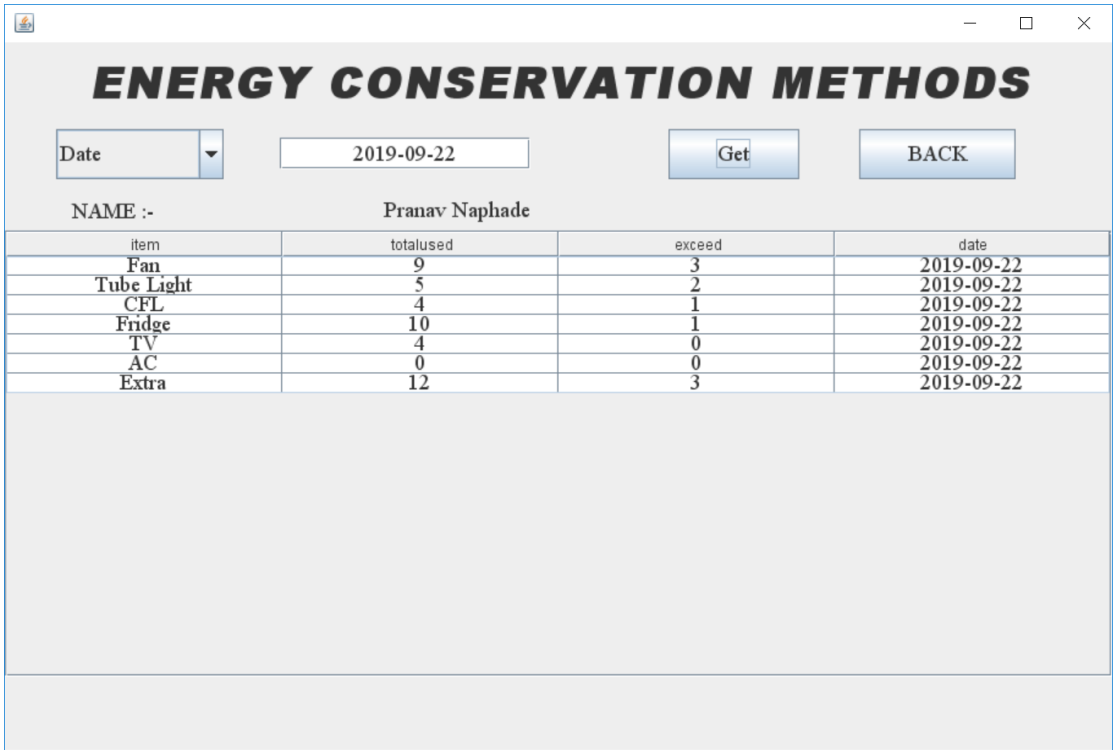
3) Input Form



4) Input Form After Submitting

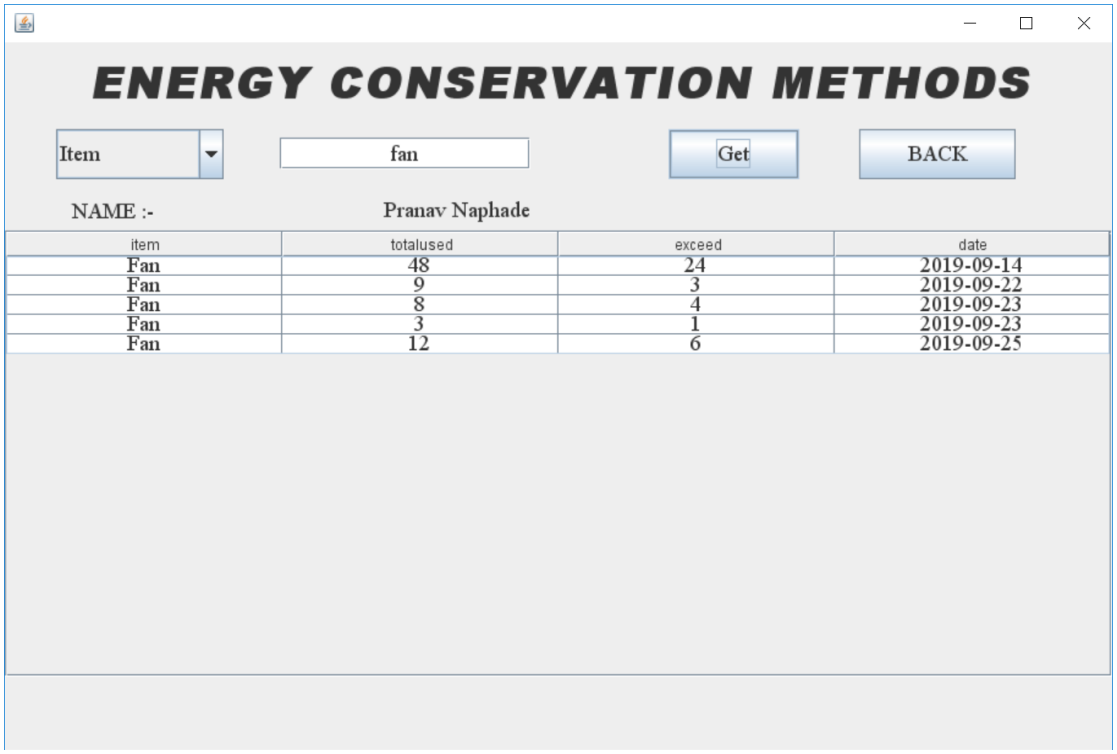


5) Report by Filtering Date



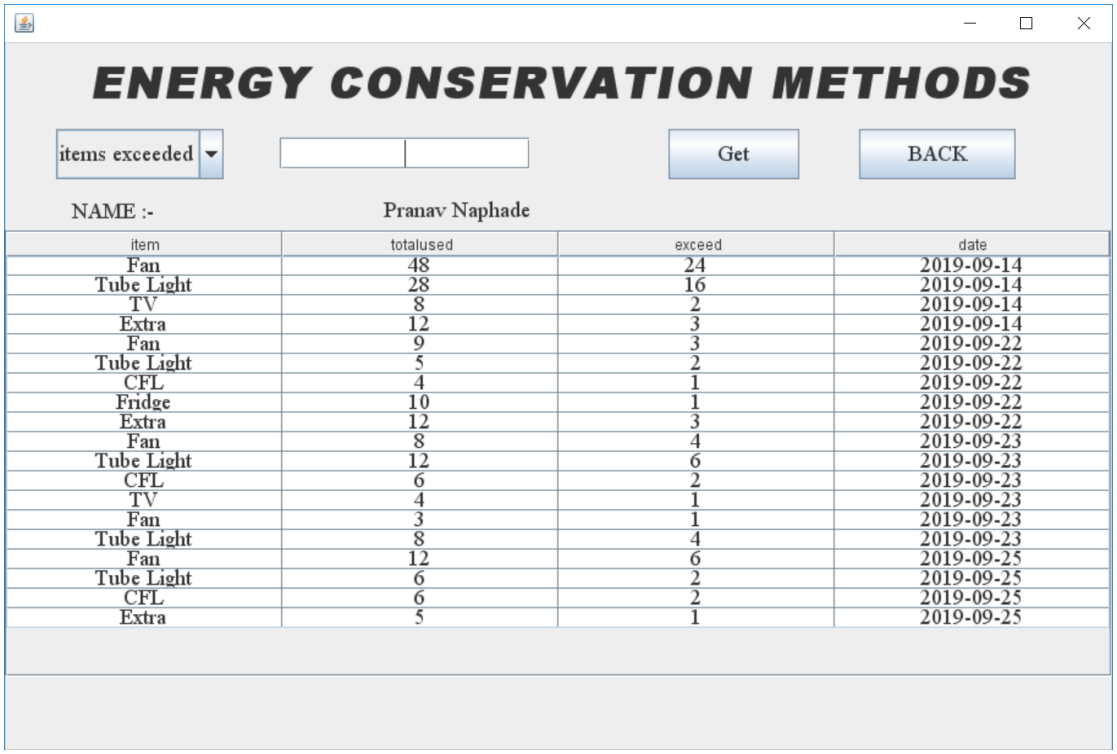
item	totalused	exceed	date
Fan	9	3	2019-09-22
Tube Light	5	2	2019-09-22
CFL	4	1	2019-09-22
Fridge	10	1	2019-09-22
TV	4	0	2019-09-22
AC	0	0	2019-09-22
Extra	12	3	2019-09-22

6) Report by Filtering Item



item	totalused	exceed	date
Fan	48	24	2019-09-14
Fan	9	3	2019-09-22
Fan	8	4	2019-09-23
Fan	3	1	2019-09-23
Fan	12	6	2019-09-25

7) Report by Filtering Date that exceeded



item	totalused	exceed	date
Fan	48	24	2019-09-14
Tube Light	28	16	2019-09-14
TV	8	2	2019-09-14
Extra	12	3	2019-09-14
Fan	9	3	2019-09-22
Tube Light	5	2	2019-09-22
CFL	4	1	2019-09-22
Fridge	10	1	2019-09-22
Extra	12	3	2019-09-22
Fan	8	4	2019-09-23
Tube Light	12	6	2019-09-23
CFL	6	2	2019-09-23
TV	4	1	2019-09-23
Fan	3	1	2019-09-23
Tube Light	8	4	2019-09-23
Fan	12	6	2019-09-25
Tube Light	6	2	2019-09-25
CFL	6	2	2019-09-25
Extra	5	1	2019-09-25

Table Used

1) Login table

Field	Type	Key
Userid	Varchar(10)	Primary key
Name	Varchar(20)	
Password	Varchar(10)	
Address	Varchar(30)	
Mobile no.	Varchar(10)	

2) Items

Field	Type	Key
Itemid	Int(11)	Primary key
Item	Varchar(10)	
Min	Int(11)	
Max	Int(11)	
Suggestion	Varchar(50)	

3) Data

Field	Type	Key
Userid	Varchar(10)	References from Login table Userid
Itemid	Int(11)	References from Items Table itemid
Totalused	Int(11)	
Exceed	Int(11)	
Date	Date	

SYSTEM IMPLEMENTATION

Login Form:
The operation perform by login form is to enter User Name & Password & click on login button and the customer page will be generated. It differentiates the users by the userid from the different users.

Registration form:

The operation performed by registration form is to enter the information about the customer & click on register button and the login credentials are inserted to the database in login table. This information to be filled by the user for login.

Input Form:

The operation performed by the Input Form is to store the data of quantity of the equipment's the customer is using and the energy unit that is used by each equipment which is added by the customer. And the output generated on the page by the software as the total units taken by the equipment daily and the suggestion if the total units are exceeded from the maximum units per day.

Report Generation :

this form uses different filters to show the data of the customer to the customer by applying filters on it. This will show the data of a specific date and also by the specific item they are using and by the items that contain the exceeded units.

SOFTWARE TESTING

The purpose of the study in reported in this paper was to identify why instructors adopt synchronous virtual classrooms and how they use them after their adoption. In describing their reasons for adopting the technology, respondents most frequently cited institutional resource availability, increasing social presence, enhancing student learning, and the availability of technology. Students on various campuses of tertiary institutions are facing certain level of challenges that affect their participation in classes and learning generally. Some of these students may be physically challenged, and hospitalized due to illness or may be involved in one type of job or the other to be able to meet up with their financial needs. Web-based learning therefore offers interesting opportunities and democratic advantage to these categories of students. Certain studies in the past also addresses provision of assistive learning technology for the physical challenged. For instance, a paper in reported a voiced-based learning system for the virtually impaired learners. More so, the paper in presents a central learning system, whose goal was to facilitate teaching and learning for both teachers of the deaf and deaf impaired persons in Jordan.

CONCLUSION

It was a wonderful and learning experience for me while working on Energy Conservation Method Project. This is daily Bill generation electricity on the basis of no. of equipment and the quantity of the unit taken by each equipment. The daily energy taken by the equipment is used to show the user that how much amount of energy the user can save and also it shows the user to choose the right equipment that consume less amount of energy. This will help the user too save the extra cost they are paying.

This project took me through the various phase of project development and gave real insight into the world of software engineering. The joy of working and the thrill involved while tackling the various problem and challenges gave me a feel of developer's industry.

This project developed according to the Water Fall model of Software Development Life Cycle.

REFERENCE

Books:

- Java The Complete reference

Websites:

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- https://www.sabic.com/en/collaboration/trend/energy-efficiency?gclid=Cj0KCQjww7HsBRDkARIsAARsIT7_hEwRAArZO0bFlXgMaIfPUR9f2ME2nX1YUgtZ8P2kIQMX8SSqJakaAm2BEALw_wcB
- https://www.conserve-energy-future.com/energy-conservation-techniques.php