ELECTRICITY BILLING SYSTEM

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Abstract

Science and technology is attaining new heights and success and with these advancements , human life has also become easy and relaxing. Human life would stuck without these innovations. Electricity consumers are often faced with the problem of inaccuracy and human errors which prevail in the existing billing system, which makes it a necessity to come up with a system which resolves these problems. This project is made to provide solution to the above mentioned problem. This project makes electricity billing easy for everyone. This project has been made by using Java Swing as front end and MYSQL as back end. This project mainly emphasis on developing a way to reduce physical involvement of people in paying their electricity bill rather makes it possible to pay the bill while sitting at their home. It displays various functionalities depending whether the user is an admin or a customer. It maintains an error free database and can easily incorporates future developments.

Keywords: Online bill payment, Type of user dependent, MYSQL, Java Swing.

I. INTRODUCTION

This project develops a new and different way of paying electricity bill which uses Java Swing and MYSQL. It is an online system to pay the bill, whereas existing system is manual system which requires the involvement of a number of people. This system helps the customer in generating their bill which gives them all the basic and required details. It also helps the admin or administration to keep a track of users and details and status of their bill. Admin can also add new users and update existing users' information. This system also maintains the privacy among the users as they are not allowed to see each other's credentials or details, whereas admin can view users' details.

This system eliminates the need of keeping paper electricity bills, administrator does not need to keep a track of users, and users can pay their bill without visiting the office.

II. BACKGROUND

The main reason for developing this system is the problem prevailing in the existing manual system. People are facing problems in paying their electricity bills as they have to make a visit to electricity board for payment and many-a-times, their payment is not done in their first visit and they have to visit the offices a number of times to get their bill paid. Many-a-times, errors exist in the meter readings as they are taken manually by some officials.

In order to resolve these issues, this system is designed so as users need not to visit to offices anymore and can pay their electricity bill easily and from anywhere. This is an online electricity billing system which along with the online payment of bill, provides some more features to the users like – they can generate their monthly bill and can also see their bill details.

III. PROJECT SPECIFICATIONS

This section contains all the necessary tables and modules required for designing this system.

A. Modules and their Specifications

This system comprises of two main modules divided further into sub-modules, which are as follows -

1) *Admin Login* : In Admin login or administrative login, the admin has the control on the system. The admin, also referred to as 'owner', has the right to add new user in the system's database, view users details, view deposit details of the users. In order words, we can say that a admin has been granted full access to the system.

2) *Customer Login* : Customer login, also referred to as 'user login'. In this, a user can login in the system and can perform some tasks like – generating their electricity bill which gives them the description of each and every factor which contributes to their bill, payment of bill and can also view their bill details.

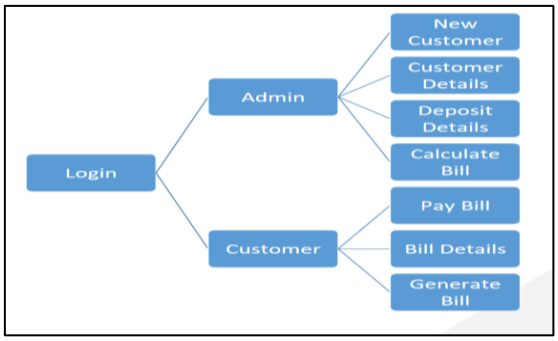

Fig.1 Block diagram of system

B. *Database Tables and their Description*

This system comprises of mainly five tables which are used for storing different records, which are as follows –

1) *Bill Table :* This table stores the bill details of the users.

Table 1 : Bill Table

Field	Type	Size	Null	Default
meter	varchar	20	YES	NULL
month	varchar	20	YES	NULL
units	varchar	20	YES	NULL
total_bill	varchar	20	YES	NULL
status	varchar	20	YES	NULL

2) *Customer Table :* This table stores the basic details related to customers / users.

Table 2 : Customer Table

Field	Type	Size	Null	Default
name	varchar	30	YES	NULL
meter	varchar	20	YES	NULL
address	varchar	50	YES	NULL
city	varchar	20	YES	NULL
state	varchar	30	YES	NULL
email	varchar	30	YES	NULL
phone	varchar	20	YES	NULL

3) *Login Table :* This table stores the login credentials of all the existing users in the system.

Table 3 : Login Table

Field	Type	Size	Null	Default
meter_no	varchar	20	YES	NULL
username	varchar	30	YES	NULL
name	varchar	30	YES	NULL
password	varchar	30	YES	NULL
user	varchar	30	YES	NULL

4) *Meter_info Table :* This table stores the information about meter of users.

Table 4 : Meter_info Table

Field	Type	Size	Null	Default
meter_no	varchar	20	YES	NULL
meter_location	varchar	20	YES	NULL
meter_type	varchar	20	YES	NULL
phase_code	varchar	20	YES	NULL
bill_type	varchar	20	YES	NULL
days	varchar	20	YES	NULL

5) *Tax :* This table stores the details of the tax on the bill.

Table 5 : Tax Table

Field	Type	Size	Null	Default
cost_per_unit	varchar	20	YES	NULL
meter_rent	varchar	20	YES	NULL
service_chanrge	varchar	20	YES	NULL
service_tax	varchar	20	YES	NULL
fixed_tax	varchar	20	YES	NULL

IV. *TOOLS USED*

A. *NETBEANS*

NetBeans is a software development platform written in Java. The NetBeans IDE is mainly used for developing application in Java, but it also supports other languages, like - PHP, C/C++ and HTML5. It is a cross-platform software which runs on Microsoft windows, macOS, Linux, Solaris and other platform supporting a compatible JVM. The Java editor in NetBeans is much more than a text editor as it automatically intends lines, matches words and brackets and highlights source code syntactically and semantically.

V. CONCLUSION

Electricity Billing System using Java Swing as front-end and MySQL as back-end has been developed with the help of NetBeans IDE effectively. It is simple and user friendly. Since this system is made using Java language, it is independent of the platform on which it is being used. It has wide scope for future expansion. There is no need of manual involvement or maintaining bundles of papers in the billing branch. The accuracy and reliability are surely increased. It does not allow any person apart from the registered one, to use this system. This system provides secured processing without any threats.

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