A

PROJECT REPORT

ON

"ELECTRICITY BILLING SYSTEM"

Submitted to

"SHIVAJI UNIVERSITY, KOLHAPUR"

For the partial fulfillment

of

The requirement of the award

BACHELOR OF SCIENCE (COMPUTER SCIENCE (Entire)) (BCS)

By

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Under the guidance of

Mrs. S.S.Gavade

Through

The Principal

JAYSINGPUR COLLEGE, JAYSINGPUR

2022-2023

JAYSINGPUR COLLEGE, JAYSINGPUR

CERTIFICATE

This is to certify that, the project report entitled "**ELECTRICITY BILLING SYSTEM"** is record of project work, carried out in this college by Sarthak S. Salve, Aditya R. Patil in partial fulfillment of award of **B.Sc. Computer Science(Entire)** as laid down by Shivaji University, Kolhapur during the year 2022-202. This project presents their sincere work carried out under our guidance.

To the best of my knowledge & belief the matter presented in this project report has not been submitted earlier to any university for similar purpose.

Place: Jaysingpur

Date:

Mrs.S.S.Gavde	Mr. B.A.Patil	(Examiner) (Project
Guide)	(H.O.D.)	Shivaji University, Kolhapur

ACKNOWLEDGEMENT

The first and foremost person, we would like to thank is our guide **Mrs. S.S Gavade** for her keen interest, valuable guidance and continuous encouragement throughout the development of this project work. We express our sincere thanks to other faculty members of computer science department for their valuable suggestions and support.

We would like to express our deepest gratitude for constant support , understanding and care that we received from our parents who taught us to go ahead in the right way and never to be depressed even in the complicated situations .

Finally, we would like to express our sincere gratitude to those who have helped us directly or indirectly in our project .

Date :

DECLARATION

We hereby declare that the project entitled **"Electricity Billing System"** which is being submitted here with has been developed and completed by us is our original work and has not previously been submitted to any university or examining body for the award of any degree .

We have referred the websites given in the bibliography during the development of the project and have not copied any of written material or its part there of . This project is purely our own and on our merits.

Place: Jaysingpur

Date :

Mr.Sarthak Sambhaji Salve

Mr.Adiya Ramesh Patil

INDEX

Sr. No.	Title	Page .No.
1.	**Introduction:-** - Introduction - Existing System - Need and Scope of Computer System	6 to 8
2.	**Proposed System :-** - Objectives - Requirement Gathering - SRS	9 to 12
3.	**System Analysis :-** System Diagram - DFD - ERD - UML	13 to 24
4.	**System Design :-** - Database Design - Input Design - Output Design	25 to 43
5.	**Implementation :-** System Requirements - Hardware - Software - User Guideline - Installation process	44
6.	**Conclusion :-** - Conclusion - Future Enhancement	45
	Bibliography	47

1.INTRODUCTION

1. Electricity Billing System is a software-based application.

2 .To design the billing system more service oriented and simple, the following features have been implemented in the project. The application has high speed of performance with accuracy and efficiency.

3.The software provides facility of data sharing, it does not require any staff as in the conventional system. Once it is installed on the system only the meter readings are to be given by the admin where customer can view all details, it has the provision of security restriction.

4.The electricity billing software calculates the units consumed by the customer and makes bills, it requires small storage for installation and functioning. There is provision for debugging if any problem is encountered in the system.

5.The system excludes the need of maintaining paper electricity bill, administrator does not have to keep a manual track of the users, users can pay the amount without visiting the office. Thus, it saves human efforts and resources.

1.1 EXISTING SYSTEM

The conventional system of electricity billing is not so effective; one staff must visit each customer's house to note the meter readings and collect the data. Then, another staff must compute the consumed units and calculate the money to be paid. Again, the bills prepared are to be delivered to customers. Finally, individual customer must go to electricity office to pay their dues.

Hence, the conventional electricity billing system is uneconomical, requires many staffs to do simple jobs and is a lengthy process overall. In order to solve this lengthy process of billing, a web based computerized system is essential. This proposed electricity billing system project overcomes all these drawbacks with the features. It is beneficial to both consumers and the company which provides electricity.

1.2NEED AND SCOPE OF COMPUTER SYSTEM

Main aim of developing Electricity Billing System is not just to provide an easy way to all functionalities involved in Electricity Management, but also to provide full functional reports to manage the Company with details like customer details, meter info, billing and payment status, and customer visit details on one click.

A. To design the billing system more service oriented and simple, the following features have been implemented in the project. The application has high speed of performance with accuracy and efficiency.

B. To provides facility of data sharing, it does not require any staff as in the conventional system. Once it is installed on the system only the meter readings are to be given by the admin where customer can view all details, it has the provision of security restriction.

C. The system excludes the need of maintaining paper electricity bill, administrator does not have to keep a manual track of the users, users can pay the amount without visiting the office. Thus, it saves human efforts and resources.

2PROPOSED SYSTEM

The conventional system of electricity billing is not so effective; one staff must visit each customer's house to note the meter readings and collect the data. Then, another staff must compute the consumed units and calculate the money to be paid. Again, the bills prepared are to be delivered to customers. Finally, individual customer must go to electricity office to pay their dues.

Hence, the conventional electricity billing system is uneconomical, requires many staffs to do simple jobs and is a lengthy process overall. In order to solve this lengthy process of billing, a web based computerized system is essential. This proposed electricity billing system project overcomes all these drawbacks with the features. It is beneficial to both consumers and the company which provides electricity.

2.1OBJECTIVES

A. To keep the information of Customer.

B. To keep the information of consuming unit energy of current month.

C. To keep the information of consuming unit energy of previous month.

D. To calculate the units consumed every month regularly.

E. To generate the bills adding penalty and rent.

F. To save the time by implementing payment process online.

2.2REQUIRMENT GATHERING-

Information Gathering:

***Admin details:** The information of person who will use this system is required like their name, username, password, security question and answer.

***Customer details:** To Pay a bill for a customer, we need customer information like name, phone number, address, email etc.

2.3SPECIFIC REQUIRMENT GATHERING-

Introduction-

The SRS is produced at the columniation of the analysis task the function and performances allocate to software as part of the system engineering and refine by establishing a complete information descript a detailed functional description reprehensive of system behavior , indignation of performance requirement and design constraints appropriate validation criteria and the other information related to requirements .

1External interface Requirment -

- The system takes
- Input from keyboard and files in the memory.
- The system generates printable output on the screen and peripherals.The system uses MySQL database to communicate with database

2.User interface-

- The software provides good graphical interface for the admin. Specific administrator can operate the system by performing the required tasks such as create ,update ,view the details of the customer, packages, hotels.
- Allows admin to view reports like customer, package, hotel information and bookings made in between particular month or day.
- Able to generate reports based on the different criteria.

3.Hardware Interface –

a. Hard disk : 1TB

b. RAM : 4.00 GB

c. Processor : Intel(Core i5 7^{th} gen)

d. System type : 64 bit

e. Operating System : Windows 10

4.Software Interface

- Front End : Apache NetBeans IDE 12.5
- Back End : MySQL Workbench 8.0 CE

5.Communication Interface

Microsoft Windows

6.**Functional Requirement**

• Use Cases The use cases describe the procedures and exemptions for each function. The appropriate permissions of each user are listed in Page 13 User Characteristics of this document .

7.Item Entry

In this module we can store the details of Bills, Payments, customers

8.**Performance Requirement**

The system is required to support multiple terminals simultaneously. The system should handle reasonable number of requests without break or inconsistency.

9.Atributes-

Security

The system is can only be accessed by admin though a verified Page 14 username and password. Admin can change the password only by answering the security question selected while registration.

Maintainability

The document should be easy for the users who execute the system day to day, for the developers who wish to edit or develop further , and for the personnel who is in charge of the maintenance.

Portability

The system should support new versions of the related browsers.The administrative and servers technologies should be standard and supported by most platforms.

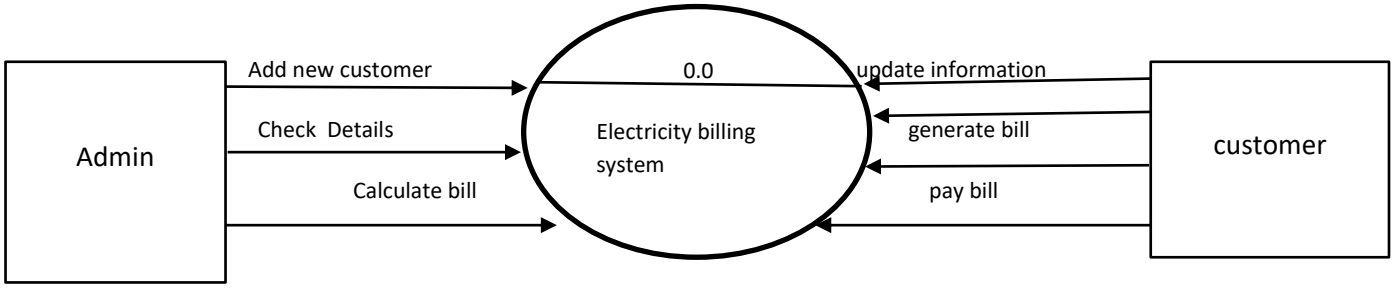
Usability

An easy to understand documentation should be provided with the system.

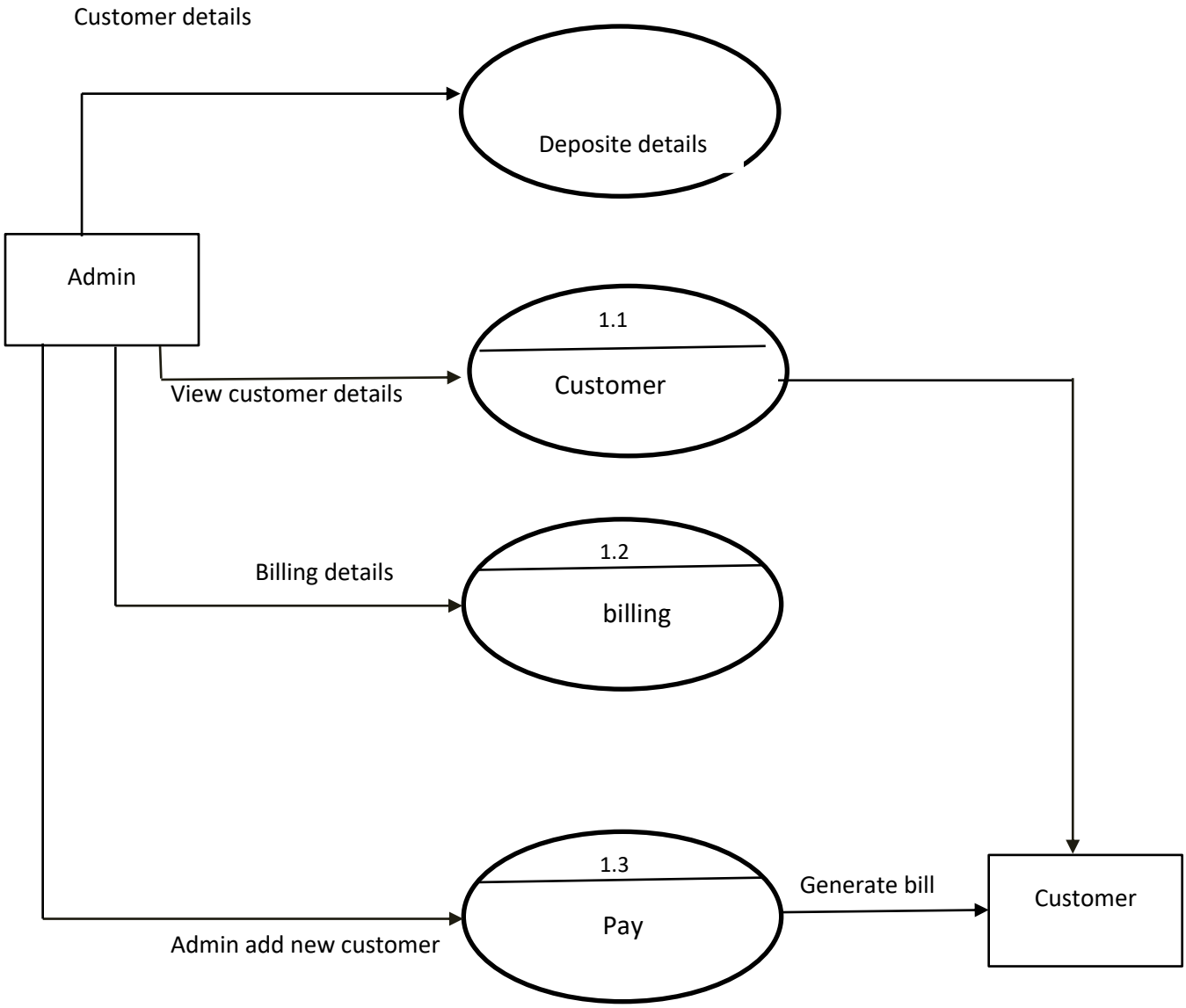
3 SYSTEM ANALYSYS

3.1 System design

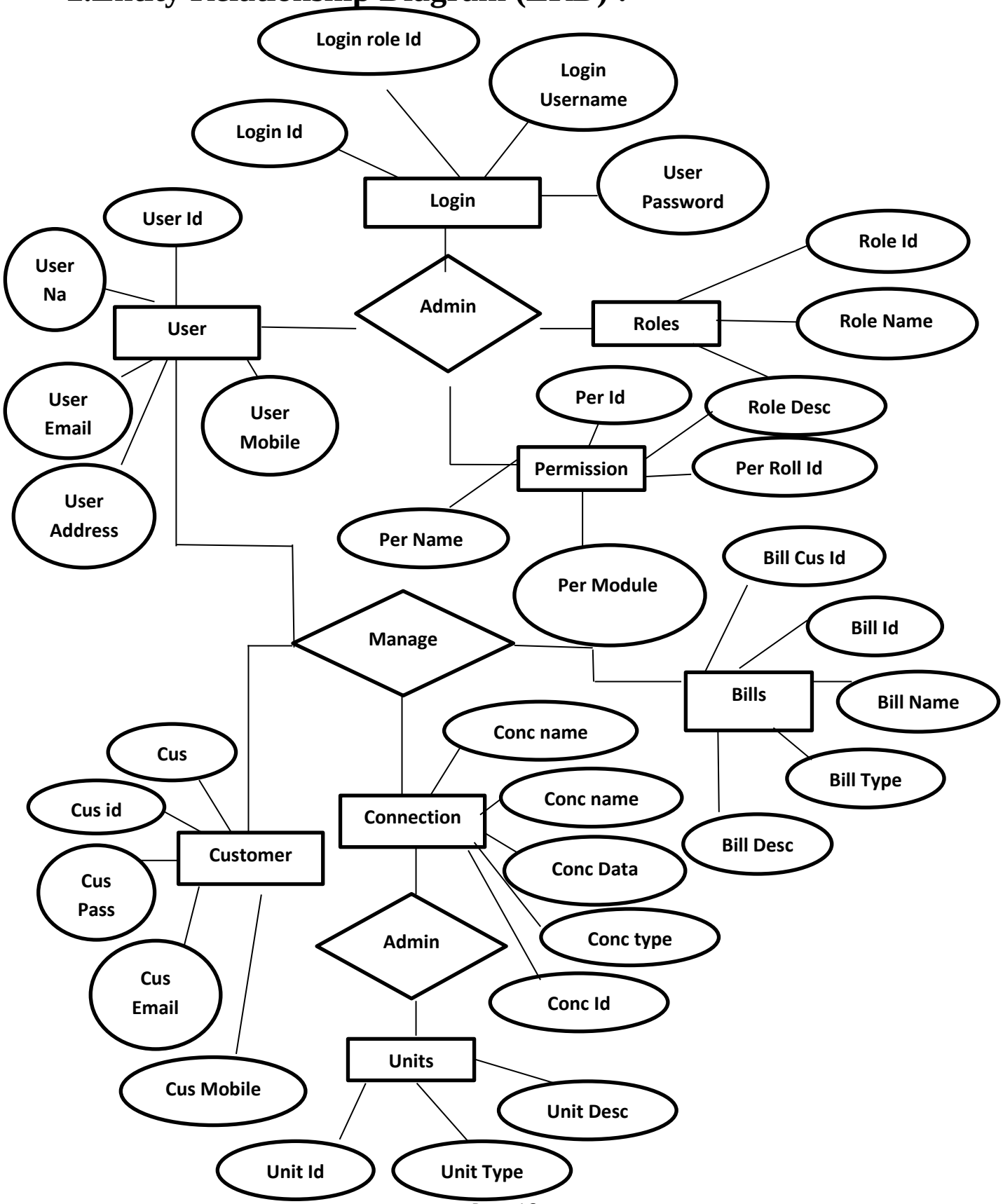
1 Data flow Diagram



2.First level DFD

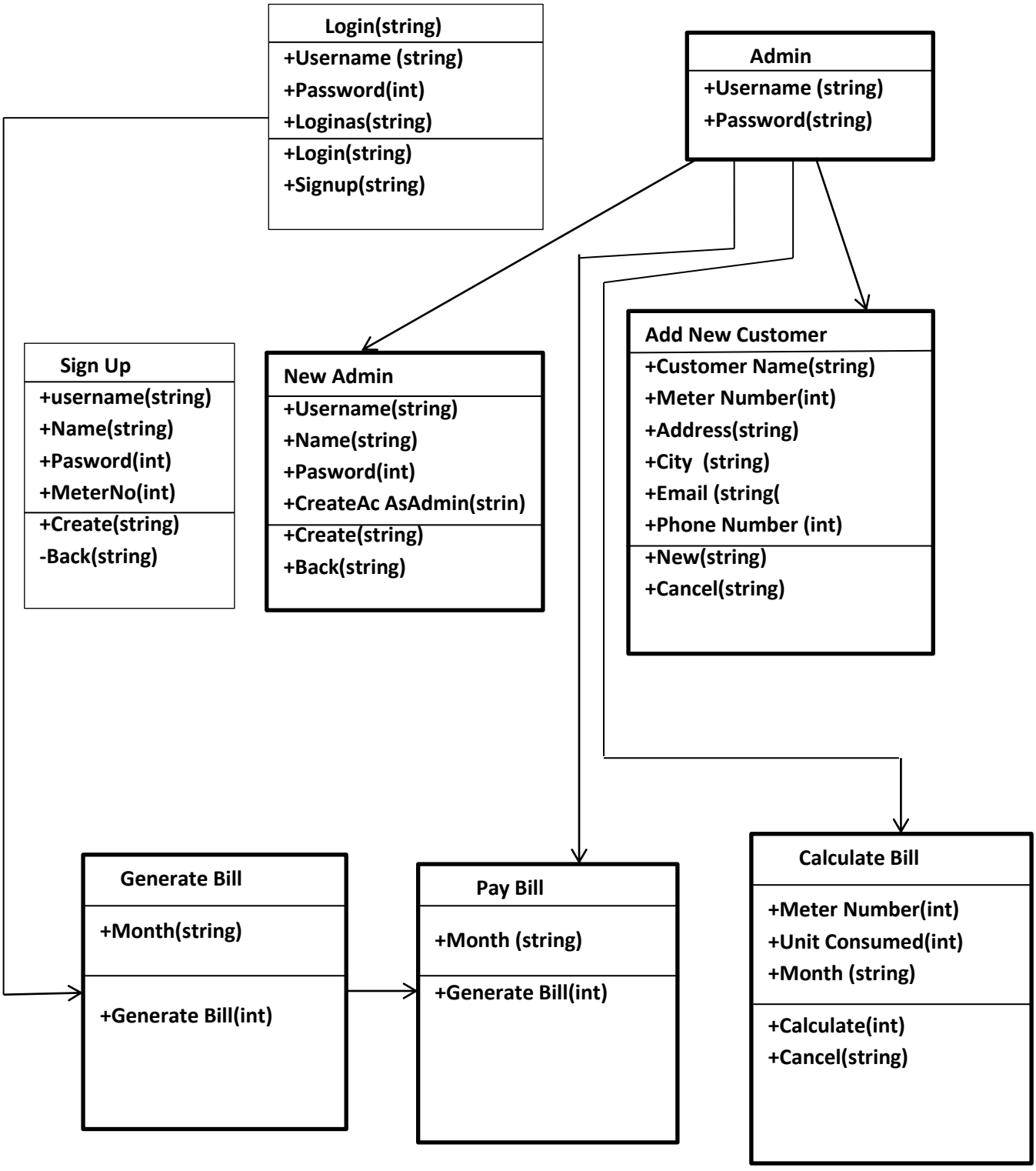


2.Entity Relationship Diagram (ERD) :

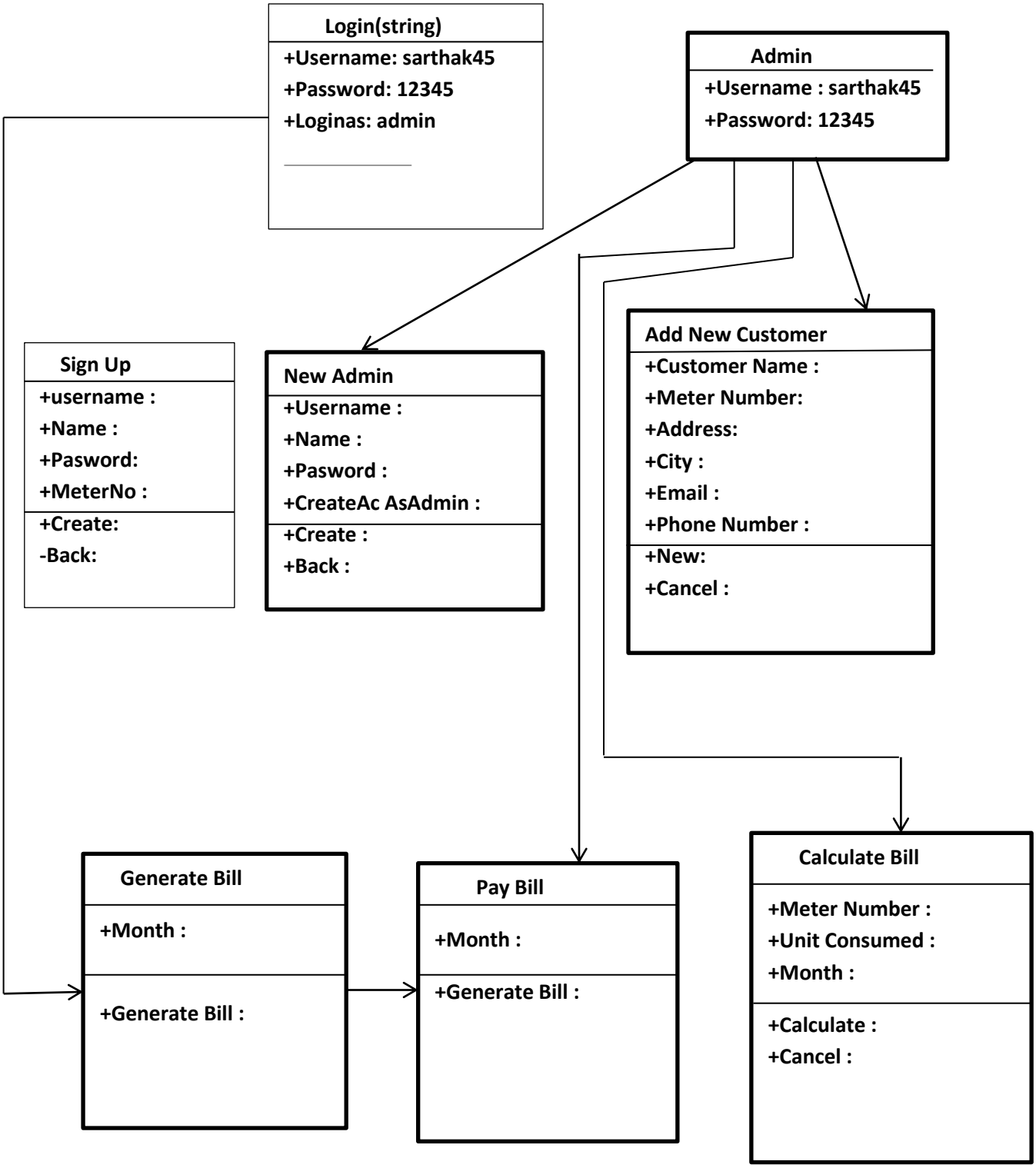


3.3UML

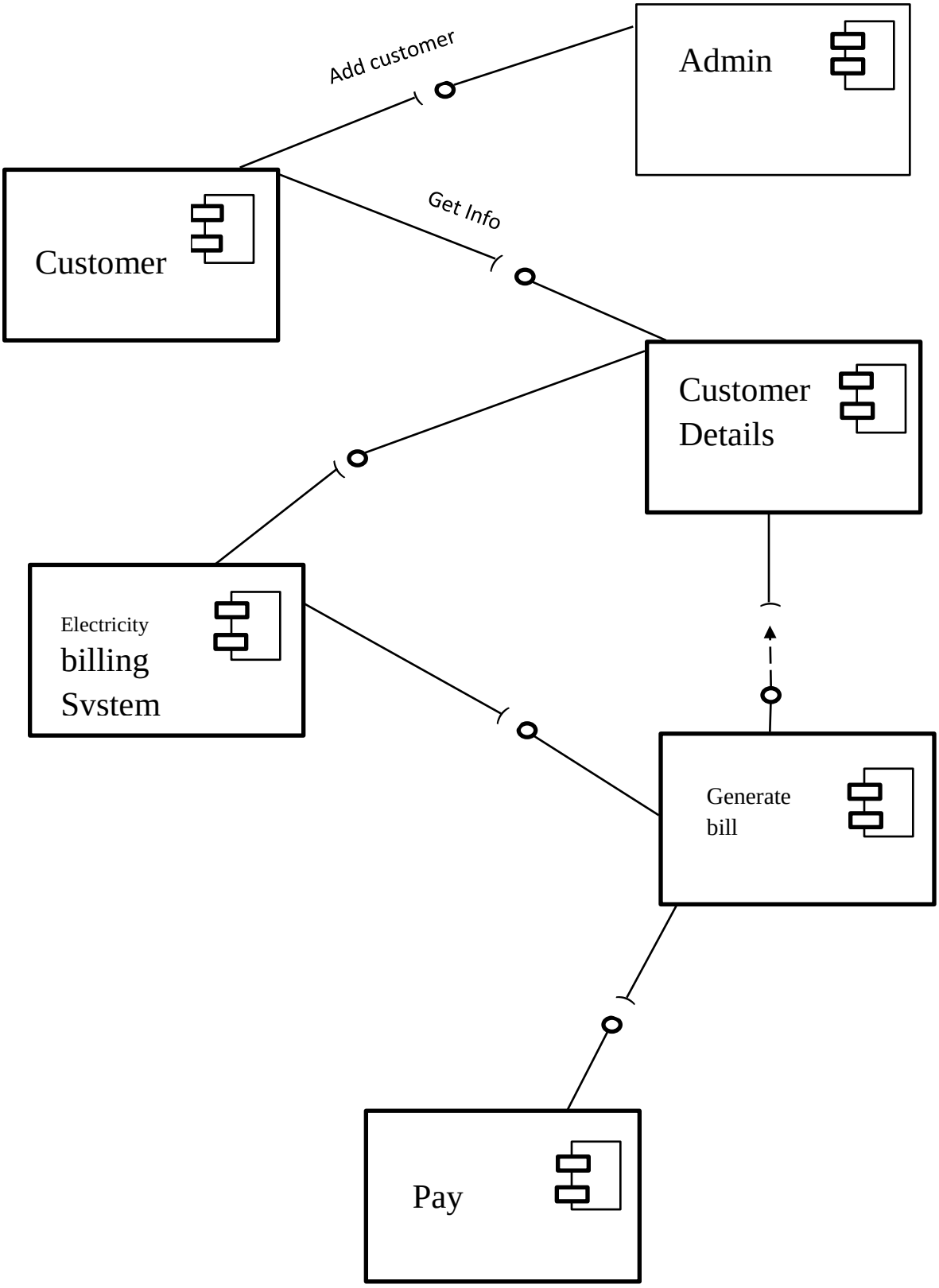
A.Class Diagram:



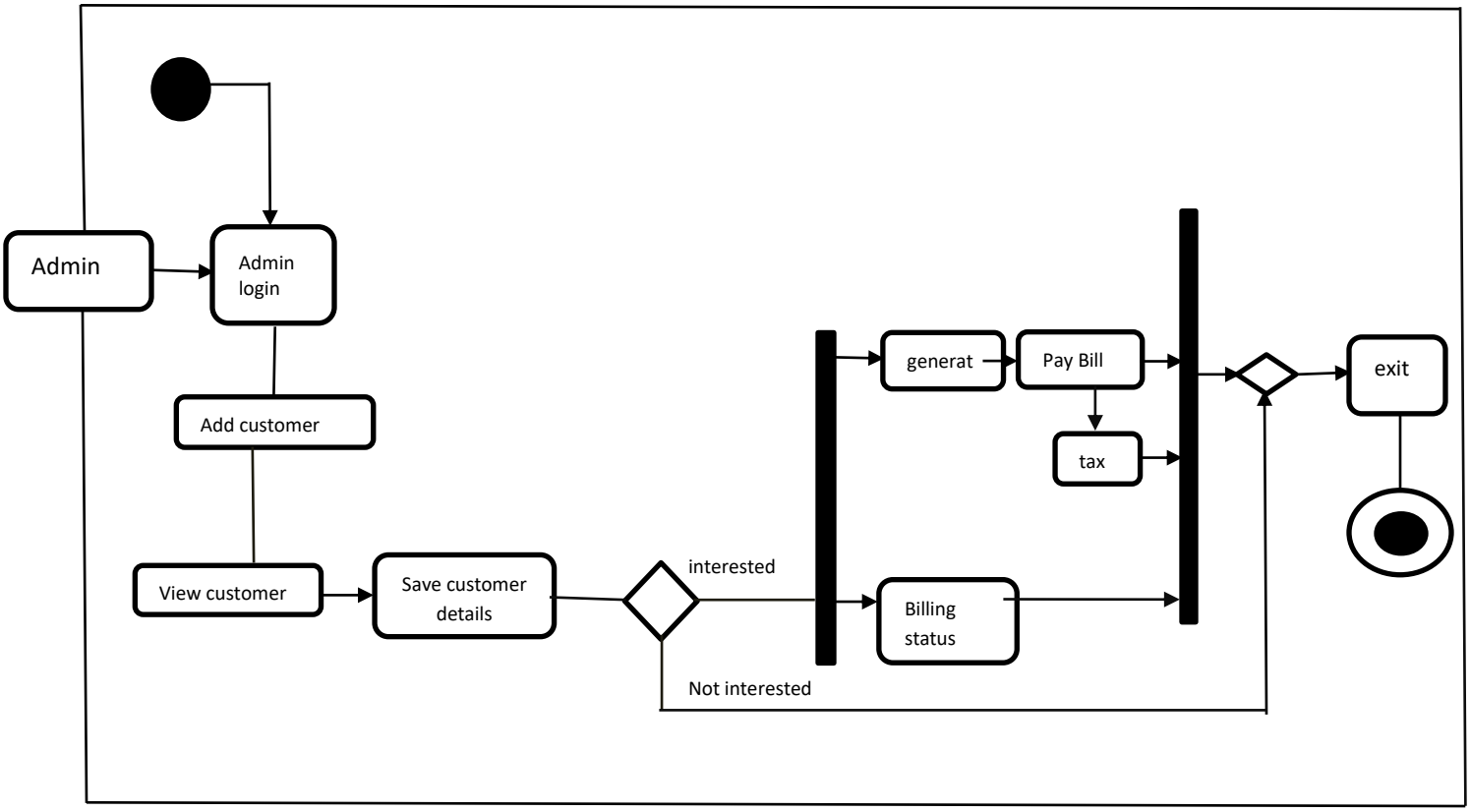
B. Class Diagram:



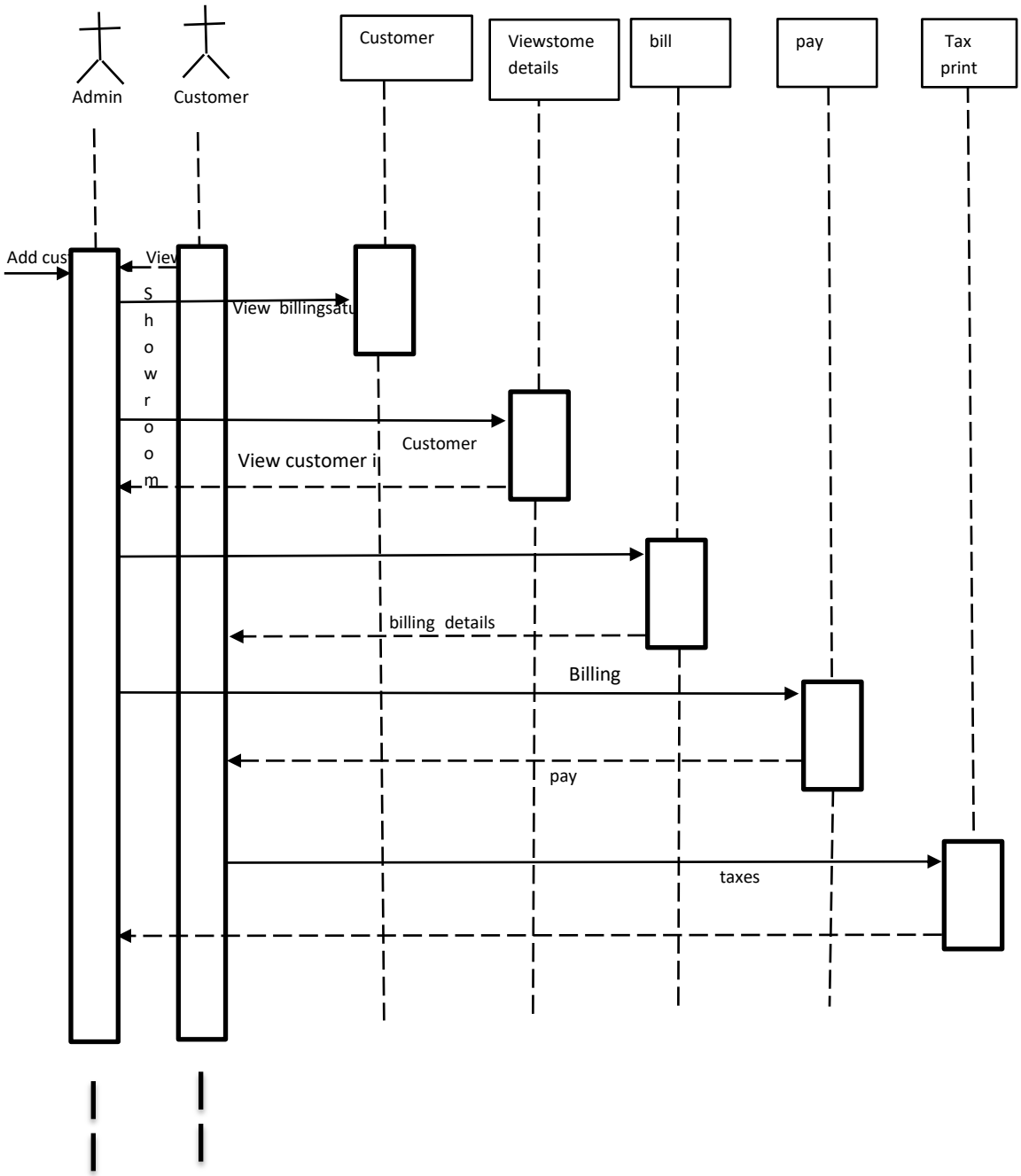
C. Component Diagram:-



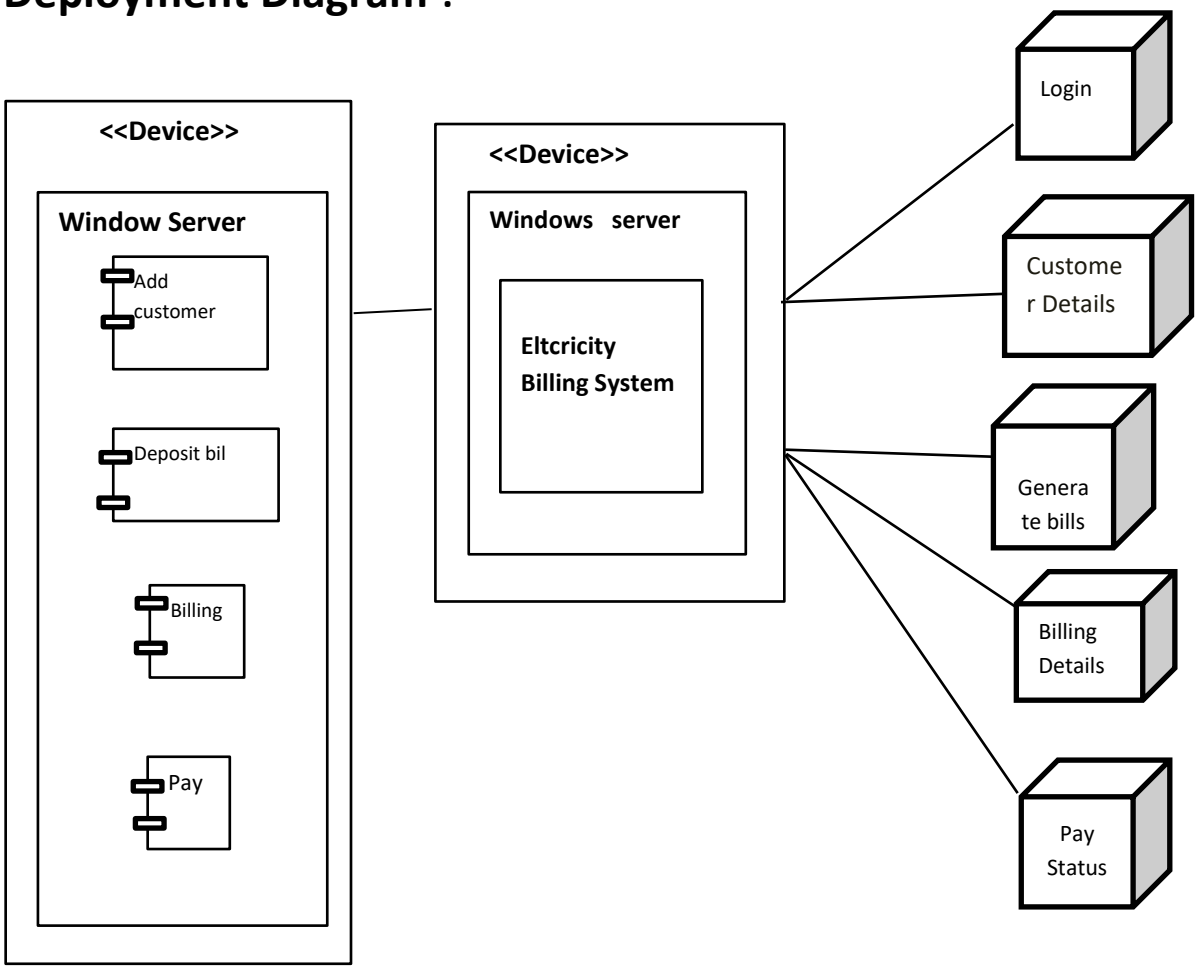
D. State Diagram:-



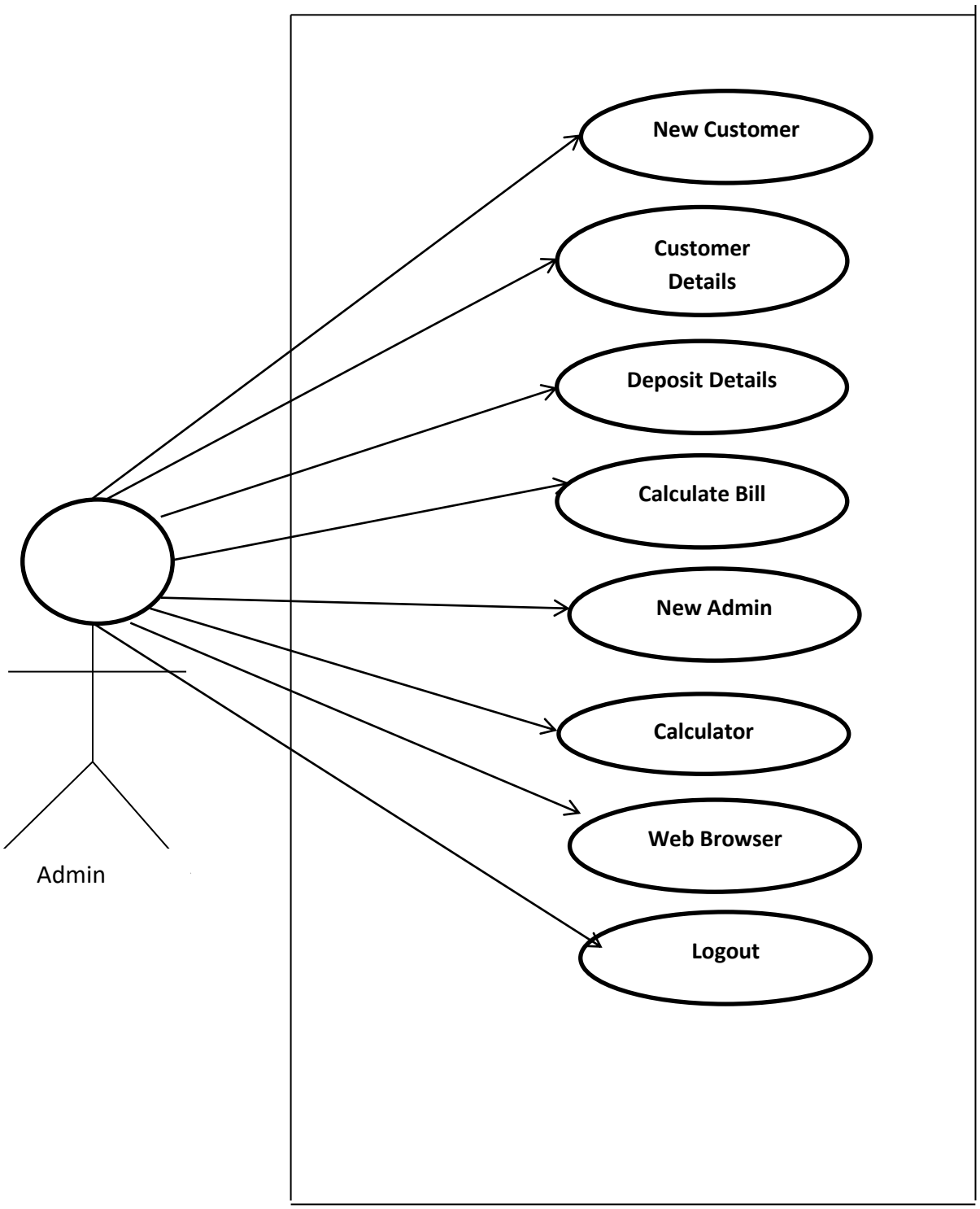
E .Sequence Diagram:-



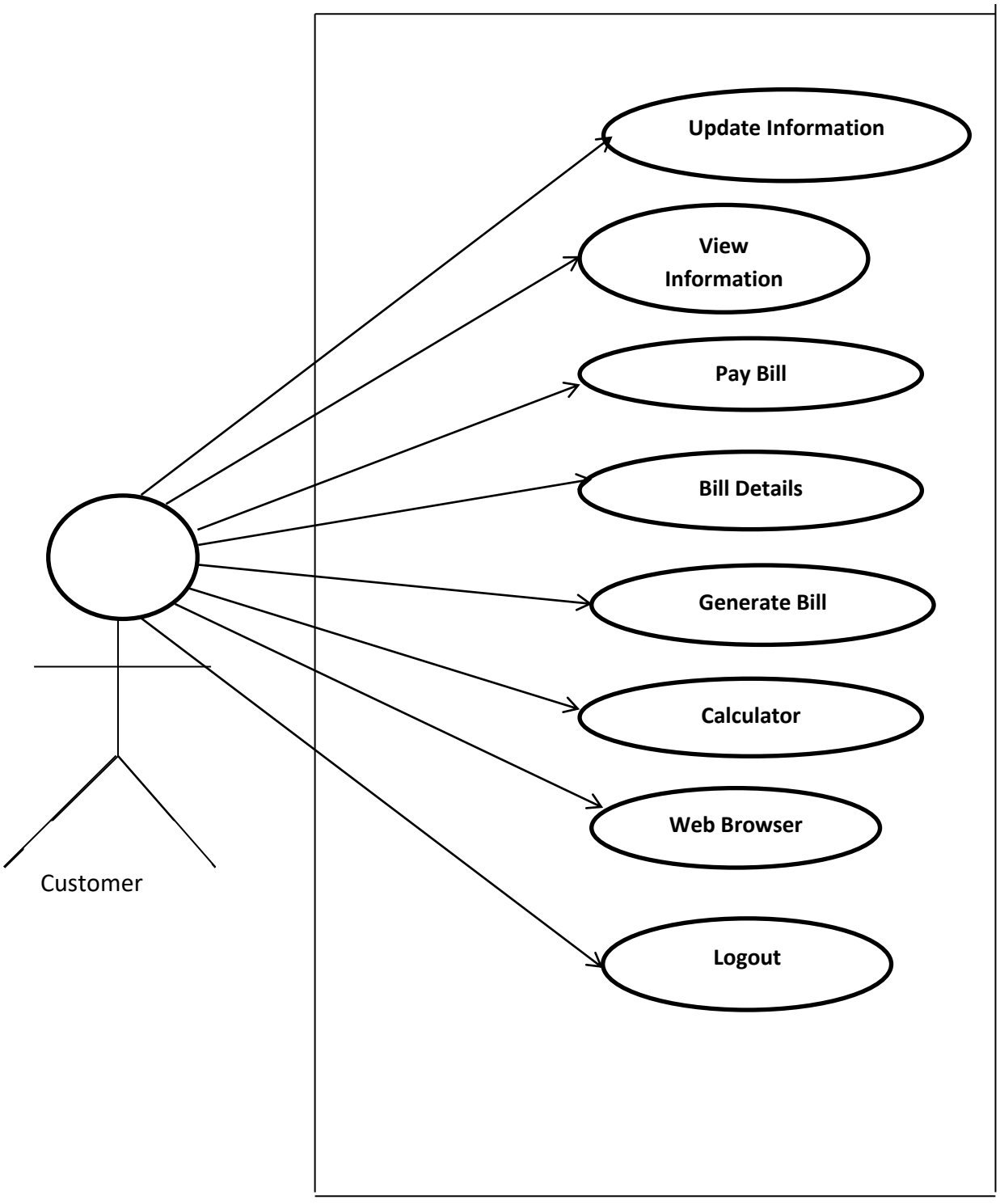
Deployment Diagram-:



F . Use Case Diagrams:



F.a .Use Case Diagrams:



4. SYSTEM DESIGN

4.1 DATABSE DESIGN :-

1) Table : Login

Description: It is maintain login details.

Filled Name	Data Type	Constraint	Decription
meter_No	Varchar(20)	Not null	Describes meter no
username	Varchar(30)	Not null	Describes username
name	Varchar(30)	Not null	Describes name
password	Varchar(20)	Not null	Describe password
user	Varchar(20)	Not null	Describe which type of user login

2) Table : Customer

Description: It is maintain Customer details.

Filled Name	Data Type	Constraint	Decription
name	Varchar(20)	Not null	Describes name
meter_No	Varchar(20)	Not null	Describes meter no
address	Varchar(50)	Not null	Describes address
city	Varchar(30)	Not null	Describes city
state	Varchar(30)	Not null	Describes state
email	Varchar(40)	Not null	Describes email
phone	Varchar(20)	Not null	Describes phone

3) Table : Meter info

Description: It is maintain meter information.

Filled Name	Data Type	Constraint	Decription
meter_no	Varchar(20)	Not null	Describes meter no
meter_location	Varchar(20)	Not null	Describes meter location
Meter_type	Varchar(20)	Not null	Describes meter type
Phase_code	Varchar(20)	Not null	Describes phase code
Bill_type	Varchar(20)	Not null	Describes bill type
days	Varchar(20)	Not null	Describes days

4) Table: Bill

Description: It is maintain all billing data.

Filled Name	Data Type	Constraint	Decription
meter_no	Varchar(20)	Not null	Describes meter no
month	Varchar(30)	Not null	Describes month
units	Varchar(20)	Not null	Describes units
totalbill	Varchar(20)	Not null	Describes tptalbill
status	Varchar(20)	Not null	Describes status bill paid or not

5) Table: Tax

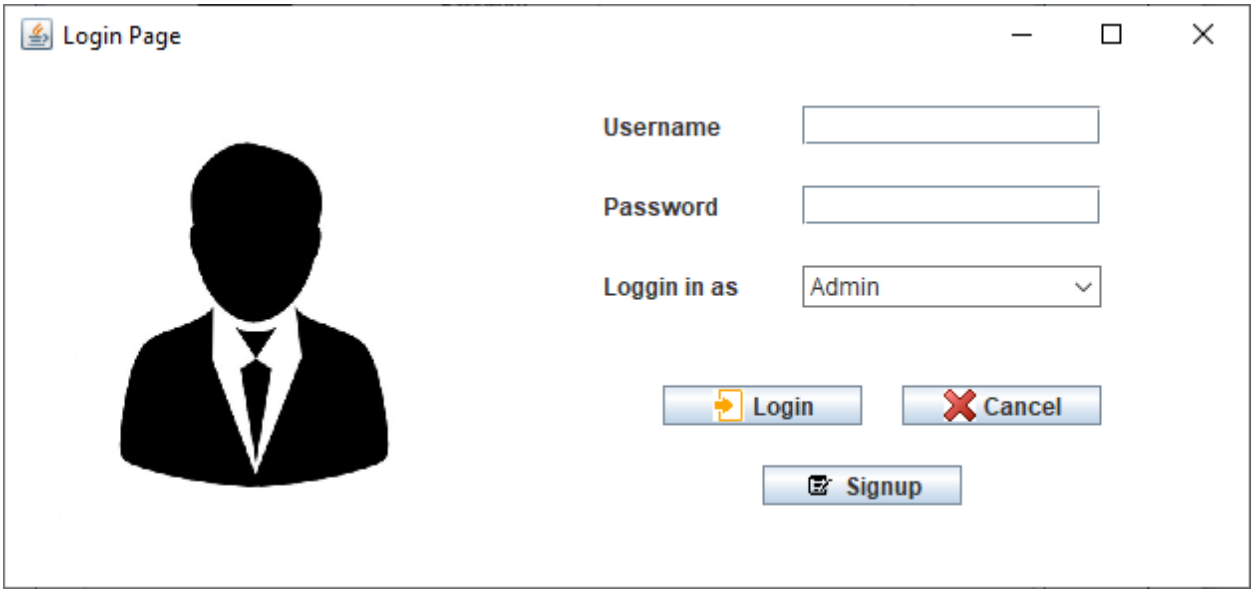
Description: It is maintain Tax information.

Filled Name	Data Type	Constraint	Decription
cost_per_unit	Varchar(20)	Not null	Describes cost_per_unit
meter_rent	Varchar(20)	Not null	Describes meter_rent
service_charge	Varchar(20)	Not null	Describes service_charge
service_tax	Varchar(20)	Not null	Describes service_tax
swtcch_bharat_cess	Varchar(20)	Not null	Describes swtcch_nharat_cess
fixed_tax	Varchar(20)	Not null	Describes fixed_tax

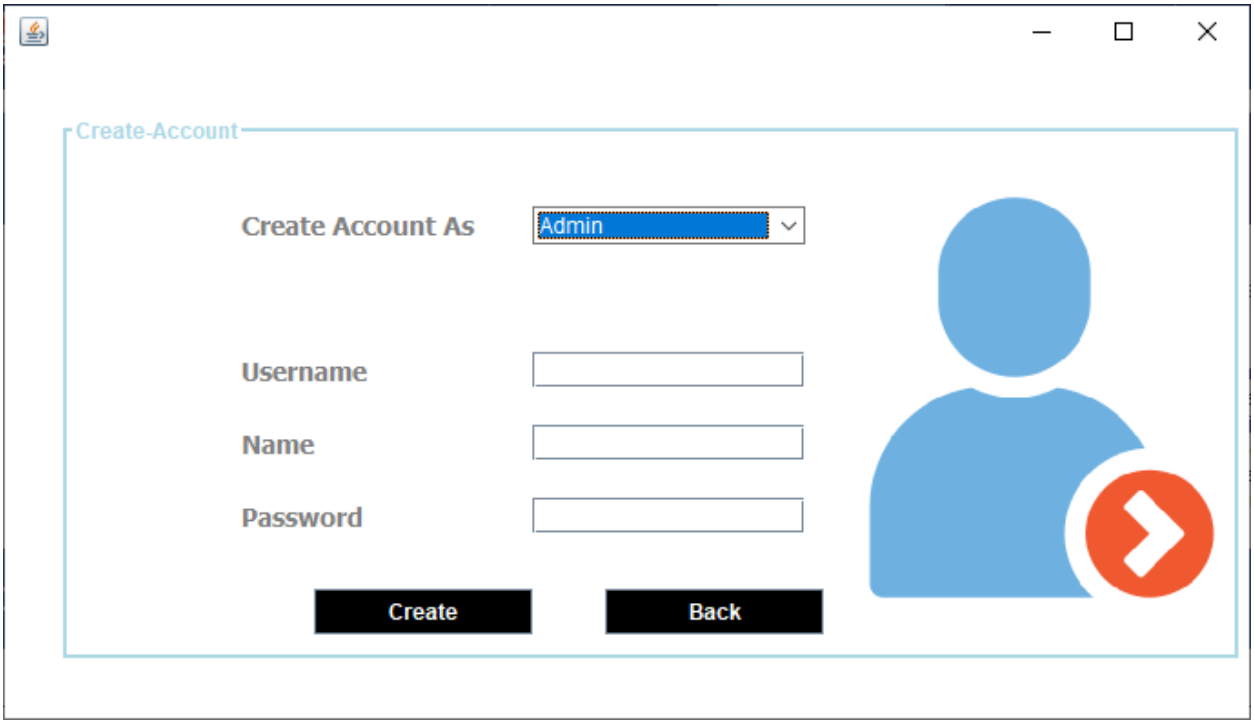
4.2 INPUT DESIGN :

1) Splash page of Electricity Billing System:

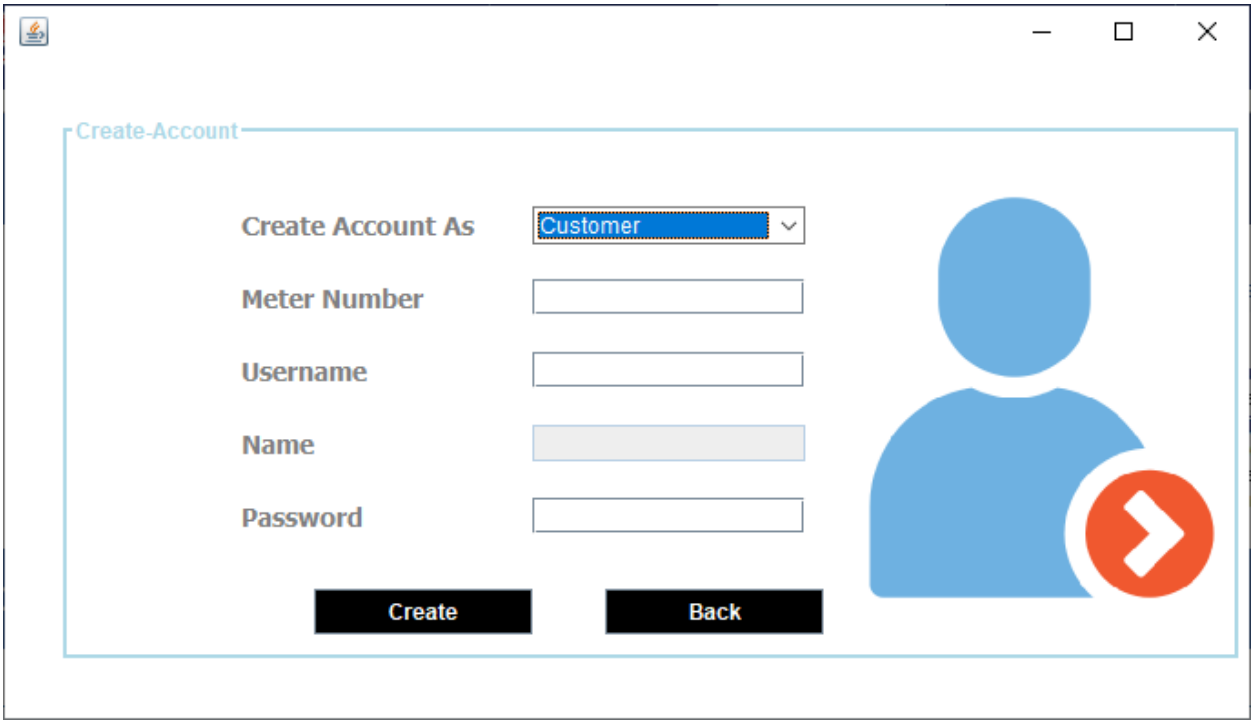
2) Login Form:



3) Signup Form: Admin

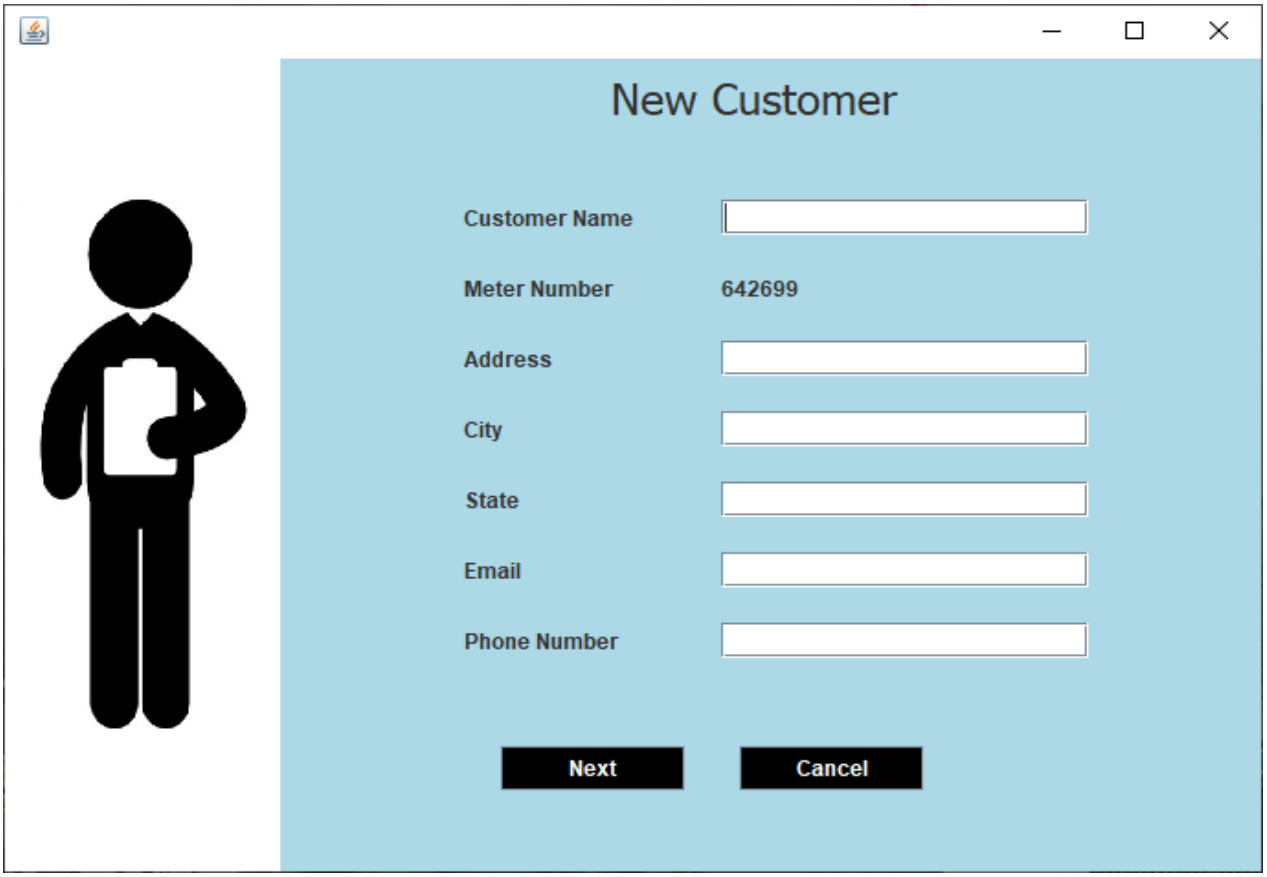


4) Sign in Form: Customer

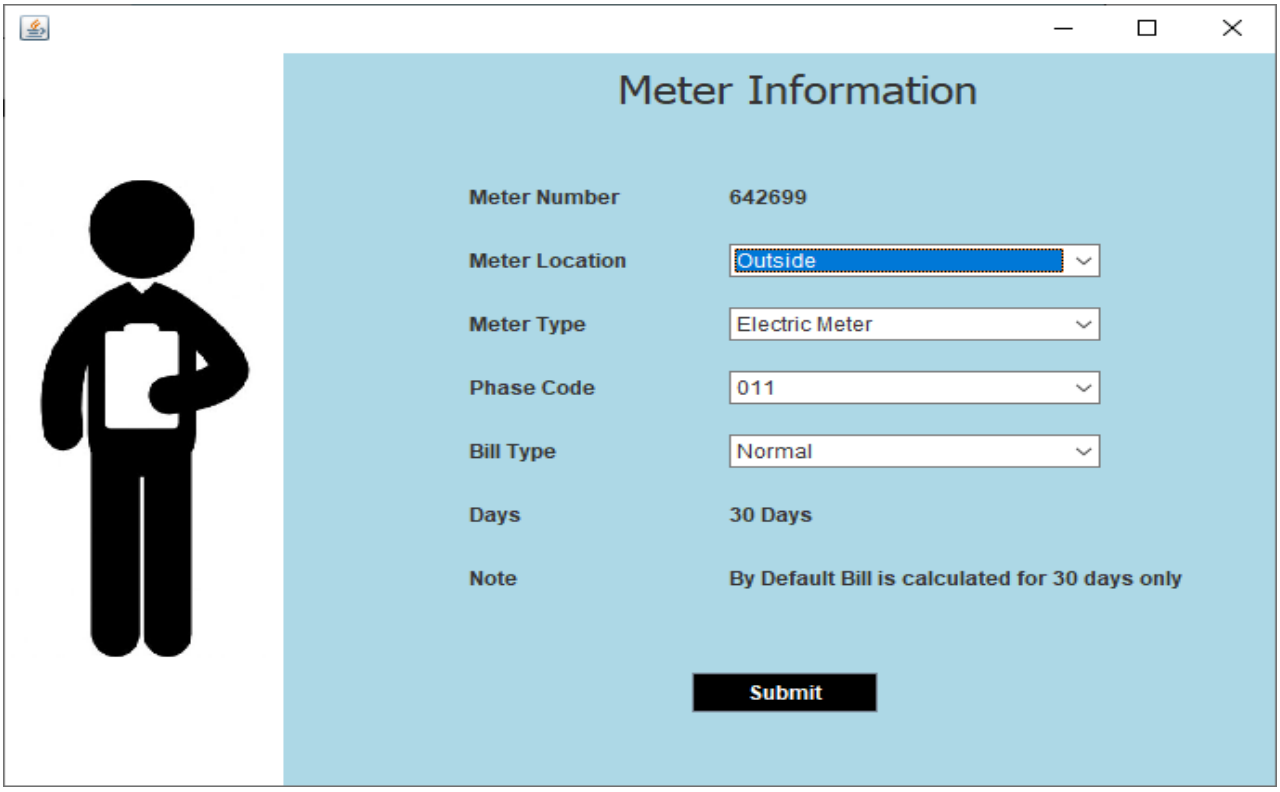


5) Admin Home Form:

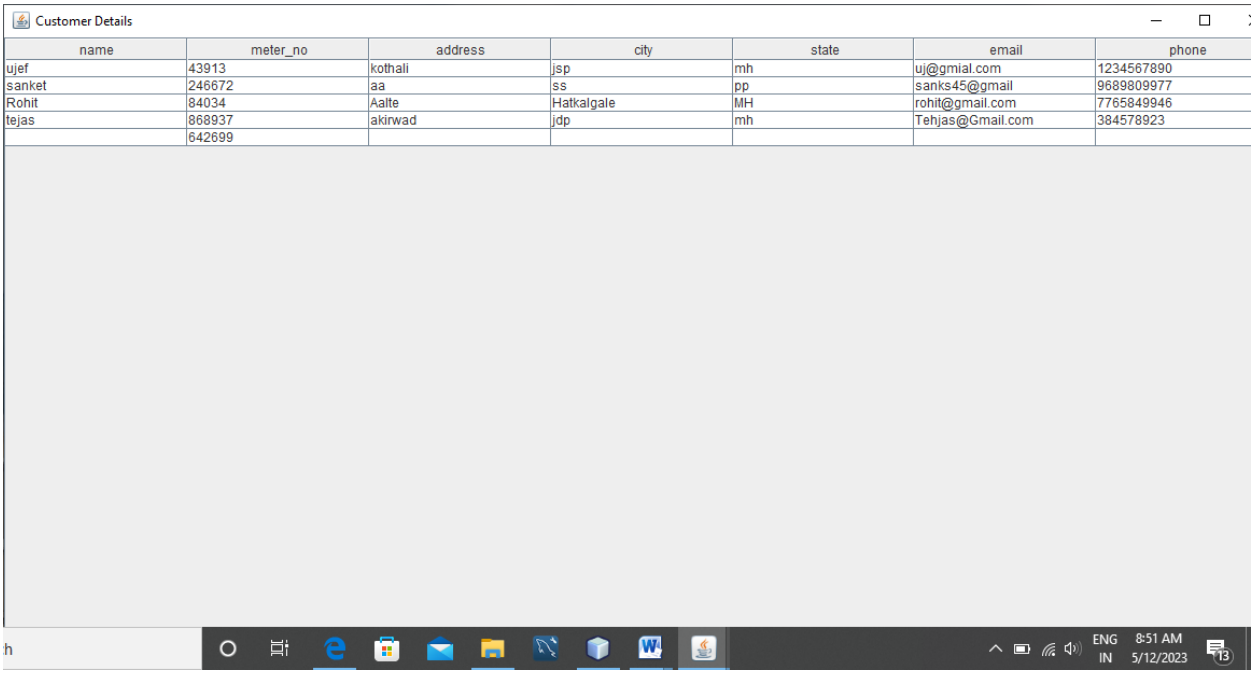
6)New Customer Form:



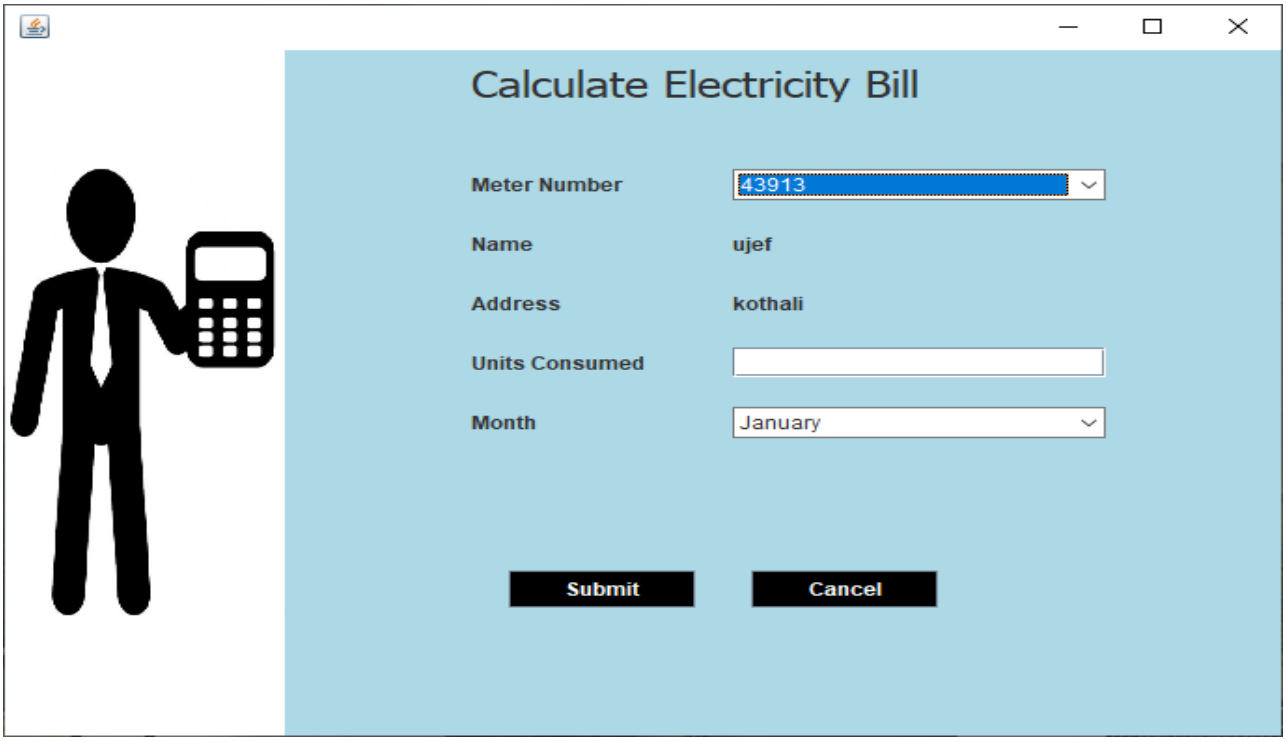
7) Meter Info Page:



8) Customer Details Form:

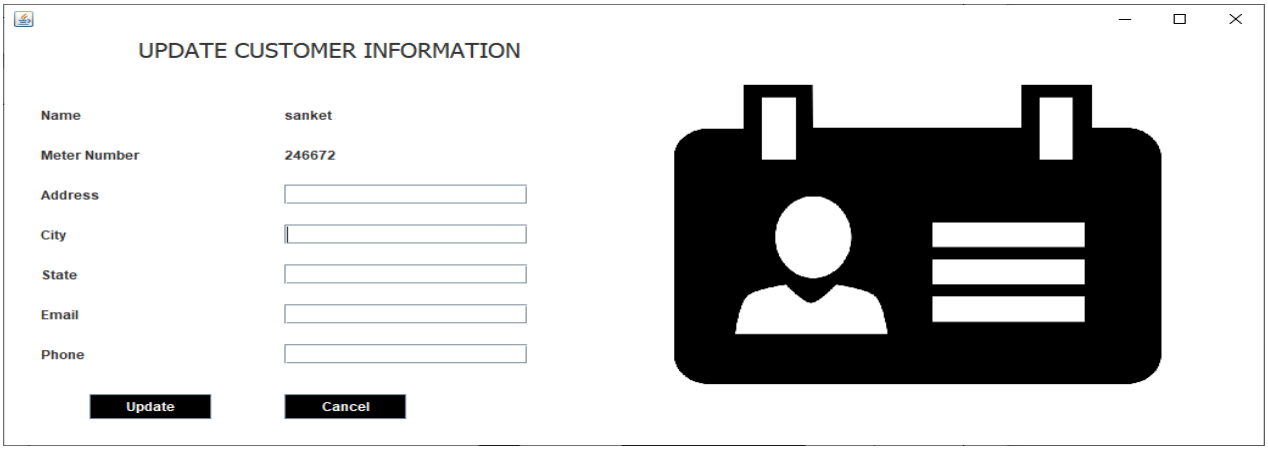


9) Calculate Electricity Bill:



10) Customer Home Page:

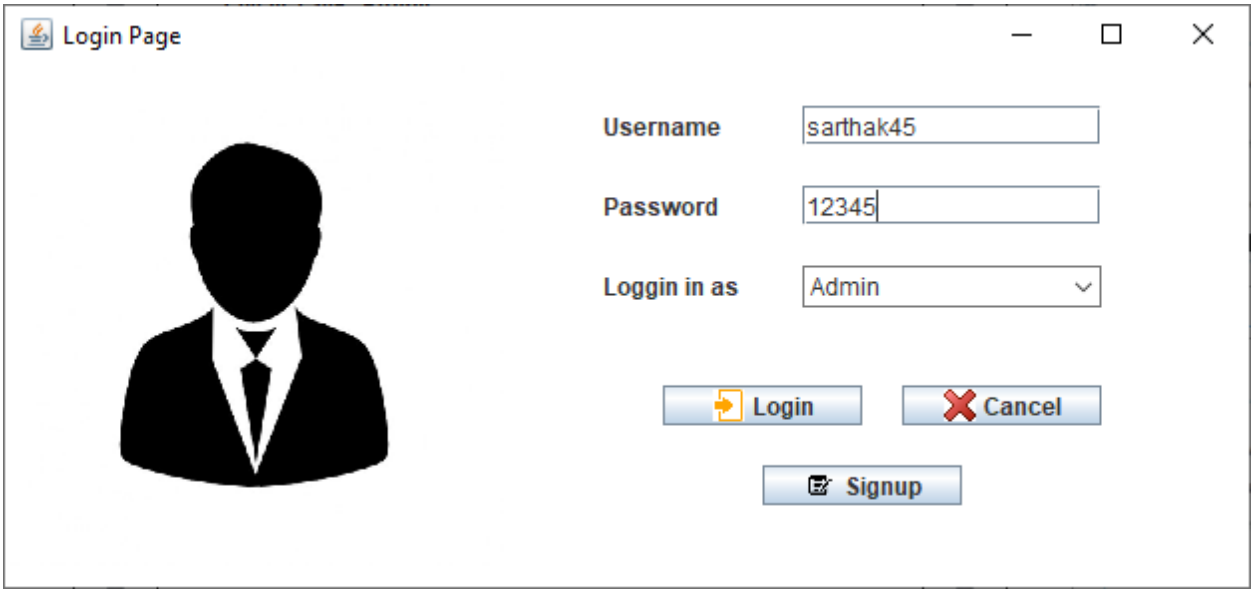
11) Update Customer Details form:



12) View Customer Information Form:

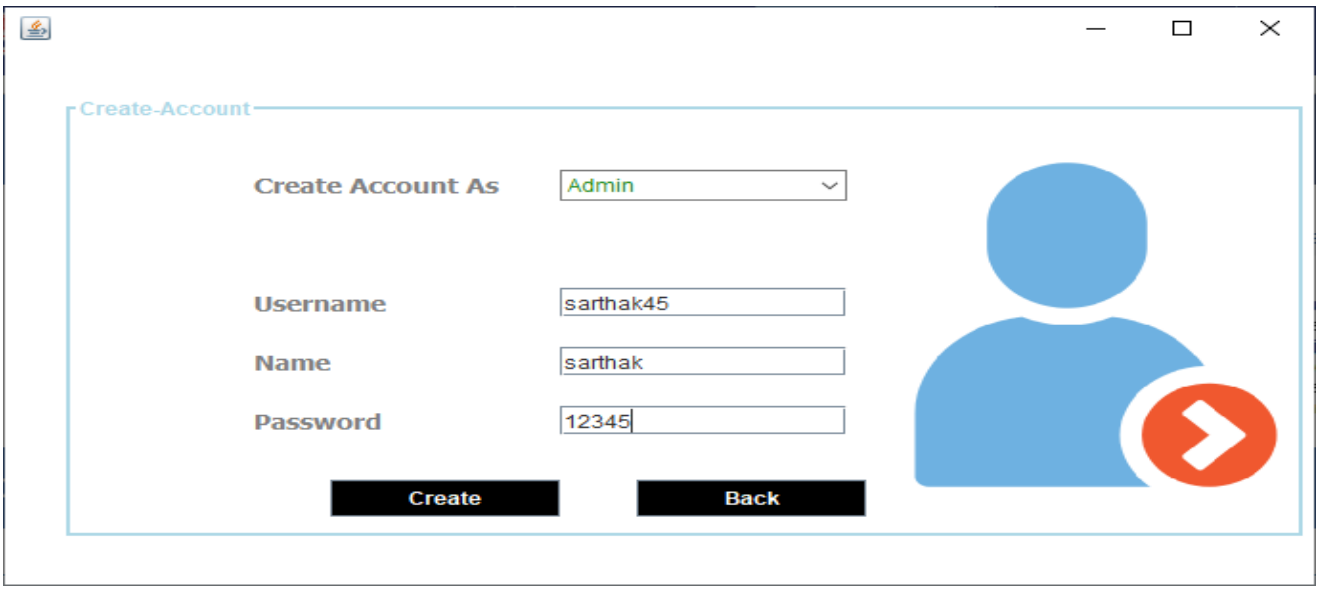
4.3 OUTPUT DESIGN :

1) Successful Login: Admin

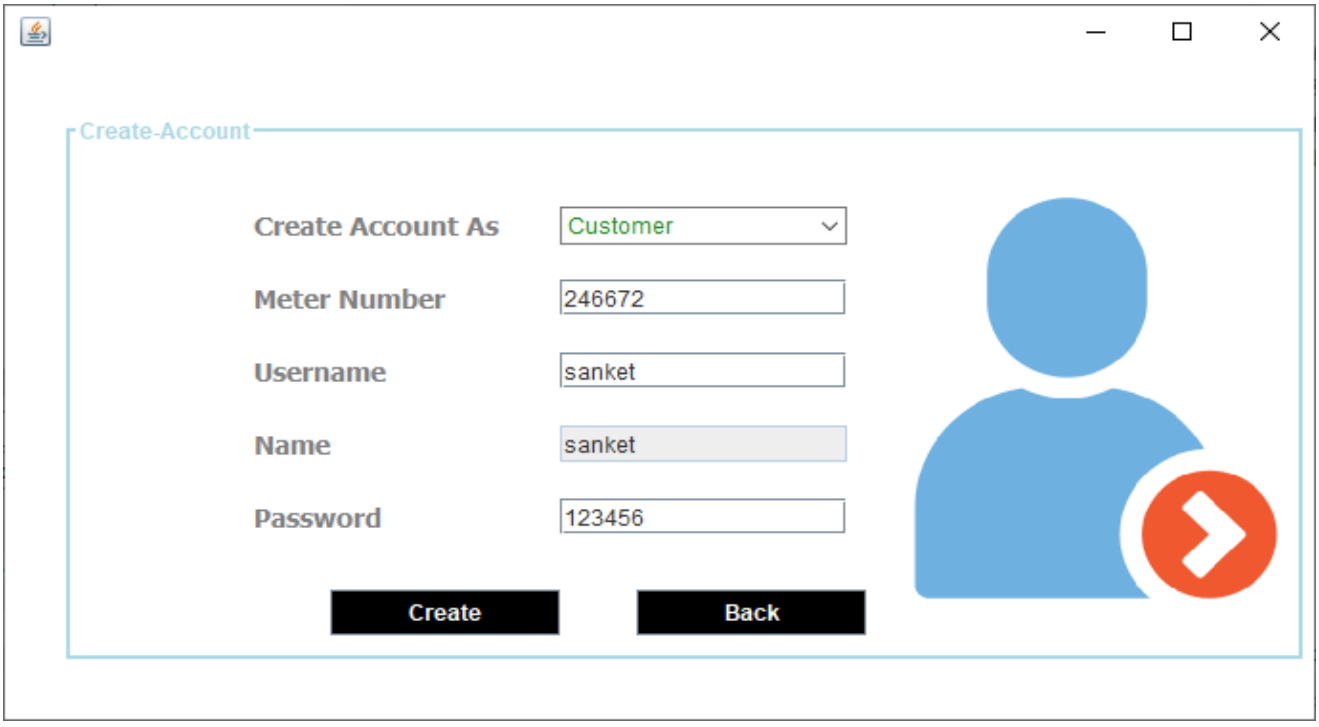


2) Successful Login: customer

3) Sign up form: Admin

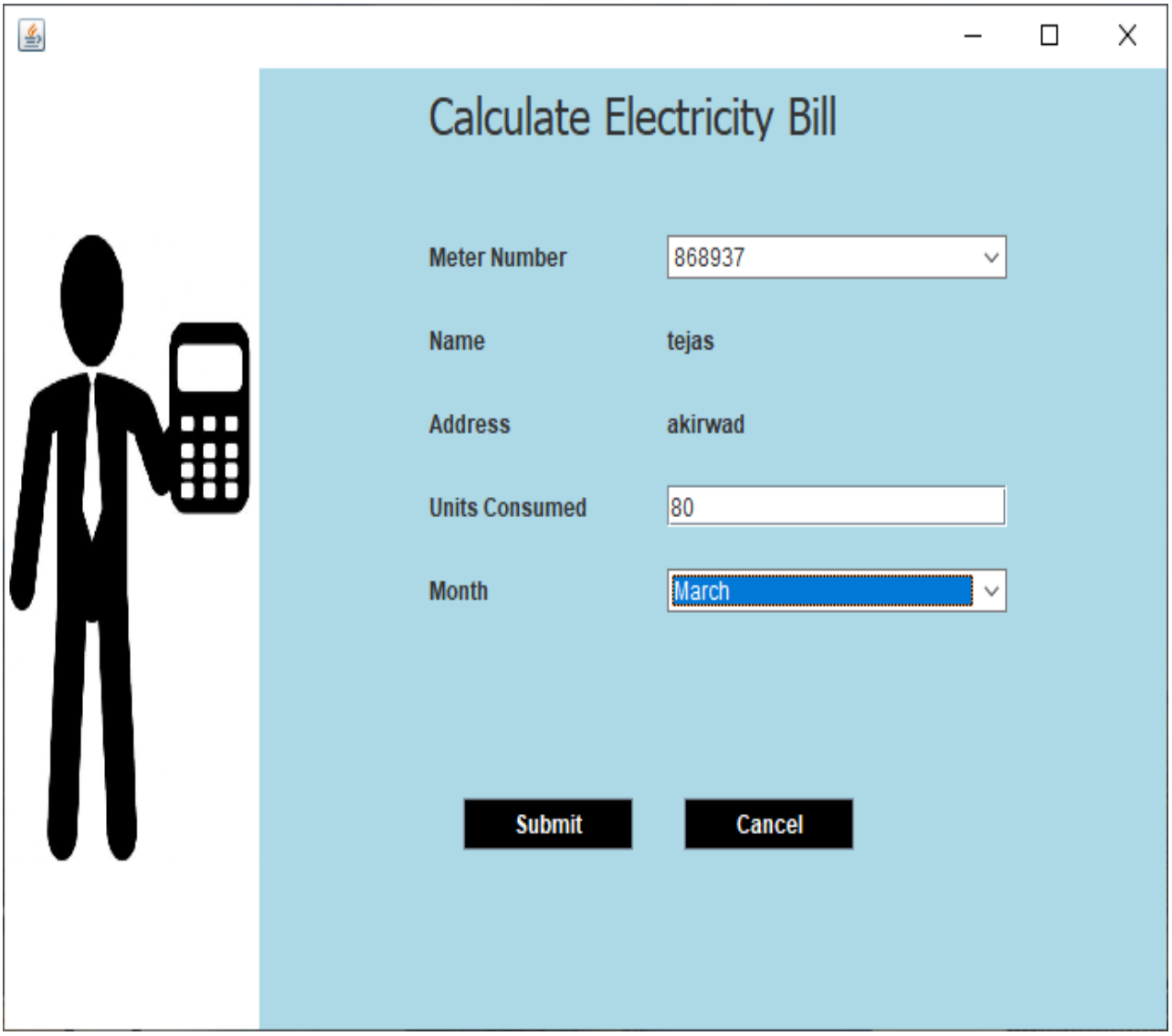


4) Sign up page: Customer



5) Add New Customer Page:

6) Calculate Electricity Bill

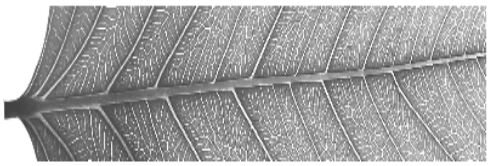


:

7) All information About Customer in the form of Report:

Electricity Billing System

Customer Details Form



name	meter_no	address	city	state	email	phone
ujef	43913	kothali	jsp	mh	uj@gmial.com	1234567890
sanket	246672	aa	ss	pp	sanks45@gm	9689809977
Rohit	84034	Aalte	Hatkalgale	MH	rohit@gmail.	7765849946
tejas	868937	akirwad	jdp	mh	Tehjas@Gmai	384578923
	642699					

8) All Information About meter In the Form of Report:

Electricity Billing System

Meter Information

meter_no	meter_location	meter_type	phase_code	bill_type	days
43913	Outside	Electric Meter	011	Normal	30
246672	Outside	Electric Meter	011	Normal	30
84034	Inside	Smart Meter	022	Industial	30
868937	Outside	Electric Meter	022	Normal	30

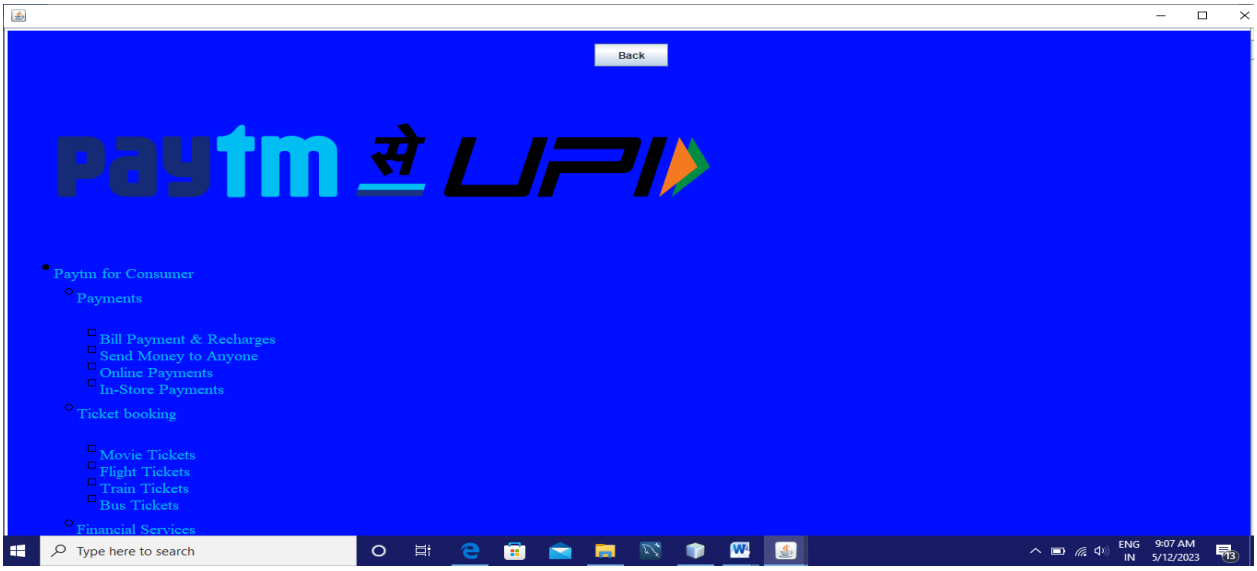
9) All information About billing in the form of Report:

Electricity Billing

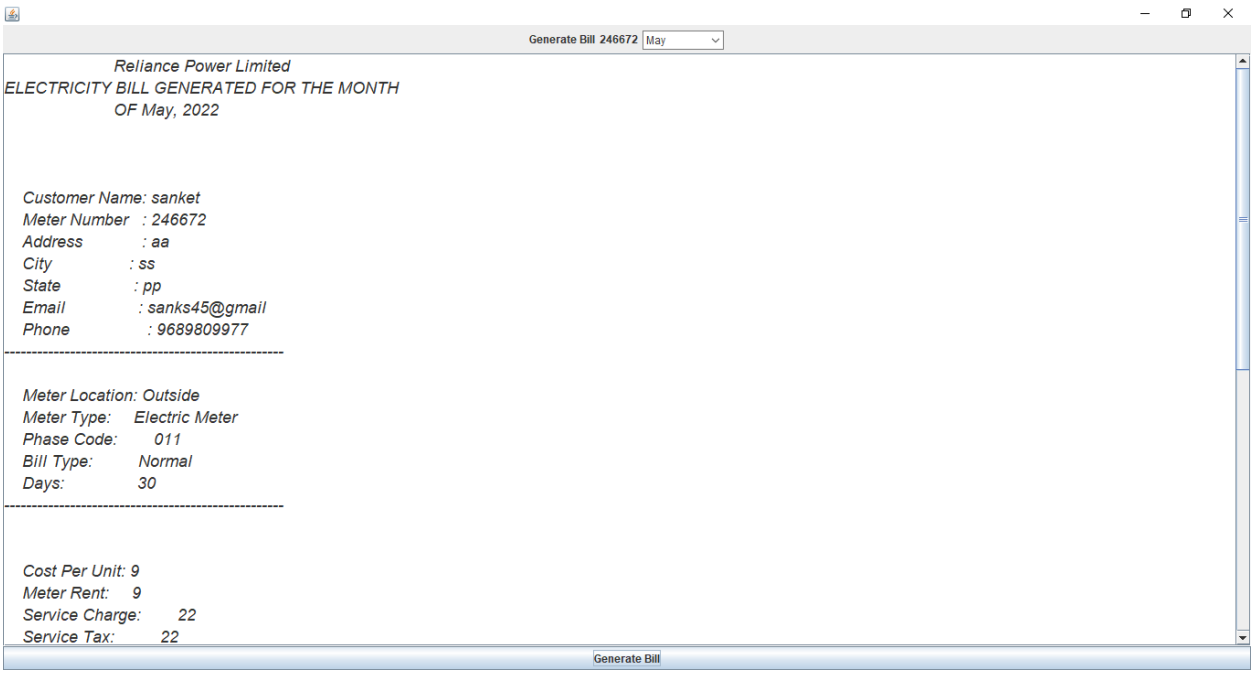
Bill Form

meter_no	month	units	totalbill	status
43913	January	50	600	Not Paid
246672	January	50	600	Paid
84034	March	45	555	Paid
84034	March	45	555	Paid
868937	May	60	690	Paid

10) Paytm link:



11) Generate Bill Form:



5 IMPLEMENTION :

5.1 Hardware Interface

- Hard disk : 1TB
- RAM : 4.00 GB
- Processor : Intel(R) Core(TM) i3-1035G1
- System type : 64 bit
- Operating System : Windows 10

5.2 Software Interface

- Front End : Apache NetBeans IDE 8.2
- Back End : MySQL in XAMPP 3.3.0

5.3 User Guideline:

When you run the software first there are login window. The Software are for only Admin Use for this reason Username and Password can be provided by developers.

5.4 Installation Process -

In Order to complete the installation of this software you will need thefollowing softwares installed on your system:

- Microsoft Windows or Microsoft Windows XP , 7 ,10
- NetBeans IDE framework-8.2
- MySQL in XAMPP 3.3.0

6. CONCLUSION :

After all the hard work is done for electricity bill management system is here. It is a software which helps the user to work with the billing cycles, paying bills, managing different DETAILS under which are working etc.

This software reduces the amount of manual data entry and gives greater efficiency. The User Interface of it is very friendly and can be easily used by anyone.

It also decreases the amount of time taken to write details and other modules.

After all the hard work is done for electricity bill management system is here. It is a software which helps the user to work with the billing cycles, paying bills, managing different DETAILS under which are working etc.

This software reduces the amount of manual data entry and gives greater efficiency. The User Interface of it is very friendly and can be easily used by anyone.

It also decreases the amount of time taken to write details and other modules.

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