"*Electricity Billing System*"

A MINI- PROJECT REPORT ON

Submitted in partial fulfillment of the requirements

For the degree of

Bachelor of Engineering

In

Information Technology

by

Name of the Student-1:Jaydev T.Rathod Roll No.-18IT1024
Name of the Student-2:Girish Rathod Roll No.-18IT1001
Name of the Student-3:Sanket Rohokale Roll No.-18IT1063
Name of the Student-3:Gopi Pogul Roll No.-18IT1028

Supervisor

Nilima Dongre

Department of Information Technology

Dr. D. Y. Patil Group's

Ramrao Adik Institute of Technology

Dr. D. Y. Patil Vidyanagar, Sector 7, Nerul, Navi Mumbai 400706.
(Affiliated to University of Mumbai)

(2020)

D Y PATIL
RAMRAO ADIK
INSTITUTE OF
TECHNOLOGY
NAVI MUMBAI

Ramrao Adik Institute of Technology

(Affiliated to the University of Mumbai)
Dr. D. Y. Patil Vidyanagar,Sector 7, Nerul, Navi Mumbai 400706.

CERTIFICATE

This is to certify that,Mini Project entitled

"Analog Clock using JavaScript"

is a bonafide work done by

Student Names

1.**Jaydev T.Rathod**
2.**Girish Rathod**
3.**Sanket Rohokale**
4.Gopi Pogul

and is submitted in the partial fulfillment of the requirement for the degree of

Bachelorof Engineering
in
Information Technology

to the
University of Mumbai

Supervisor
Prof.Nilima M.Dongre

Project Guide
Nilima Dongre

Head of the department
Dr. Ashish Jadhav

Certificate of Approval by Examiners

This Mini Project report entitled “Electricity Billing System ” is a bonafide work done by Student Names under the supervision of Prof.Nilima Dongre approved for the award of Bacheor Degree in Information Technology, University of Mumbai.

Examiners :

1. . . . . .

2. . . . . .

Supervisors :

1. . . . . .

2. . . . . .

Principal :

. . . . . .

Date :

Place :

Ramrao Adik Institute of Technology

DECLARATION

We declare that this written submission represents our ideas in our own words and where others' ideas or words have been included, we have adequately cited and referenced the original sources. We also declare that we have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in our submission. We understand that any violation of the above will be cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

Name and Roll No. of Students **Signature**

1. Jaydev Rathod
2. Sanket Rohokale
3.Girish Rathod
4.Gopi Pogul

Date:
Place:

ACKNOWLEDGEMENT

The project “Electricity Billing System” is creative work of many minds. A proper synchronization between individual is must for any project to be completed successfully. One cannot imagine the power of the force that guides us all and neither can we succeed without acknowledging it.
We take this opportunity to express my profound gratitude and deep regards to our Guide **Nilima Dongre**, Department of the Information Technology Engineering for her or her exemplary guidance, monitoring and constant encouragement throughout the completion of this mini project.

We would like to express our gratitude to **Dr. Ashish Jadhav,** Head of the department, Information Technology Engineering for encouraging and inspiring us to carry out the project in the department lab. We take this privilege to express my sincere thanksare thankful to **Dr. Mukesh D. Patil, Principal RAIT,** for his constant support and motivation.

We also would like to thank all the staff members Department of the Information Technology Engineering for providing us with the required facilities and support towards the completion of the project.

Last but not the least we are thankful to our parents and friends for their constant Inspiration, encouragement and well wishes by which we have made a challenging project.

STUDENT- **JAYDEV RATHOD** (**18IT1024**) Signature

PREFACE

We take great opportunity to present this Mini Project report on "**Electricity Billing System** **"** and put before readers some useful information regarding our project.

We have made sincere attempts and taken every care to present this matter in precise and compact form, the language being as simple as possible. We are sure that the information contained in this volume certainly prove useful for better insight in the scope and dimension of this project in it true perspective.

The task of the completion of the project though being difficult was made quite simple, interesting and successful due to deep involvement and complete dedication of our group members.

TABLE OF CONTENTS

TABLE OF CONTENTS

ABSTRACT

Our project name is Electric Billing System . But the question that comes to our mind is what is exactly Electric Billing System?

- WHAT IS Electric Billing System?

Science and technology with all its fascinating advancements has been taking human life standards to the next level. The whole world will be literally jammed without these innovations. This project is an innovation, which makes the way of paying electricity bill simple compared to other existing projects. This project has been implemented using Shell Script as front end and Saving the data using Script commands as back end. The purpose of the project is to build an application program to reduce the manual work for managing the amount of units consumed by the customers and generating the electricity bill according to the type of customer – individual or commercial. It displays the details of the customers, units consumed by them and bill history. It enables them pay their bill if not paid. The date of payment will be updated while paying the bill. It maintains error free database and easily incorporates the future developments and charges.

The Power Billing System Project Report basically deals with the billing system.

Energy Billing System Project is an Executive Information System that could be used for entering, calculating and monitoring the Billing details of the Electricity.

Introduction The project "Billing system" is an application to automate the process of ordering and billing of a "Departmental store" .

CHAPTER -1

INTRODUCTION

INTRODUCTION

1. INTRODUCTION TO SCRIPTING LANGUAGES

Usually shells are interactive that mean, they accept command as input from users and execute them. However some time we want to execute a bunch of commands routinely, so we have type in all commands each time in terminal. Shell scripts are similar to the batch file in MS-DOS. Each shell script is saved with .sh file extension eg . myscript.sh A shell script have syntax just like any other programming language. If you have any prior experience with any programming language like Python, C/C++ etc. it would be very easy to get started with it.

WHY PARTICULAR SCRIPTING LANGUAGE
->There are many reasons to write shell scripts –
->To avoid repetitive work and automation
->System admins use shell scripting for routine backups System monitoring
->Adding new functionality to the shell etc.

3. PROBLEM STATEMENTS

->Prone to costly errors, a single mistake can change the command which might be harmful
->Slow execution speed
->Design flaws within the language syntax or implementation
Not well suited for large and complex task

4. OBJECTIVES

•The command and syntax are exactly the same as those directly entered in
•command line, so programmer do not need to switch to entirely different syntax:
•Writing shell scripts are much quicker
•Quick start

CHAPTER -2

LITERATURE SURVEY

2.1 Motivation

The present power usage reading is made manually by moving to the consumer location. This requires large numbers of labour operators &long working hours to accomplish task.Manual billing is sometimes restricted and delayed by bad weather conditions.The printed billing also has the tendency to lost somewhere.Smart Electricity Billing system has been proposed as an innovative solution aimed at facilitating affordability and reducing the cost of utilities.This drawback is reduced by using a smart electricity billing which is based on the "Get your electricity bill in your currency daily" The present system measures the power output which is appearing by the meter.After getting the power consumption values the Our script processor will calculate bill amount according to the present tariff values & display to the user.

Smart Electricity Billing System has many advantages of both from suppliers as well as from the consumer's point below:

•No bill production in the form of paper.
•Load & demand side management.
•Daily ,monthly approximately budgeting due to the accurate Billing system.
•Shows the true cost of consumption.

All such are the reasons to develop this type of innovative Electricity Billing System

CHAPTER -3

PROPOSED SYSTEM

3.1 HARDWARE AND SOFTWARE REQUIREMENT

->Shell can be accessed by user using a command line interface. A special program called Terminal in linux/macOS or Command

Prompt in Windows OS is provided to type in the human readable commands such as “cat”, “ls” etc. and then it is being execute. The result is then displayed on the terminal to the user. It will list all the files in current working directory in long listing format. Working with command line shell is bit difficult for the beginners because it’s hard to memorize so many commands. It is very powerful, it allows user to store commands in a file and execute them together. This way any repetitive task can be easily automated. These files are usually called batch files in Windows and Shell Scripts in Linux/macOS systems

->Text Editor (gedit) is the default GUI text editor in the Ubuntu operating system. It is UTF-8 compatible and supports most standard text editor features as well as many advanced features. These include multilanguage spell checking, extensive support of syntax highlighting, and a large number of official and third party plugins.
gedit is suited for both basic and more advanced text editing .
In this editor, we have written a source code of this project.
Command Line Tips
Opening gedit via the command line allows the user to take advantage of several options unavailable from the GUI menu. If a path is not included in the startup command, gedit will look for the file in the current directory. If the file is not found, gedit will open a blank file with the file name entered on the command line.

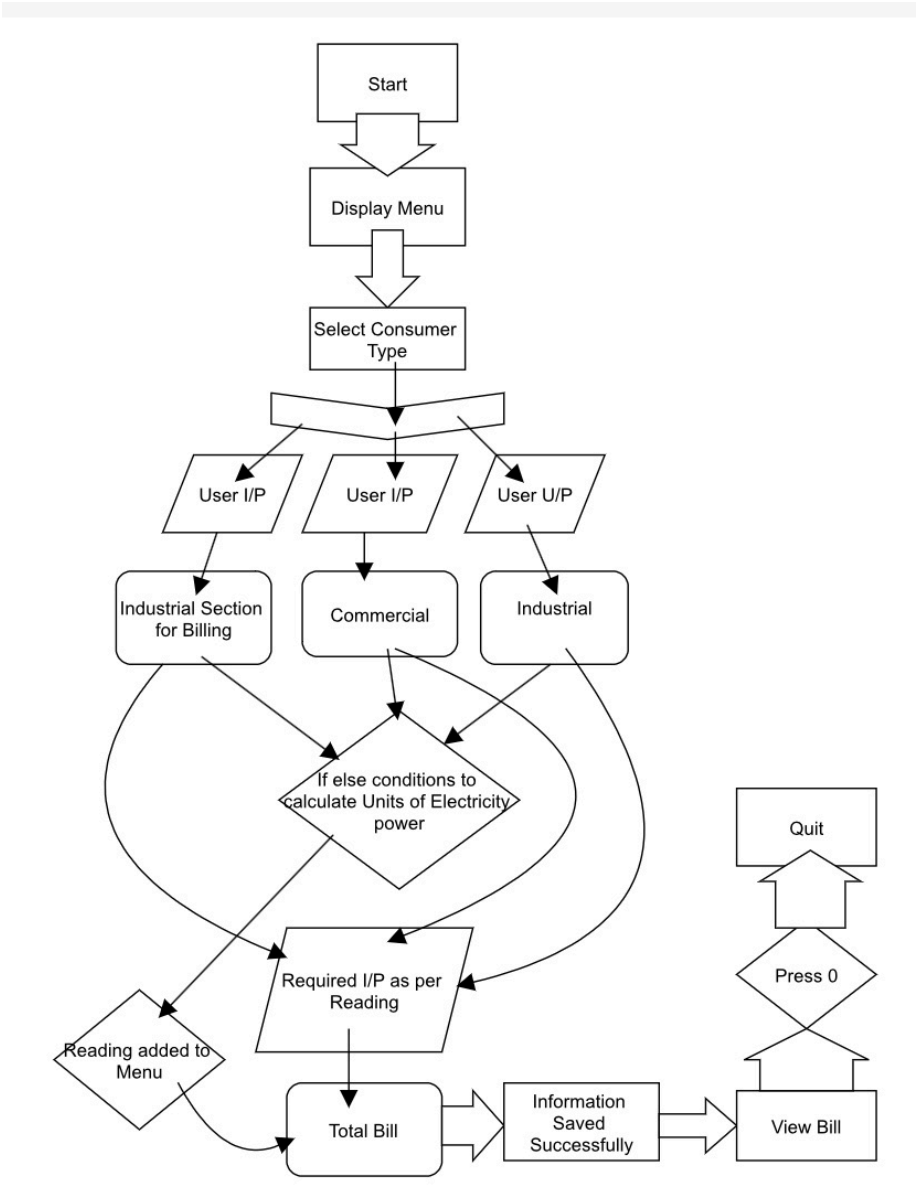
->Command-line Interface "Terminal"
The Terminal application is a command-line Interface (or shell). By default, the Terminal in Ubuntu and macOS runs the so-called

bash shell, which supports a set of commands and utilities; and has its own programming language for writing shell scripts.

CHAPTER –4

IMPLEMENTATION

System Block Diagram:



4.2 MODULE DESCRIPTION

In this project we have created smart electricity billing system that It displays the details of the customers, units consumed by them and bill history.

1)We have created consumer type viz.

a)Residential b)Commercial c)Industrial.

2)Then we can select consumer type where it can be form above options.

3)If we select Residential Consumer type then ,following things to do:

-Enter the consumer name

-Enter the consumer number

-Then we get the our required results of putting readings.

-We can save our records as a history.

-Then we have to enter the current month reading of units

-We have to enter the last month reading of units

-Then the we made a range of paying money as per the units

-In the Residential Type:

If units is measured between 0 to 30 then 40 Rs will

Be charged.

If units is measured between 0 to 100 and measured between 100 to 300 then paying scale will be 7 Rs. per units and 9 Rs. per units respectively ,we have set into this code.

-And further if unit is greater than 300 units then ,11Rs per unit will be charged.

-In this way, All the results will be gathered and finally it will

Be converted into the Total Bill by taking all of above Informations.

-Then ,Total Bill is able to display on the screen

-Now the displayed result will be saved by using shell command.

-If we put another next months record at time of making bill ,then previous month record or bill will be able to see because it was saved as history. So we can view previous any Bill.

4)In this way ,we have set the different conditions of measuring units that is the price range as per the measured units for different consumer types.

5) After selecting the another Consumer type we"ll have to follow the first three steps as we wrote above & "ll have to implement it.

4.3 CODE

Bill.sh

```
#!/bin/bash

while :
do

clear
```

```
echo ----------------------------------------------------------------
echo "$(tput setaf 4)              CALCULATE ELECTRICITY BILL $(tput sgr 0)"
echo ----------------------------------------------------------------
echo "CONSUMER TYPE"
echo "$(tput setaf 2)1)RESIDENTIAL$(tput sgr 0)"
echo "$(tput setaf 3)2)COMMERCIAL$(tput sgr 0)"
echo "$(tput setaf 1)3)INDUSTRIAL$(tput sgr 0)"
read -p " SELECT CONSUMER TYPE  " usr_cmd
case $usr_cmd in
1)echo "$(tput setaf 2)YOU ARE RESIDENTIAL USER!!$(tput sgr 0)"
echo Enter the Consumer Name-
read name
echo Enter Your 5 Digit Consumer Number-
read mno
search_query=$mno
echo "SEARCH RESULTS :"
echo ""
grep -i $search_query restro.log
echo Enter the Current month Reading-
read cmr
echo Enter the Last month reading-
read lmr
unit=$(expr $cmr - $lmr)
if [ $unit -eq 0 ] && [ $unit -le 30 ]
then
 charge=40
elif [ $unit -gt 0 ] && [ $unit -le 100 ]
then
 charge=$(expr $unit \* 7)
elif [ $unit -gt 100 ] && [ $unit -le 300 ]
then
 charge=$(expr $unit \* 9)
elif [ $unit -gt 300 ]
then
 charge=$(expr $unit \* 11)
fi
echo ---------------------------------------
echo '      ELECTRICITY BILLING            '
echo ---------------------------------------
echo "CONSUMER NAME        : $name"
echo "CONSUMER NUMBER      : $mno"
echo "CURRENT MONTH READING : $cmr"
echo "LAST MONTH READING    : $lmr"
```

```
echo "UNIT                : $unit"
echo "$(tput setaf 4)TOTAL BILL          : ₹$charge $(tput sgr 0)"
echo "----------------------------------------"
echo "$mno : $name : $unit" >> restro.log
echo "saved succesfully"

;;

2)echo "$(tput setaf 3)YOU ARE A COMMERCIAL USER!! $(tput sgr 0)"

echo Enter The Consumer Name-
read name
echo Enter the 5 Digit Consumer Number-
read mno
search_query=$mno
echo "SEARCH RESULTS :"
echo ""
grep -i $search_query restro.log
echo Enter the Current month Reading-
read cmr
echo Enter the Last month reading-
read lmr
unit=$(expr $cmr - $lmr)
if [ $unit -gt 0 ] && [ $unit -le 200 ]
then
 charge=$(expr $unit \* 12   )
elif [ $unit -gt 200 ]
then
charge=$(expr $unit \* 15 )
fi
echo ----------------------------------------
echo '       ELECTRICITY BILLING            '
echo ----------------------------------------
echo "CONSUMER NAME              : $name"
echo "CONSUMER NUMBER      : $mno"
echo "CURRENT MONTH READING : $cmr"
echo "LAST MONTH READING    : $lmr"
echo "UNIT                : $unit"
echo "$(tput setaf 4)TOTAL BILL          : ₹$charge$(tput sgr 0)"
echo ----------------------------------------
echo "$mno : $name : $unit" >> restro.log
echo "saved succesfully"
;;
```

```
3)echo "$(tput setaf 1)YOU ARE A INDUSTRIAL USER!!$(tput sgr 0)"

echo Enter the Consumer Name-
read name
echo Enter the 5 Digit Consumer Number-
read mno
search_query=$mno
echo "SEARCH RESULTS :"
echo ""
grep -i $search_query restro.log
echo Enter the Current month Reading-
read cmr
echo Enter the Last month reading-
read lmr
unit=$(expr $cmr - $lmr)
if [ $unit -gt 0 ] && [ $unit -le 1000 ]
then
 charge=$(expr $unit \* 17 )
elif [ $unit -gt 1000 ]
then
charge=$(expr $unit \* 20  )
fi
echo ----------------------------------------
echo '       ELECTRICITY BILLING            '
echo ----------------------------------------
echo "CONSUMER NAME        : $name"
echo "CONSUMER NUMBER      : $mno"
echo "CURRENT MONTH READING : $cmr"
echo "LAST MONTH READING    : $lmr"
echo "UNIT                  : $unit"
echo "$(tput setaf 4)TOTAL BILL           : ₹$charge $(tput sgr 0)"
echo ----------------------------------------
echo "$mno : $name : $unit" >> restro.log
echo "saved succesfully"
;;


*)
echo "INVALID OPTION";;

esac;
```

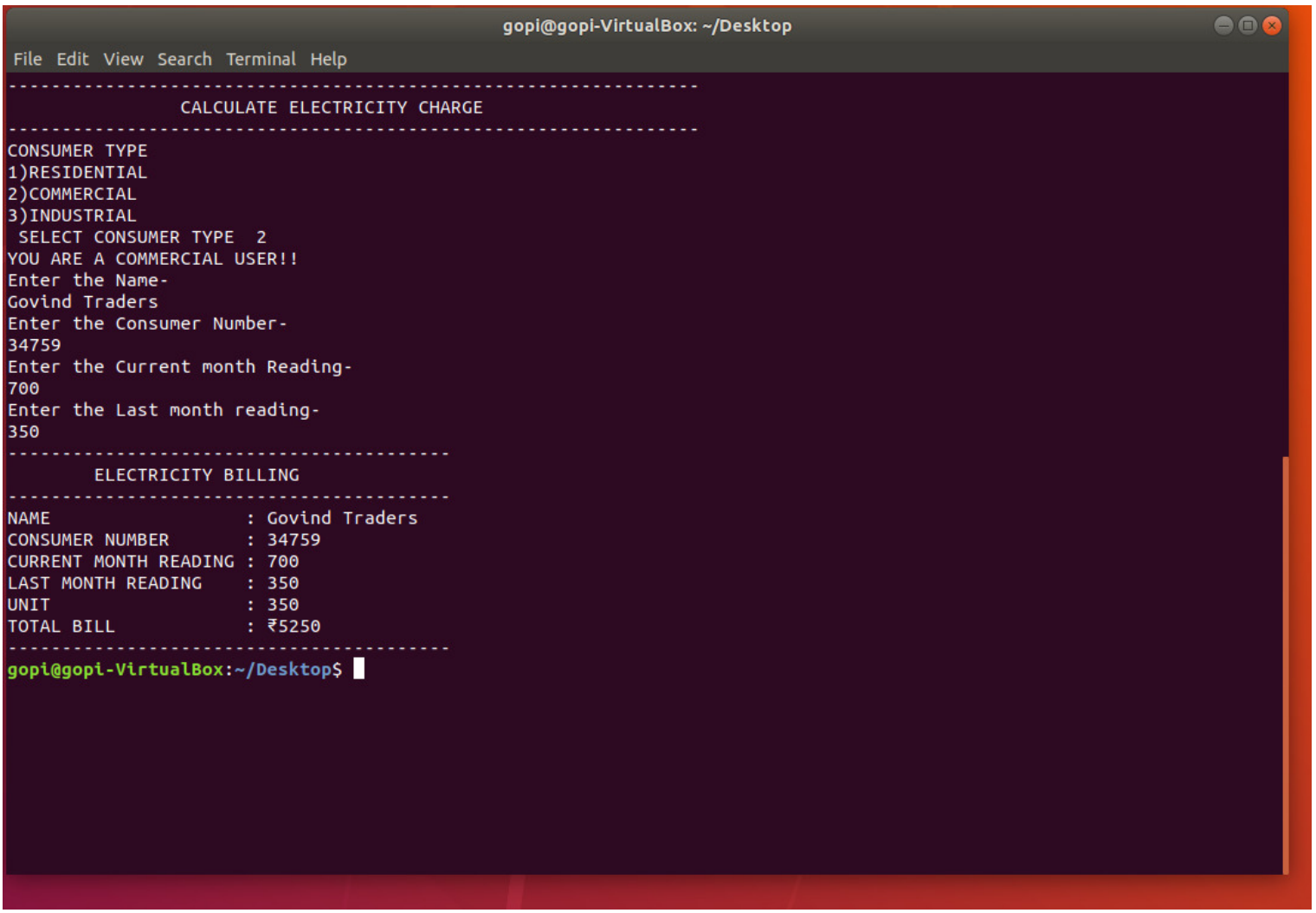
```
read -p "Press 0 to quit , anything else To Repeat " confirm_exit
if [ $confirm_exit -eq 0 ]
then break
fi
done
```

CHAPTER –5

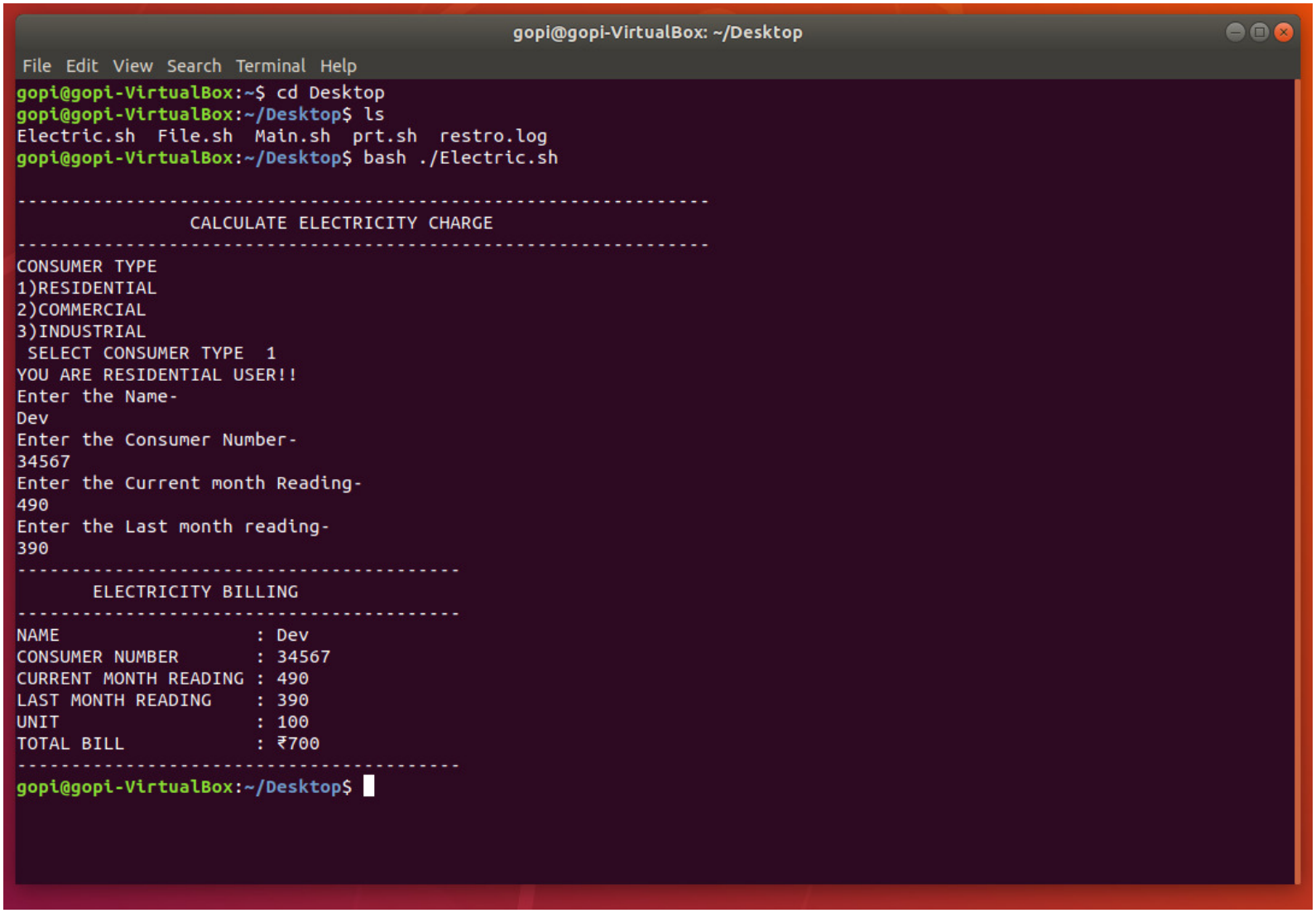
RESULT

Output Snapshot of working Electricity Billing system :

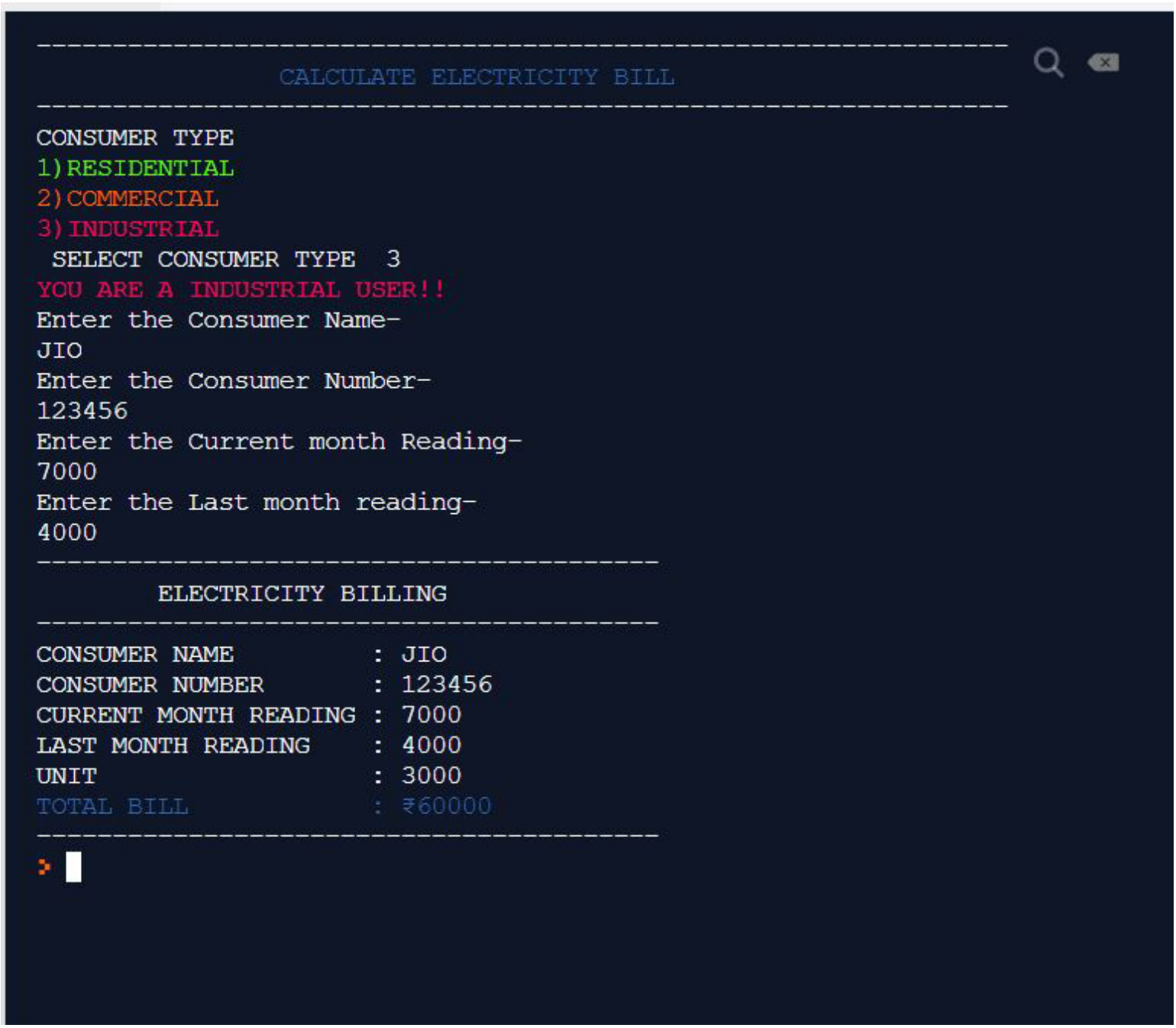
Commercial user billing output:



Residential user billing Output:



Industrial User billing output:



CHAPTER –6

CONCLUSION AND FUTURE SCOPE

Conclusion:

Electricity Bill Management System using Shell script has been developed with the help of Text Editor and Terminal In ubuntu effectively. It is simple and user friendly. It has wide scope for future expansion. All the manual as well as paper works can be fully eliminated in the billing branch. The accuracy and reliability are surely increased. It makes sure that unauthorized personal cannot execute this program. This system provides secured processing without any threats

Future scope:

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 departments under which employees 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.

6.3 REFERENCES

- **www.google.com**
- **www.wikipedia.org**
- **www.tutorialpoint.com**
- **www.w3schools.com**
- **www.youtube.com**