PES UNIVERSITY
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100 Ft. Road, BSK III Stage, Bengaluru – 560 085

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Course Title: Problem Solving with C Laboratory		
Course code: UE19CS152		
Semester : II sem	**Section:C**	**Team Id:6**
SRN:PES1UG19CS274	**Name:Mohammed Masood Owais**	
SRN:PES1UG19EC179	**Name:Neeraj Gupta**	
SRN:PES1UG19CS269	**Name:Mehul Deshlahra**	
SRN:PES2UG19CS320	**Name:Raunak Raj**	

PROJECT REPORT

Problem Statement
Electricity Management System

Description

Main Theme(Back Idea):

Due to rapid increase of population in the world by which the demand for a commodity increases automatically and by which the need for its maintain increases with a rapid rate.
Here we have made an attempt to customise the old electricity bill management system into a new one by bringing in the developing technology which helps the users to automatically keep check on there electricity bill at there work place/house on there finger tips.
Which can just save a lot of time for them and which can help them to store and check all there electricity bills of past years just in there phone, which reduces the burden to pile up papered bills into there home, which

can even reduce the consumption of paper which will help our earth to turn into a beautiful one.

Implementation(How our interface actually works?)

Here, we have made an attempt to develop an interface where the user(who uses the government supplied electricty), can just login to the ELECTRICITY DEPARTMENT website, or download the app, or just send sms or call to get the interface on there mobile screens.

When the user logins he gets a MENU asking the user to choose there required portal, they get [1.New entry//2.Bill//3.Information Page//4.forum to book a complain or review//5.EXIT].

The user can then chose one among the five options.

1. If he selects/clicks/enters 1 then he gets a portal to enter all his/her details i.e., meter number, name, phone number, address, units consumed. After entering all this he gets the MENU back and he can then select 2 to download a soft copy of his/her bill.
2. When the user selects/clicks/enters 2 a soft copy of his/her bill is downloaded in his computer/phone. As the user enters all this details and downloads his/her bill a copy of all the users who downloaded there bills is saved in a text file(a.txt) which is a government end file i.e., only the department people can view it and by that file they get to know who all can access this platform and can produce or generate hard copy of bills who cannot access this platform(like rural people who don't have internet access), by this they can reduce there work and save a lot of paper and time.
3. When the user selects/clicks/enters 3, a file info.txt gets opened in the back end i.e, server end in READ mode , and that displays all the file contents i.,e., per unit charges and etc… on the users screen.
4. When the user selects/clicks/enters 4 a complain forum is opened which is a text file from back end(complain.txt). Here, he/she gets a new FORUM MENU where he can chose 1.To file a complain 2.To look at all complains(allowing this depends on the department) 0.EXIT. When the user selects/clicks/enters 1 in the forum menu he gets a plot to enter his meter number name and complain and its gets saved automatically to the file complain.txt as it is opened in APPEND mode. When the user selects/clicks/enters 2 in the forum menu he can just view all the complains and cannot edit any of those as the file complain.txt is opened in READ mode. When the user selects/clicks/enters 0 in the forum menu he/she exits the forum menu and comes back to the main menu.

0. When the user selects/clicks/enters 0 he exits out of the main portal, which ends the program in back server end.

C-concepts used

1.Structures

Used structures to read all the details of the users.

2.Functions

Used functions

calculate() - to calculate the bill amount on the units consumed.

billing() - to create a online bill in a text file format for the user which can be downloaded.

3.File Handling

Used file handling to handle all the entries, bills generated, login details, generating bills, providing information, filling complains and so on .

4.Dynamic Memory Allocation

Used to use the entered data by the user to make a back end copy for government and also to generate a bill at same time.

Learning Outcome

- Learnt to handel multiple files at once, like opening same file one outside the loop and one inside the loop in same or different modes and to handle the data according to the users need, which file to bas used when , which to close when, which leads and so on.(That can be observed in case 4 of our code i.e., in complain forums).
- Learnt that excel files do not easily respond or work with C programming instead they work with C++ and C#.
- Learnt that C is totally different from python when it comes to view the method it uses to store and write some data in the file. We cannot store all the data of various structure members using a single variable, so it gives us an idea that C programming is best suited for dynamic allocation of variables and memory specifically when we are using huge structures to store details and write those details into a file and use the same details to print the bill.This approach helps us to use the same data over and over again till it has scope.
- Leanrt to handel the functions with more than five parameter of different datatype, how to call them and all.
- Learnt to link structures, files and functions into one block and to make them work depending on each other.

Output Screenshots

Fig.1: Main Menu

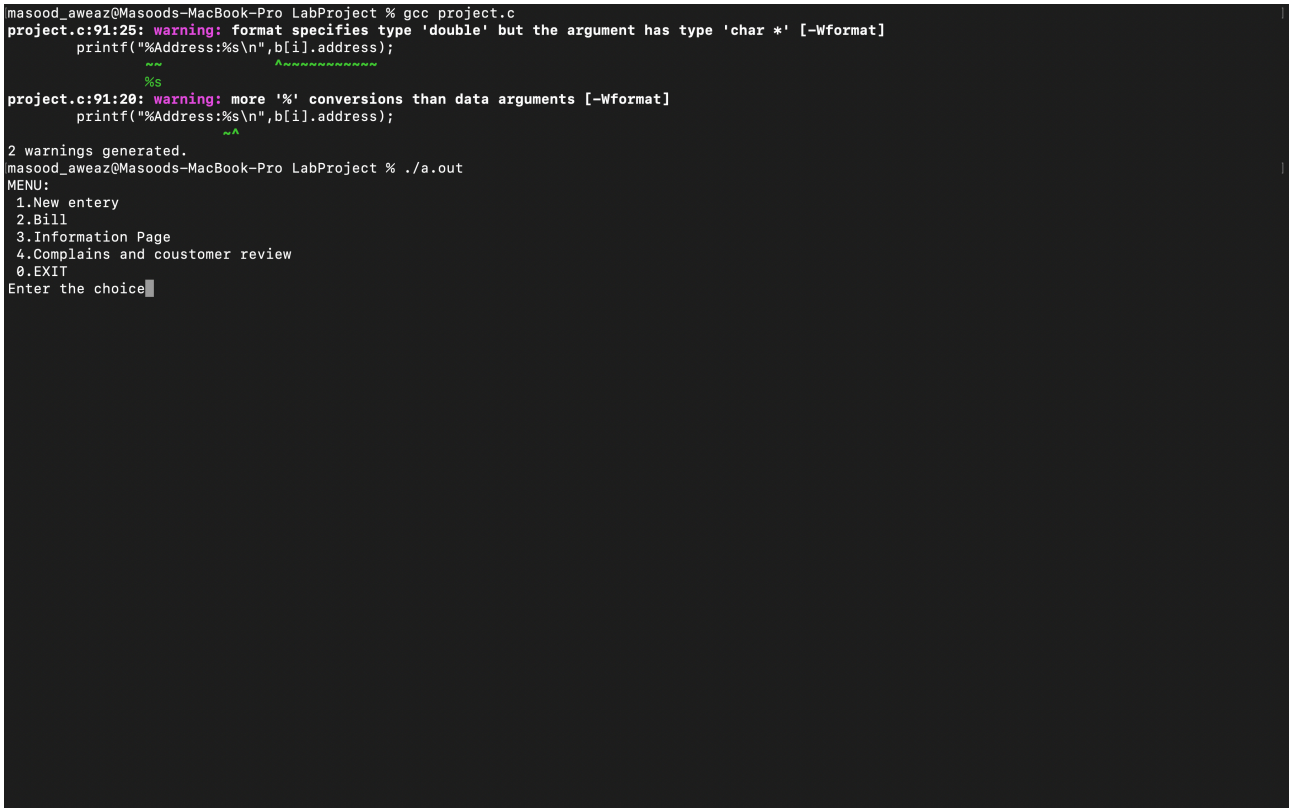

Fig.2: New Entry page

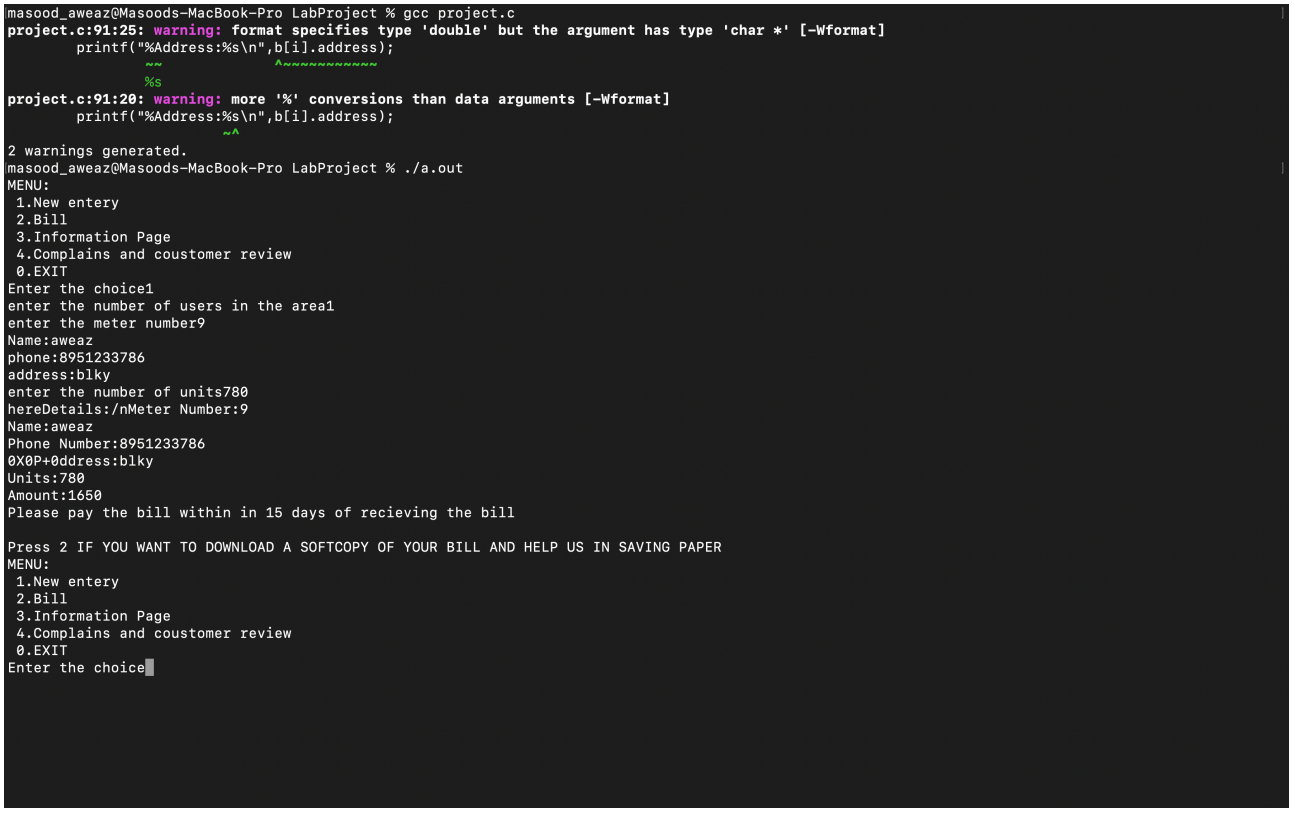

Fig.3: Generating bill / Downloading soft copy of bill

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Press 2 IF YOU WANT TO DOWNLOAD A SOFTCOPY OF YOUR BILL AND HELP US IN SAVING PAPER
MENU:
 1.New entery
 2.Bill
 3.Information Page
 4.Complains and coustomer review
 0.EXIT
Enter the choice2
GENERATING YOUR BILL
BILL IS DOWNLOADED...PLEASE KINDLY FIND THE ATTACHMENT
THANK YOU FOR SAVING A SHEET OF PAPERMENU:
 1.New entery
 2.Bill
 3.Information Page
 4.Complains and coustomer review
 0.EXIT
Enter the choice
```

Fig.4: Information page

```
THANK YOU FOR SAVING A SHEET OF PAPERMENU:
 1.New entery
 2.Bill
 3.Information Page
 4.Complains and coustomer review
 0.EXIT
Enter the choice3
Welcome to the information page of our ELECTRICITY DEPARTMENT

_______Charges Split Up__________

        First 100 units ------------> 1 rupee per unit

        Next 100 units -------------> 1.5 rupee per unit

        Next 100 units -------------> 2 rupee per unit

        Onward units ---------------> 2.5 rupee per unit


        ____SAVE ELECTRICITY ----- SAVE WORLD____

MENU:
 1.New entery
 2.Bill
 3.Information Page
 4.Complains and coustomer review
 0.EXIT
Enter the choice
```

Fig.5: Complain and Review Forum

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MENU:
 1.New entery
 2.Bill
 3.Information Page
 4.Complains and coustomer review
 0.EXIT
Enter the choice4
WELCOME TO THE CUSTOMER REVIEW FORUM
Press:
 1.To file a complain
 2.To view the recent complains
 0.EXIT
Enter your choice
1
Enter your meter number
9
Enter your nameaweaz
Enter the complainmeter_fault
Your Complain is filled

Press:
 1.To file a complain
 2.To view the recent complains
 0.EXIT
Enter your choice
```

Fig.6: All Complains

```
Press:
 1.To file a complain
 2.To view the recent complains
 0.EXIT
Enter your choice
2
Meter Number:70
 Name:aweaz
 Complain:ntg
Meter Number:89
 Name:owais
 Complain:hello
Meter Number:56
 Name:mehul
 Complain:pes
Meter Number:69
 Name:neeraj
 Complain:ahhh
Meter Number:1
 Name:masood
 Complain:oh
Meter Number:9
 Name:aweaz
 Complain:losse
Meter Number:9
 Name:connection
 Complain:2
Meter Number:56
 Name:ronny
 Complain:cuts
Meter Number:9
 Name:aweaz
 Complain:shorting
Meter Number:9
 Name:aweaz
 Complain:shocks
Meter Number:9
 Name:aweaz
 Complain:meter_fault
Press:
 1.To file a complain
 2.To view the recent complains
 0.EXIT
Enter your choice
```

Fig.7: EXIT

```
Press:
 1.To file a complain
 2.To view the recent complains
 0.EXIT
Enter your choice
0
MENU:
 1.New entery
 2.Bill
 3.Information Page
 4.Complains and coustomer review
 0.EXIT
Enter the choice0
masood_aweaz@Masoods-MacBook-Pro LabProject %
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Name and Signature of the Faculty

Rachana B.S