Green University of Bangladesh

Department of Computer Science and Engineering (CSE)

Faculty of Sciences and Engineering

Semester: (Summer, Year: 2022), B.sc in CSE (Day)

Lab Project Report

Course Title: Structured Programming Lab

Course Code: CSE 104 Section: DK -221

Lab Project Name: Electricity Billing System.

Student Details

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Submission Date: 11 – 09 - 2022

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[For Teachers Use Only: **Don't Write Anything inside this box]**

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Comments: . . . . . Date: . . . . . .

Introduction:

The electricity bill is the generated net payable amount charged by the electricity-providing company. The electricity bill is generated on the basis of the consumption of the electricity in units by the consumer. So that's why I choose to "Calculate Electricity Billing System" for this project.

Objective :

This research consists of several objectives as stated below –

- To develop a program to manage electricity billing for the administrator and customer.
- To collect the power consumptions information and integrated it with a centralized database system through this project.
- To calculate the electricity bill and generate a report on the power consumption information through this project.

Tools and Technologies :

Calculate the electricity biling system project is an application-based micro project that predicts the following month's electricity bill based on the appliances or loads used. Code Blocks IDE was used to write the code for this project.

Electricity consumer's unit chart price list :

Consumer's category	Unit	Price Tk
House Hold (Life line)	0 - 50	3.57 tk
General Consumers	0 - 75	4.19 tk
	76 - 200	5.72 tk
	201 - 300	6.00 tk
	301 - 400	6.34 tk
	401 - 500	9.94 tk
	Over 600	11.46 tk
Agriculture	Per Unit	4.19 tk
Construction	Per Unit	12.00 tk
Education & Charity	Per Unit	6.02 tk
Small Industries	Per Unit	10.24 tk
Commercial Buildings	Per Unit	12.36 tk

NOTE: If Bill exceeds Tk 1000 then a Surcharge of 15% will charged.

Code :

```
#include <stdio.h>
#include <string.h>
#include <conio.h>
void main()
{
   int conu, category;
   double pos_inf = 'INFINITY';
   float chg, surchg=0, gramt,netamt;
   char username[30], password[20];

   printf("\n\t\t\t\t---------ELECTRICITY   BILLING   SYSTEM---------
");

   printf("\n\n\t\t\t\t\tEnter your username: ");
   scanf("%s",&username);

   printf("\t\t\t\t\tEnter your password: ");
   scanf("%s",&password);

   if(strcmp(username,"saim")==0){
      if(strcmp(password,"221902353")==0){

      printf("\nWelcome.Login Success!\n");


      }else{
   printf("\nwrong password");
}
   }else{
   printf("\nUser doesn't exist");
}
```

```
printf("\n\t----------");
printf("\n\t\tConsumers Category");
printf("\n\t----------\n");
printf("[1]> House Holds.\n");
printf("[2]> General Consumers.\n");
printf("[3]> Agriculture.\n");
printf("[4]> Construction.\n");
printf("[5]> Education and Charity.\n");
printf("[6]> Small Industries.\n");
printf("[7]> Commercial Buildings.\n");

printf("\nSelect a particular category = ");
scanf("%d",&category);

switch(category)
{

case 1: //House holds

   printf("\nInput the unit consumed by the customer : ");
   scanf("%d",&conu);

   if (conu<=50)
      chg = 3.57;
   else
      printf("ERROR! YOU ARE OUT OF LIMIT!");
   break;

case 2: //General Consumers

   printf("\nInput the unit consumed by the customer : ");
   scanf("%d",&conu);
```

```
      if (conu<=75)
       chg = 4.19;

   else if (conu>=76 && conu<200)
      chg = 5.72;

   else if (conu>=201 && conu<300)
      chg = 6.00;

   else if (conu>=301 && conu<400)
      chg = 6.34;

   else if (conu>=401 && conu<600)
      chg = 9.94;

   else if (conu<pos_inf)
      chg = 11.46;

   break;


case 3: //Agriculture

   printf("\nInput the unit consumed by the customer : ");
   scanf("%d",&conu);

   if (conu<pos_inf)
      chg = 4.19;
   break;


case 4: //Construction
```

```
    printf("\nInput the unit consumed by the customer : ");
    scanf("%d",&conu);

    if (conu<pos_inf)
       chg = 12.00;
    break;


case 5: //Education & Charity

    printf("\nInput the unit consumed by the customer : ");
    scanf("%d",&conu);

    if (conu<pos_inf)
       chg = 6.02;
    break;


case 6: //Small Industries

    printf("\nInput the unit consumed by the customer : ");
    scanf("%d",&conu);

    if (conu<pos_inf)
       chg = 10.24;
    break;

case 7: //Commercial Building

    printf("\nInput the unit consumed by the customer : ");
    scanf("%d",&conu);
```

```
        if (conu<pos_inf)
          chg = 12.36;
       break;

}

gramt = conu*chg;
if (gramt>=1000)
       surchg = gramt*15/100.0;
   netamt = gramt+surchg;

   printf("\n----------------------------------\n");
   printf("Customer Name                :%s\n",username);
   printf("----------------------------------\n");
   printf("Unit Consumed                :%d\n",conu);
   printf("----------------------------------\n");
   printf("Amount Charges TK. %4.2f per unit
:%8.2f\n",chg,gramt);
   printf("----------------------------------\n");
   printf("Surcharge Amount             :%8.2f\n",surchg);
   printf("----------------------------------\n");
   printf("Net Amount Paid By the Customer
:%8.2f\n",netamt);

}
```

Result :

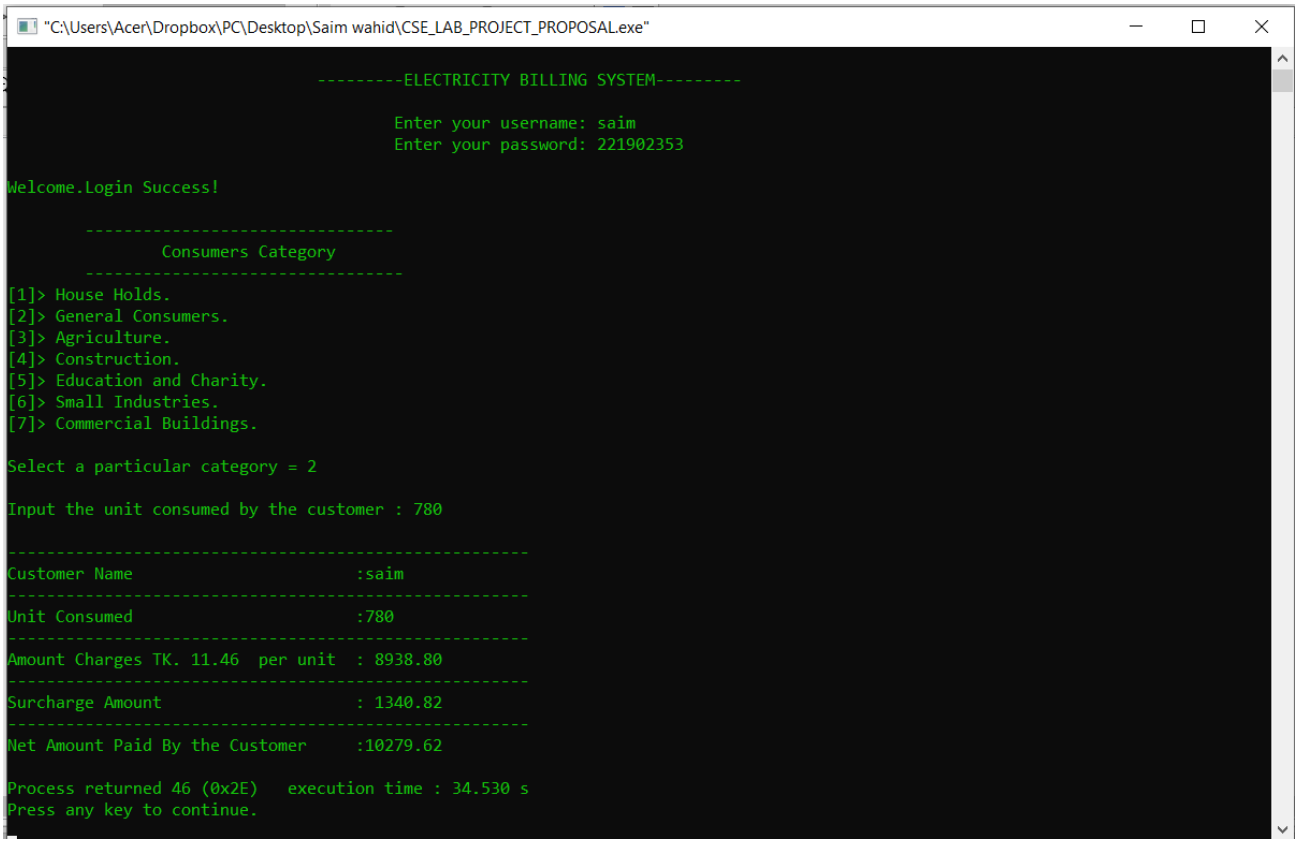

Figure : Electricity Billing System,

Conclusion :

- This project 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.
- I left all the options open so that if there is any other future requirement in the system by the user for the enhancement of the system then it is possible to implement them.

Problem domain & motivations :

- The main motivation of the electricity billing system is to manage the details of customers, connections, consumptions, and units.
- The project is totally built at the administrative end and thus only the administrator is guaranteed access.
- The purpose of the project is to build an application program to reduce the manual work for managing the customers, connections, bills reading.
- It tracks all the details about reading, consumption, units.