A Training Report On

**Residential/Society Management System**

Submitted in partial fulfilment of requirements for the award of the Degree of

**Bachelor of Technology**

In

**Computer Science & Engineering**

**Submitted By**

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# Under the guidance of

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# 

**Certificate from Coding Ninjas**



# ACKNOWLEDGEMENT

I express my deep gratitude to Mr. **Parikh Jain** and **Mr. Ankush Singla**(Teaching Associates at Coding Ninjas)for their valuable guidance and suggestion throughout my training**.** We are thankful to Mr.Varun Srivastava(Assistant Professor) for their valuable guidance.

**Udit Sisodia**

**(50451202718)**

## CANDIDATE’S DECLARATION

I hereby declare that the work presented in this report entitled “Residential/Society Management System”, in partial fulfilment of the requirement for the award of the degree **Bachelor of Technology** and submitted in **Department of Computer Science & Engineering, Bharati Vidyapeeth’s College of Engineering**, , **New Delhi** (**Affiliated to Guru Gobind Singh Indraprastha University**) is an authentic record of my own work carried out during the period from June – July 2019 under the guidance of Mr. **Parikh Jain** and **Mr. Ankush Singla**(Teaching Associates at Coding Ninjas)

The work reported in this has not been submitted by me for award of any other degree of this or any other institute.

## (Udit Sisodia)

## (En. No: 50451202718)

**Company Profile (Coding Ninjas)**

**Founded in 2016**

Coding Ninjas is one of the largest online tech education company in India, focusing on courses on **C++, Java, Python, Android, Machine Learning, Data science, Web-Dev, interview prep, tech aptitude etc**.

Coding Ninjas is the most preferred technical course platform for students in India and currently has a monopoly position across the college market in India. With the vision to teach millions in a scalable way, Coding Ninjas has pioneered a proprietary online teaching platform, which completely mirrors the offline classroom experience into online, and thus delivers a world-class learning experience to students.

With an in-house placement cell, Coding Ninjas is actively involved in sourcing relevant tech openings and showcasing Coding Ninjas students profiles to get them a rewarding career in tech.

# Week-wise Performance

|  |  |
| --- | --- |
| WEEK | CONTENT COVERED (In that week) |
| 1st | Prerequisites , intro. to competitive programming and Pointers |
| 2nd | Dynamic Allocation , Basic of Recursion ,  Time and Space Complexity |
| 3rd | STL , STL + Time and Complexity Assignment,  Searching and Sorting |
| 4th | Advance Recursion , Backtracking and  Assignment on Backtracking , Binary Search and Merge-Sort . |
| 5th | Project Development |
| 6th | Project Development |

**INTRODUCTION**

**Technology used C++**

# Created by Bjarne Stroustrup

The C++ programming language has a history going back to 1979, when Bjarne Stroustrup was doing work for his Ph.D. thesis. One of the languages Stroustrup had the opportunity to work with was a language called Simula, which as the name implies is a language primarily designed for simulations.

Shortly thereafter, he began work on "C with Classes", which as the name implies was meant to be a superset of the C language. His goal was to add object-oriented programming into the C language, which was and still is a language well-respected for its portability without sacrificing speed or low-level functionality. His language included classes and basic inheritance in addition to all the features of the C language.

The language also promises to provide support for several other useful mechanisms such as exception handling in the near future.

The first C with Classes compiler was called Cfront, which was derived from a C compiler called CPre. It was a program designed to translate C with Classes code to ordinary C.

In 1983, the name of the language was changed from C with Classes to C++. The ++ operator in the C language is an operator for incrementing a variable, which gives some insight into how Stroustrup regarded the language.

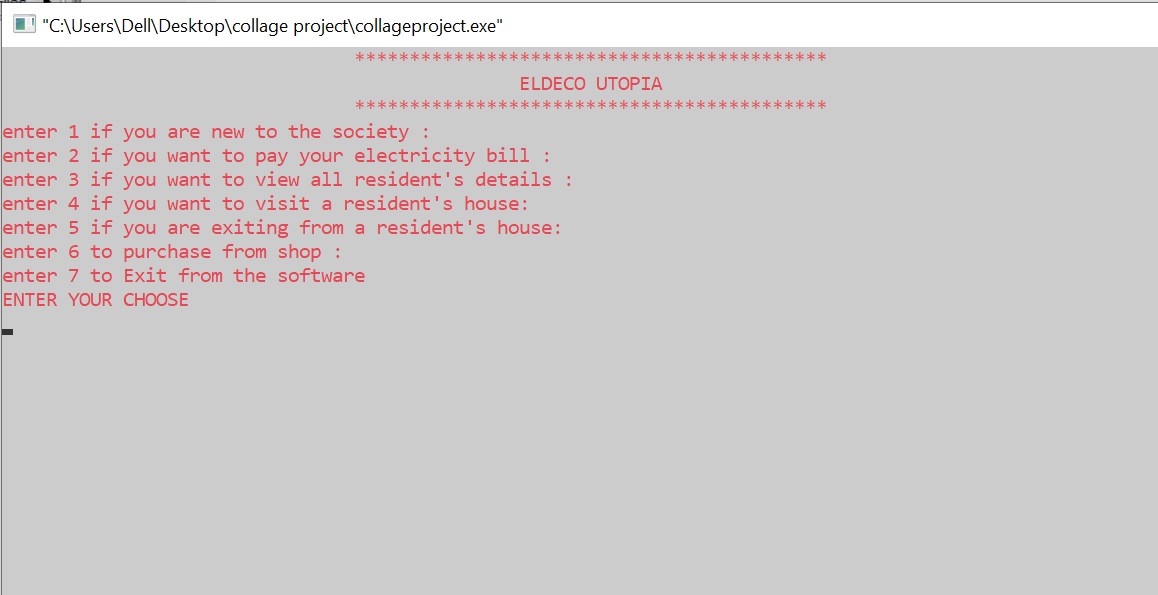
**Introduction Of my Project**

* This project is based upon the idea to provide digitalized services to residents and authorities in a residential area.
* This automic the various activities which are vital for the authorities and residents of that society.

**SERVICES FOR**

|  |  |
| --- | --- |
| **RESIDENTS** | **AUTHORITIES( admin )** |
| **Electricity bill payment** | Pullout records of all residents |
| **Automatic visitor parking payment** | * Automic Visitor parking payment collection * Storing visitor details * Calculating the charges of visitor parking automatically with respect to enter time ,exit time and number of vehicles. |
| **Purchase from Grocery Shop** | Securing the society from un-authorised enter |
|  |  |

# The user is given choices to do different tasks and to access services provided by the system

****

# 

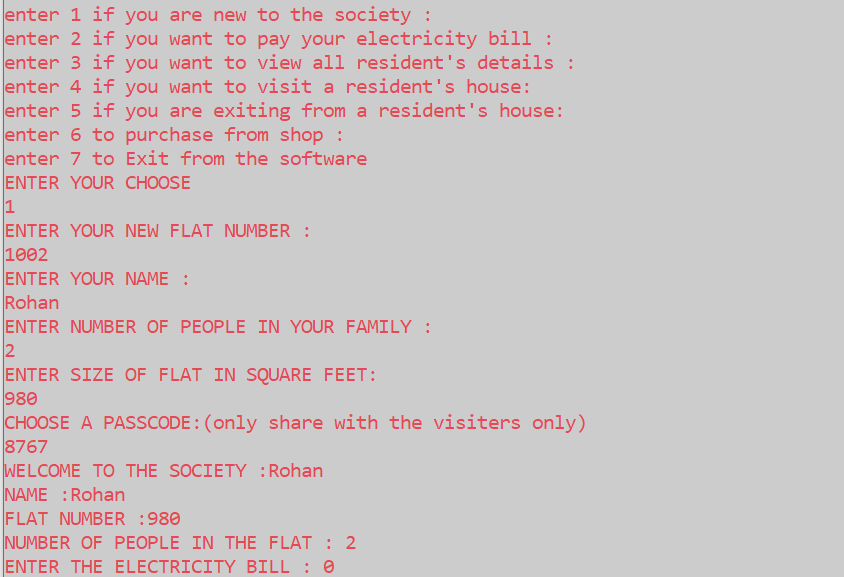
# Utilities :

# 1. New resident

# 

# { FlatNumber:1004 , Name : Udit , Number of People : 3 , Size of Flat : 1000 , Passcode : 9807(for flat 1004) }

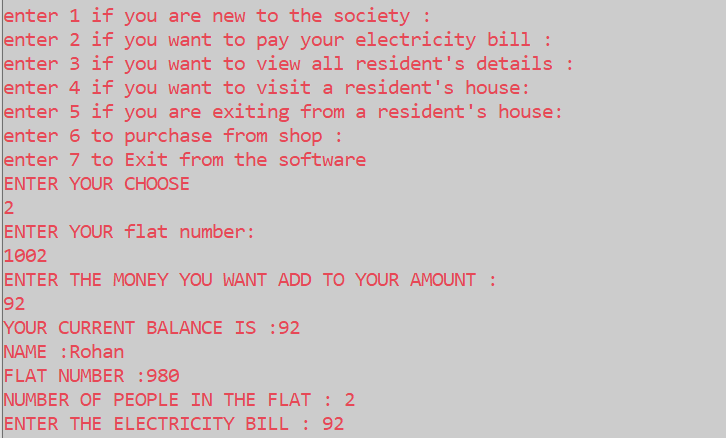
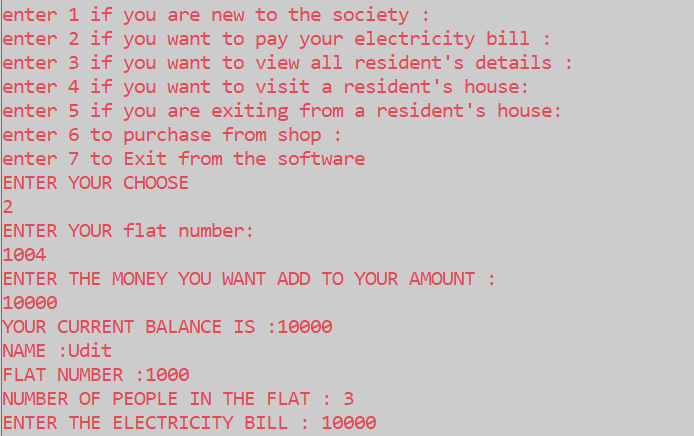
* When a new resident buy a house in the society ,he/she need to enter his/her details in the society’s software.
* To do so , he need to choose “1” then in case1 of switch(choose) statement is activated the case1 calls “install()” function of the class flat.
* In the install function you need to enter your details like flat number ,name of owner ,number of people in your family ,area of the flat ,and the it asks to set a **passcode** which will be used to do payments in the society .It stores all the above details in a array of objects.
* Then the software automatically initializes the electricity balance of that new resident to zero and the owner to fill the electricity bill which takes us to the next step.



# { FlatNumber:1002 , Name : Rohan , Number of People : 2 , Size of Flat : 980 , Passcode : 8767(for flat 1002) }

# 2. Paying the electricity bill / virtual currency of society

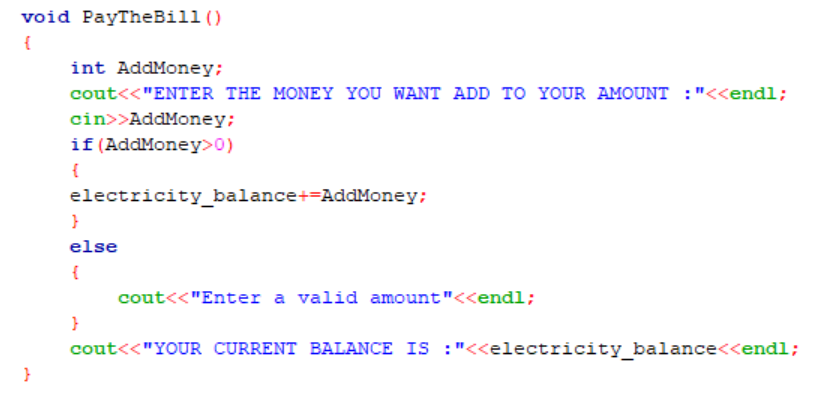
* First the software asks the user “Enter the money you want to add” , when the user enters the amount the software updated the current balance by adding entered value to it.
* This electricity balance can be used to pay for visitor parking and to purchase food items from the shop(explained the process later).
* Then from case2 switch statement calls an another function showYourDetails() which conforms the updating in the electricity balance by displaying important details with electricity balance.



Flat : 1004 Flat : 1002

As we can see that from the code that money can only be added not subtracted the or transvers to another account.

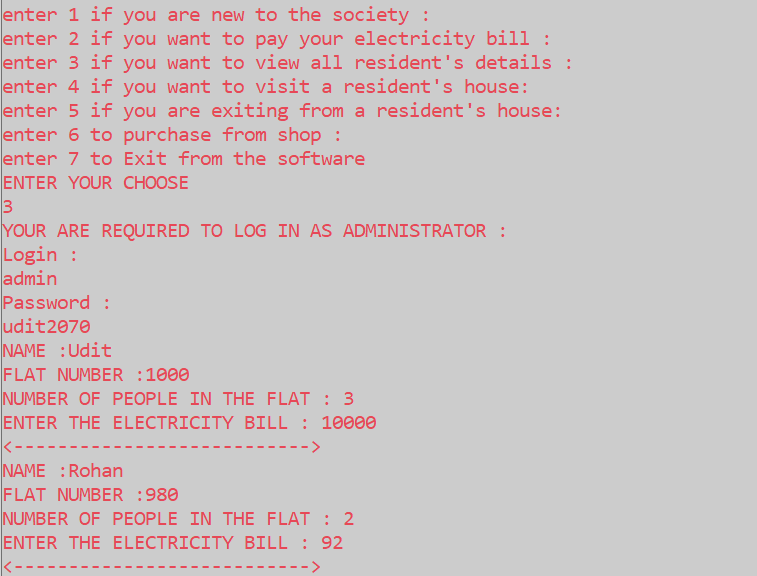
Only can be spend using the passcode for visitor parking charges and purchasing items from grocery shop.



# 3. View all resident’s details

# (only administrator can view)

* This functionality is only for the administrator of the society to keep a record of all resident’s details .
* To prevent unauthorized person to access it the user have to login as administrator with a secured login and password only know to administrator.



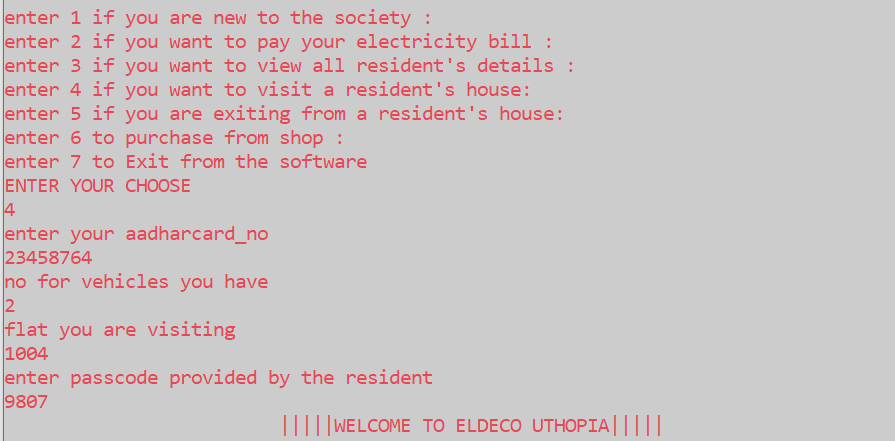
# 4. Visitor parking

## Case 4:

* If a visitor enter a society ,the software asks him to enter the following details

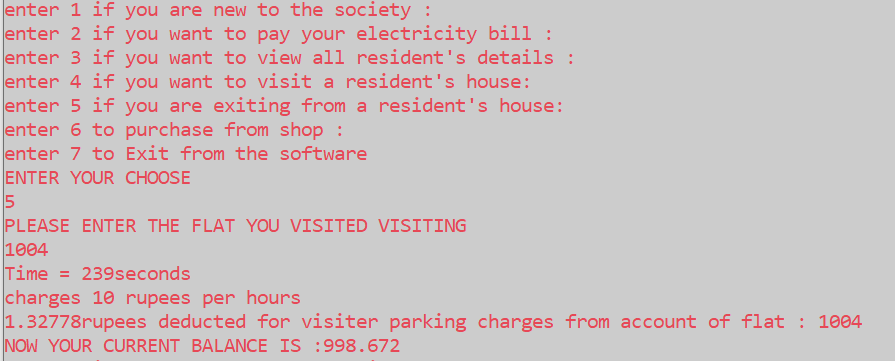
1. Enter your aadharcard number.
2. no for vehicles you have.
3. flat you are visiting
4. enter passcode provided by the resident(this passcode determines that visitor is approved by the resident of visiting flat )

* After getting all these details the system automatically records the entering time of the visitor using ‘time()’ in <ctime>.

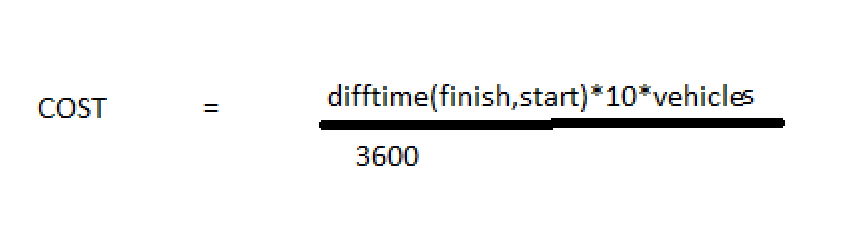


## Case 5:

* When a visitor exit the society ,the system automatically records the exiting time of the visitor .
* All these functionality are explicitly handled by the class visitor.
* Then it calculates the cost of visitor parking based upon the entry time ,exiting time and number of vehicles. The system records both the times automatically using **time(&start)** and **time(&finish)**.
* The calculates the difference between start and finish time using **difftime(finish,start)**



* Then the cost of the parking is calculation using this formula



# Purchasing from Grocery Shop

# The shop sells noodles, pasta, egg’s, soda(250 ml ) and candy.

# All the prices of 1 unit of an item are stored in an array called prices.

# the system ask what you want to buy and the quantity of that item , then it calculates the price of one type of item by multiplying price in array and quantity .

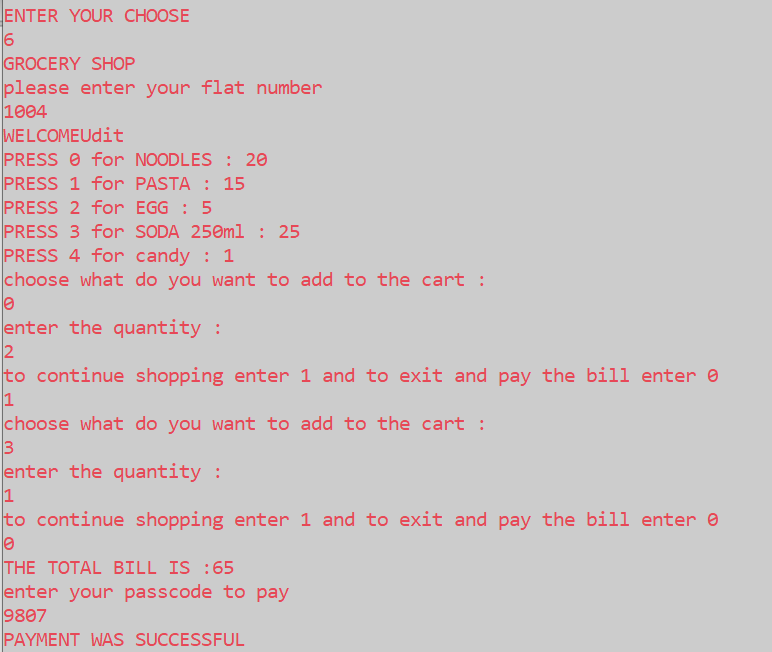
# The product is the pushed in an queue named ‘shopping list’ which acts as shopping list .

# When the used have specified all the items and their quantities total bill is calculated with the help of the queue ‘shopping list’.

# The system ask for the passcode of that particular flat if passcode enter is correct that the total bill is deducted from the electricity bill(virtual currency).

# If the passcode is wrong or the electricity balance is lower that the electricity bill the transaction terminates and user is unable to purchase his/her desired item.

# If the purchase is successful the changes in electricity balances balance is updated and the change is reflected.



# Conclusion

This project provides basic and essential services for residents of the society and help the authorities to manage it. The people of the society can pay their electricity bill , cheaks their individual details , pay for there visitor parking and purchase food items from the grocery shop in the society.

The authorities can use this software to determine whether the visitor is approved by the resident or not and the software automatically calculates and deduct the charges from the residents account /electricity balance of the resident. Authorities can also use this software to get essential details of the residents of the society ,this functionality is protected and can only be accessed by admin.

In short the system manages the activities in the residential area where it is implemented.

# 

# Future Scope

# As nowadays due to overcrowding and overpopulation the housing need of the people have shift from independent housing to multi-storage societies . This open a new growing market to manage this residential areas with a software .

# Software like these eases the life of the residences and the job of the authorities.

# It also have a virtual currency which reduce the need of cash transactions within the society , which will be vital at the time of a pandemic like Covid-19 this minimizes contact.

# 

# Appendix

CODE :

#include<iostream>

#include<cstring>

#include<string>

#include <stdlib.h>

#include<iomanip>

#include<dos.h>

#include <ctime>

#include<queue>

using namespace std;

string login="admin";

string password="udit2070";

class visiter{

public:

int aadharcard\_no;

int vehicle;

int visiting\_flat;

int pass;

time\_t start, finish;

void entering\_visiter()

{

cout<<"enter your aadharcard\_no"<<endl;

cin>>aadharcard\_no;

cout<<"no for vehicles you have"<<endl;

cin>>vehicle;

cout<<"flat you are visiting "<<endl;

cin>>visiting\_flat;

cout<<"enter passcode provided by the resident"<<endl;

cin>>pass;

time(&start);

cout<<setw(60)<<"|||||WELCOME TO ELDECO UTHOPIA|||||"<<endl;

return ;

}

float exiting\_visiter()

{

time(&finish);

difftime(finish, start);

cout << "Time = " << difftime(finish, start)<<"seconds"<<endl;

cout<<"charges 10 rupees per hours"<<endl;

return difftime(finish,start)\*10\*vehicle/3600;

}

};

class flat{

private:

float electricity\_balance;

int passcode;

public:

int flat\_no;

string name\_of\_owner;

int size\_of\_family;

int flat\_area;

bool present;

void install()

{

cout<<"ENTER YOUR NEW FLAT NUMBER :"<<endl;

cin>>flat\_no;

cout<<"ENTER YOUR NAME :"<<endl;

cin>>name\_of\_owner;

cout<<"ENTER NUMBER OF PEOPLE IN YOUR FAMILY :"<<endl;

cin>>size\_of\_family;

cout<<"ENTER SIZE OF FLAT IN SQUARE FEET:"<<endl;

cin>>flat\_area;

cout<<"CHOOSE A PASSCODE:(only share with the visiters only)"<<endl;

cin>>passcode;

present=true;

electricity\_balance=0;

cout<<"WELCOME TO THE SOCIETY :"<<name\_of\_owner<<endl;

}

void PayTheBill()

{

int AddMoney;

cout<<"ENTER THE MONEY YOU WANT ADD TO YOUR AMOUNT :"<<endl;

cin>>AddMoney;

if(AddMoney>0)

{

electricity\_balance+=AddMoney;

}

else

{

cout<<"Enter a valid amount"<<endl;

}

cout<<"YOUR CURRENT BALANCE IS :"<<electricity\_balance<<endl;

}

void showYourDetails()

{

cout<<"NAME :"<<name\_of\_owner<<endl;

cout<<"FLAT NUMBER :"<<flat\_area<<endl;

cout<<"NUMBER OF PEOPLE IN THE FLAT : "<<size\_of\_family<<endl;

cout<<"ENTER THE ELECTRICITY BILL : "<<electricity\_balance<<endl;

}

void visiting\_charges(float c)

{

electricity\_balance=electricity\_balance-c;

cout<<c<<"rupees deducted for visiter parking charges from account of flat : "<<flat\_no<<endl;

cout<<"NOW YOUR CURRENT BALANCE IS :"<<electricity\_balance<<endl;

}

void shop()

{

float price[5]={20,15,5,25,1};

cout<<"PRESS 0 for NOODLES : 20"<<endl;

cout<<"PRESS 1 for PASTA : 15"<<endl;

cout<<"PRESS 2 for EGG : 5"<<endl;

cout<<"PRESS 3 for SODA 250ml : 25"<<endl;

cout<<"PRESS 4 for candy : 1"<<endl;

float total\_bill=0.0;

int a=1;

queue<int>shopping\_list;

int choice;

int quantity;

for(int i=0;a==1;i++)

{

cout<<"choose what do you want to add to the cart : "<<endl;

cin>>choice;

cout<<"enter the quantity : "<<endl;

cin>>quantity;

float cost=price[choice]\*quantity;

shopping\_list.push(cost);

cout<<"to continue shopping enter 1 and to exit and pay the bill enter 0"<<endl;

cin>>a;

}

while(!shopping\_list.empty())

{

total\_bill=total\_bill+shopping\_list.front();

shopping\_list.pop();

}

cout<<"THE TOTAL BILL IS :"<<total\_bill<<endl;

cout<<"enter your passcode to pay"<<endl;

int passc;

cin>>passc;

if(passc==passcode && electricity\_balance>=total\_bill)

{

electricity\_balance=electricity\_balance-total\_bill;

cout<<"PAYMENT WAS SUCCESSFUL"<<endl;

cout<<"|| MONEY DEDUCTED FROM YOUR ACCOUNT ||"<<endl;

}

else

{

cout<<"PAYMENT ERROR : you don't have enough balance in your account OR the passcode is wrong"<<endl;

}

}

};

int main()

{

system("Color 7C");

cout<<setw(75)<<"\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*"<<endl;

cout<<setw(60)<<"ELDECO UTOPIA"<<endl;

cout<<setw(75)<<"\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*"<<endl;

int choose;

flat arr[100];

visiter vis[20];

int p=0;

int a=0;

int v=0;

while(a==0)

{

cout<<"enter 1 if you are new to the society :"<<endl;

cout<<"enter 2 if you want to pay your electricity bill :"<<endl;

cout<<"enter 3 if you want to view all resident's details :"<<endl;

cout<<"enter 4 if you want to visit a resident's house:"<<endl;

cout<<"enter 5 if you are exiting from a resident's house:"<<endl;

cout<<"enter 6 to purchase from shop :"<<endl;

cout<<"enter 7 to Exit from the software"<<endl;

cout<<"ENTER YOUR CHOOSE"<<endl;

cin>>choose;

switch(choose)

{

case 1:

arr[p].install();

arr[p].showYourDetails();

p++;

break;

case 2:

//THIS WILL HELP YOU TO PAY THE ELECTRICITY BILL

int id;

cout<<"ENTER YOUR flat number:"<<endl;

cin>>id;

for(int g=0;g<=p-1;g++)

{

if(arr[g].flat\_no==id)

{

arr[g].PayTheBill();

arr[g].showYourDetails();

}

}

break;

case 3:

{

cout<<"YOUR ARE REQUIRED TO LOG IN AS ADMINISTRATOR :"<<endl;

cout<<"Login : "<<endl;

string l;

cin>>l;

cout<<"Password : "<<endl;

string pa;

cin>>pa;

if(login==l)

{

for(int i=0;i<p;i++)

{

arr[i].showYourDetails();

cout<<"<--------------------------->"<<endl;

}

}

break;

}

case 4:

{

vis[v].entering\_visiter();

v++;

break;

}

case 5:

{

cout<<"PLEASE ENTER THE FLAT YOU VISITED VISITING"<<endl;

int f;

cin>>f;

for(int w=0;w<=v-1;w++)

{

if(f==vis[w].visiting\_flat)

{

float cost=vis[w].exiting\_visiter();

for(int i=0;i<=p-1;i++)

{

if(arr[i].flat\_no==vis[w].visiting\_flat)

{

arr[i].visiting\_charges(cost);

}

}

//v++;

}

}

break;

}

case 6:

cout<<"GROCERY SHOP"<<endl;

cout<<"please enter your flat number"<<endl;

int f\_number;

cin>>f\_number;

for(int k=0;k<=p-1;k++)

{

if(f\_number==arr[k].flat\_no)

{

cout<<"WELCOME"<<arr[k].name\_of\_owner<<endl;

arr[k].shop();

}

}

break;

case 7:

a=1;

break;

}

}

cout<<"EXITING THE SYSTEM, BYE!!"<<endl;

return 0;

}