```cpp
Group C1
Title:- Using Hash Table implement The Telephone Book
#include<iostream>
using namespace std;
#define size 10
struct Hash{
    string Name;
    long long Mob;
};
class Table{
    Hash DB[size];
    public:
        Table(){
            for(int i=0;i<size;i++){
                DB[i].Name="-1";
                DB[i].Mob=0;
            }
        }
        void insert();
        void show();
        void search();
};
int main(){
    Table t1;
    char ans;
    int choice;
    do{
        cout<<"\n=======================TELEPHONE DATABASE=====================
===";
        cout<<"\n\t1.Insert In Telephone Book\n\t2.Display List\n\t3.Search Perso
n\n\tEnter Your Choice";
        cin>>choice;
        cout<<"\n=============================================================
===";
            switch(choice){
                case 1: t1.insert();
                    break;
                case 2: t1.show();
                    break;
                case 3 : t1.search();
                    break;
            }
            cout<<"\nDo You Wants To Continue?";
            cin>>ans;
    }while(ans=='y'|| ans=='Y');
```

```cpp
        return 0;
    }
    void Table::insert(){
        long long tmob;
        int sum,index;
        string tname;
        char ch;
        int j=0;
        int flag;
        do{
            cout<<"\nEnter the First Name";
            cin>>tname;
            cout<<"\nEnter the Mobile Number ";
            cin>>tmob;
            for(int i=0;i<3 && tname.length();i++){
                sum=sum+tname.at(i);
            }
            index=sum%10;
            if(DB[index].Name=="-1"){
                DB[index].Name=tname;
                DB[index].Mob=tmob;
            }
            else{
                flag=index;
                do{
                    index=(int(index+(j*j))%10);
                        if(DB[index].Name=="-1"){
                            DB[index].Mob=tmob;
                            DB[index].Name=tname;
                            break;
                        }
                        else{
                            if(flag==index){
                                cout<<"\ntable Is full";
                            }
                        }
                        j++;
                }while(flag!=index);
            }
            cout<<"\nDO You want To Store Any Person Name? ";
            cin>>ch;
        }while(ch=='y'|| ch=='Y');
    }
    void Table::show(){
        for(int i=0;i<size;i++){
```

```cpp
            cout<<"\n"<<DB[i].Name<<"|"<<DB[i].Mob<<"\n";
    }
}
void Table::search(){
    string tname;
    int flag;
    int j=0;
    int index,sum;
    cout<<"\nEnter The Person name To Search ";
    cin>>tname;
    for(int i=0;i<3 &&tname.length();i++){
        sum=sum+tname.at(i);
    }
    index=sum%10;
    if(DB[index].Name==tname){
        cout<<"\nPerson Is Present In Your PhoneBook At "<<index;
        cout<<"\n\tPerson Details\n\t"<<DB[index].Name<<"|"<<DB[index].Mob;
    }
    else{
        flag=index;
        do{
            index=(index+(j*j))%10;
            if(DB[index].Name==tname){
                cout<<"\nPerson Is Present In Your PhoneBook At "<<index;
                cout<<"\n\tPerson Details\n\t"<<DB[index].Name<<"|"<<DB[index].Mo
b;

                break;
            }
            else{
                if(flag==index){
                    cout<<"\nPerson Is Not Found";
                    break;
                }
            }
            j++;
        }while(flag!=index);
    }

}


Output:

        =====================TELEPHONE DATABASE=====================

    1.Insert In Telephone Book
```

2.Display List

3.Search Person

Enter Your Choice2

===

-1|0

-1|0

-1|0

-1|0

-1|0

-1|0

-1|0

-1|0

-1|0

-1|0

Do You Wants To Continue?y

========================TELEPHONE DATABASE========================

    1.Insert In Telephone Book

    2.Display List

    3.Search Person

    Enter Your Choice1

==

Enter the First NameUlkesh

Enter the Mobile Number 8087

DO You want To Store Any Person Name? y

Enter the First NameSujit

Enter the Mobile Number 7408

DO You want To Store Any Person Name? y

Enter the First NameAnjali

Enter the Mobile Number 9090

DO You want To Store Any Person Name? n

Do You Wants To Continue?y

======================TELEPHONE DATABASE========================

    1.Insert In Telephone Book

    2.Display List

    3.Search Person

    Enter Your Choice2

==

Ulkesh|8087

Anjali|9090

-1|0

-1|0

-1|0

-1|0

Sujit|7408

-1|0

-1|0

-1|0

Do You Wants To Continue?y

=======================TELEPHONE DATABASE=======================

    1.Insert In Telephone Book

    2.Display List

    3.Search Person

    Enter Your Choice1

==

Enter the First NameSuresh

Enter the Mobile Number 090

DO You want To Store Any Person Name? n

Do You Wants To Continue?y

=======================TELEPHONE DATABASE=======================

    1.Insert In Telephone Book

2.Display List

3.Search Person

Enter Your Choice2

==

Ulkesh|8087

Anjali|9090

-1|0

-1|0

Suresh|90

-1|0

Sujit|7408

-1|0

-1|0

-1|0

Do You Wants To Continue?y

=======================TELEPHONE DATABASE========================

    1.Insert In Telephone Book

    2.Display List

    3.Search Person

    Enter Your Choice3

==

Enter The Person name To Search Suresh

Person Is Present In Your PhoneBook At 4

    Person Details

    Suresh|90

Do You Wants To Continue?n