“Heaven’s Light is Our Guide”

Department of Computer Science & Engineering

RAJSHAHI UNIVERSITY OF ENGINEERING & TECHNOLOGY

Lab Report-02

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TASK-01 : Create a bKash/Nagad App with proper features and a menubar consisting create account,send money and exit.

Solution:

The code for this problem is as below:

```
#include<iostream>

using namespace std;

int idx=0;
int trid=0;
class user
{
public:
   string dateofbirth;
   string name;
   long long mobileno;
   string address;
   long long NID;
   string pin;
};
class transaction
{
   double amount;
   int type;
   double time;
   user source;
   user dest;
public:
```

```
    void setval(double amnt,user src2,user dst2)
    {
        amount=amnt;
        type=1;
        source=src2;
        dest=dst2;
    }
    void getvalsrcoftrans()
    {
        cout<<endl<<endl;
        cout<<"source: "<<endl;
        cout<<"name: "<<source.name<<endl;
        cout<<"mobile: "<<source.mobileno<<endl;
        cout<<"address: "<<source.address<<endl;
        cout<<"NID: "<<source.NID<<endl;

    }
    void getvaldestoftrans()
    {
        cout<<endl<<endl;
        cout<<"destination: "<<endl;
        cout<<"name: "<<dest.name<<endl;
        cout<<"mobile: "<<dest.mobileno<<endl;
        cout<<"address: "<<dest.address<<endl;
        cout<<"NID: "<<dest.NID<<endl;

    }
};
```

```
class account
{
   double balance;
   user info;
   int no=0;
public:
   void setval(string dob,string nam,long long mobile,string addr,long long nid,string PIN)
   {
      //let initial balance be 1000 for easy transactions
      balance=1000;
      info.dateofbirth=dob;
      info.name=nam;
      info.mobileno=mobile;
      info.address=addr;
      info.NID=nid;
      info.pin=PIN;

   }
   user getinfo()
   {
      return info;
   }
   double getbalance()
   {
      return balance;
   }
   string getdob()
   {
      return info.dateofbirth;
```

```
}
string getname()
{
   return info.name;
}
long long getmobileno()
{
   return info.mobileno;
}
string getaddress()
{
   return info.address;
}
long long getnid()
{
   return info.NID;
}
string getpin()
{
   return info.pin;
}



void setbalanceinc(double amount)
{
   balance+=amount;
}
void setbalancedec(double amount)
{
```

```
        balance-=amount;
    }


};
int main()
{


    account acc[100];
    transaction tr[1000];
    while(1)
    {
        int choice;
        cout<<"Menu: \n1.Create account\n 2.Send money\n3.Exit"<<endl;
        cout<<"Enter your choice: ";

        cin>>choice;

        string dateofbirth2;
        string name2;
        long long mobileno2;
        string address2;
        long long NID2;
        string pin2;
        int tru=0;

        if(choice==3)
        {
```

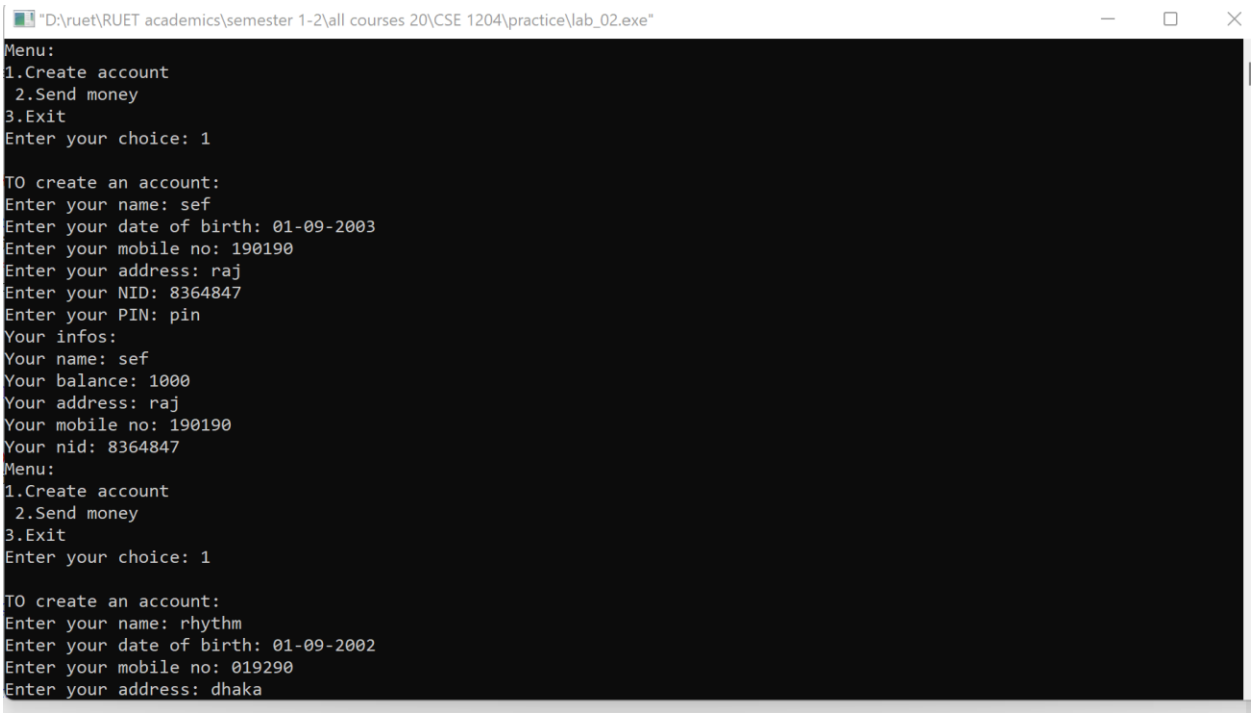
```
    cout<<"Thank you"<<endl;
    break;
}


switch(choice)
{
case 1:
    cout<<endl;
    //create an account
    cout<<"TO create an account:"<<endl;
    cout<<"Enter your name: ";
    cin>>name2;
    cout<<"Enter your date of birth: ";
    cin>>dateofbirth2;
    cout<<"Enter your mobile no: ";
    cin>>mobileno2;
    cout<<"Enter your address: ";
    cin>>address2;
    cout<<"Enter your NID: ";
    cin>>NID2;
    cout<<"Enter your PIN: ";
    cin>>pin2;

    acc[idx].setval(dateofbirth2,name2,mobileno2,address2,NID2,pin2);
    cout<<"Your infos: "<<endl;
    cout<<"Your name: "<<acc[idx].getname()<<endl;
    cout<<"Your balance: "<<acc[idx].getbalance()<<endl;
    cout<<"Your address: "<<acc[idx].getaddress()<<endl;
```

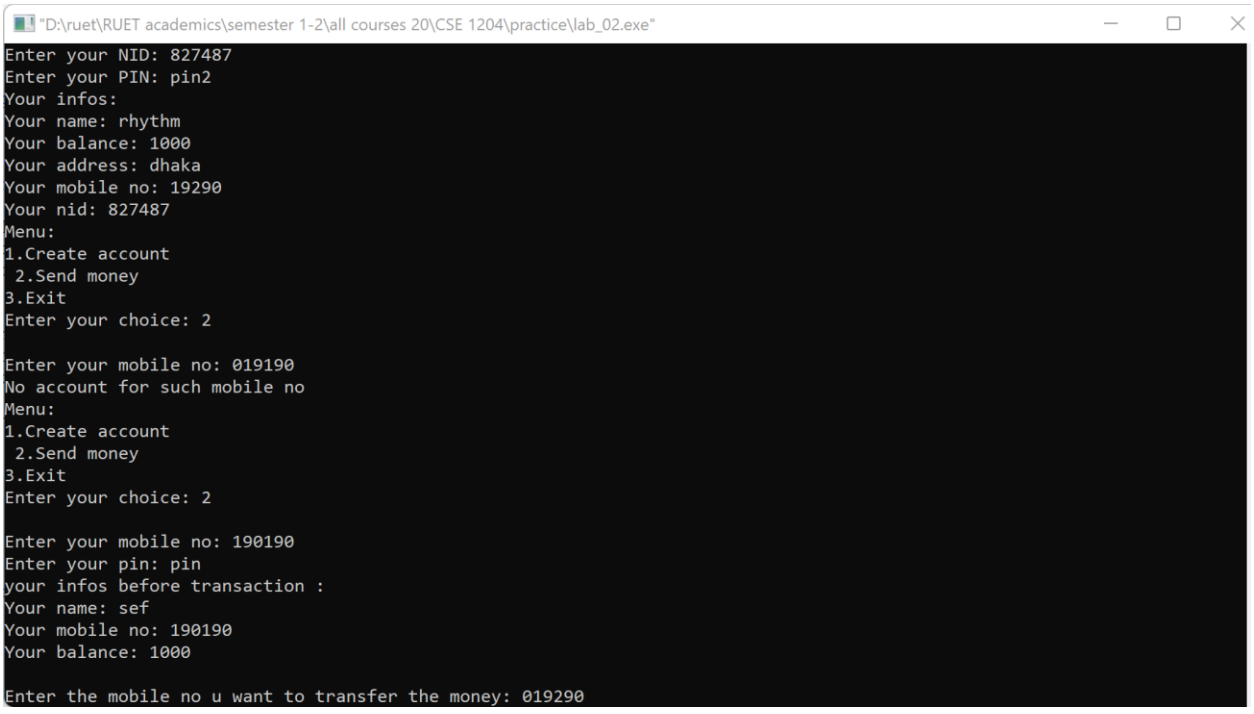
```
    cout<<"Your mobile no: "<<acc[idx].getmobileno()<<endl;
    cout<<"Your nid: "<<acc[idx].getnid()<<endl;




    idx++;

    break;

case 2:
    //send money
    cout<<endl;
    long long phoneno;
    cout<<"Enter your mobile no: ";
    cin>>phoneno;

    for(int i=0; i<100; i++)
    {
      if(acc[i].getmobileno()==phoneno)
      {
         tru=1;
         string pass;
         cout<<"Enter your pin: ";
         cin>>pass;
         if(pass==acc[i].getpin())
         {

            cout<<"your infos before transaction : "<<endl;
            cout<<"Your name: "<<acc[i].getname()<<endl;
```

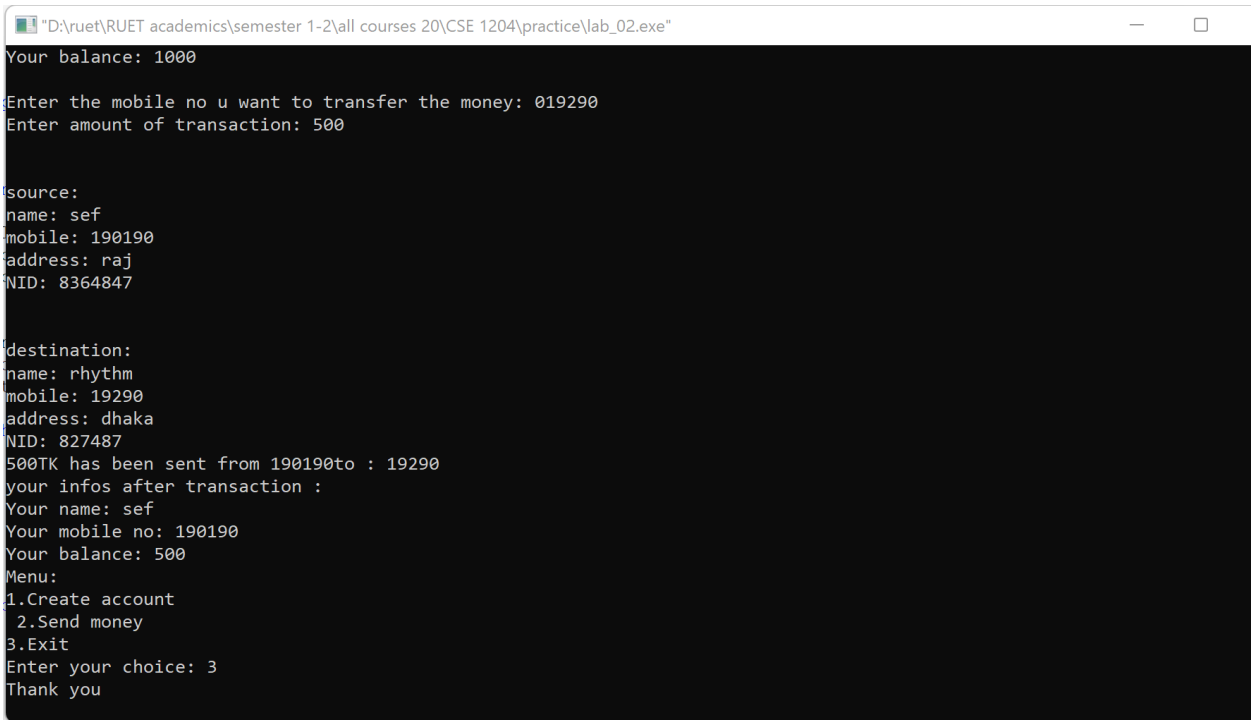
```
cout<<"Your mobile no: "<<acc[i].getmobileno()<<endl;
cout<<"Your balance: "<<acc[i].getbalance()<<endl;

cout<<endl;

long long mob;
cout<<"Enter the mobile no u want to transfer the money: ";
cin>>mob;
int src,dst=-1;
for(int j=0; j<100; j++)
{
  if(mob==acc[j].getmobileno())
  {
    src=i;
    dst=j;
    break;
  }
}
if(dst==-1)
{
  cout<<"Enter the phone no of a valid account"<<endl;
}
else
{
  double monet;
  cout<<"Enter amount of transaction: ";
  cin>>monet;
  if(acc[src].getbalance()>=monet)
  {
```

```
                acc[src].setbalancedec(monet);
                acc[dst].setbalanceinc(monet);


                tr[trid].setval(monet,acc[src].getinfo(),acc[dst].getinfo());
                tr[trid].getvalsrcoftrans();
                tr[trid].getvaldestoftrans();

                cout<<monet<<"TK has been sent from "<<acc[src].getmobileno()<<"to :
"<<acc[dst].getmobileno()<<endl;



                trid++;
              }

              else
              {
                cout<<"Not enough money to transfer"<<endl;
              }


            }

            cout<<"your infos after transaction : "<<endl;
            cout<<"Your name: "<<acc[i].getname()<<endl;
            cout<<"Your mobile no: "<<acc[i].getmobileno()<<endl;
            cout<<"Your balance: "<<acc[i].getbalance()<<endl;
```

```
                }
                else
                {
                    cout<<"Invalid pin"<<endl;

                }
              }
            }
            if(tru==0)
            {
               cout<<"No account for such mobile no"<<endl;
            }

            break;

        default:
            cout<<"choose a valid choice"<<endl;
        }
    }
    return 0;
}
```


"D:\ruet\RUET academics\semester 1-2\all courses 20\CSE 1204\practice\lab_02.exe"
Menu:
1.Create account
2.Send money
3.Exit
Enter your choice: 1
TO create an account:
Enter your name: sef
Enter your date of birth: 01-09-2003
Enter your mobile no: 190190
Enter your address: raj
Enter your NID: 8364847
Enter your PIN: pin
Your infos:
Your name: sef
Your balance: 1000
Your address: raj
Your mobile no: 190190
Your nid: 8364847
Menu:
1.Create account
2.Send money
3.Exit
Enter your choice: 1
TO create an account:
Enter your name: rhythm
Enter your date of birth: 01-09-2002
Enter your mobile no: 019290
Enter your address: dhaka


"D:\ruet\RUET academics\semester 1-2\all courses 20\CSE 1204\practice\lab_02.exe"
Enter your NID: 827487
Enter your PIN: pin2
Your infos:
Your name: rhythm
Your balance: 1000
Your address: dhaka
Your mobile no: 19290
Your nid: 827487
Menu:
1.Create account
2.Send money
3.Exit
Enter your choice: 2
Enter your mobile no: 019190
No account for such mobile no
Menu:
1.Create account
2.Send money
3.Exit
Enter your choice: 2
Enter your mobile no: 190190
Enter your pin: pin
your infos before transaction :
Your name: sef
Your mobile no: 190190
Your balance: 1000
Enter the mobile no u want to transfer the money: 019290



TASK-02: Write a short discussion on UML(Unified Modeling Language)..

Answer:

Unified Modeling Language (UML) is a general purpose modelling language. The main aim of UML is to define a standard way to **visualize** the way a system has been designed. It is quite similar to blueprints used in other fields of engineering. In other words, UML is a standardized modeling language consisting of an integrated set of diagrams, developed to help system and software developers for specifying, visualizing, constructing, and documenting the artifacts of software systems, as well as for business modeling and other non-software systems.

UML is **not a programming language**, it is rather a visual language. We use UML diagrams to portray the **behavior and structure** of a system. UML helps software engineers, businessmen and system architects with modelling, design and analysis. The UML uses mostly graphical notations to express the design of software projects. Using the UML helps project teams communicate, explore potential designs, and validate the architectural design of the software.

Properties/Primary goals of UML:

1. Provide users with a ready-to-use, expressive visual modeling language so they can develop and exchange meaningful models.
2. Provide extensibility and specialization mechanisms to extend the core concepts.
3. Be independent of particular programming languages and development processes.
4. Provide a formal basis for understanding the modeling language.
5. Encourage the growth of the OO tools market.
6. Support higher-level development concepts such as collaborations, frameworks, patterns and components.
7. Integrate best practices.

It is possible to look at a system from many different viewpoints. A software development will have many stakeholders playing a part. All of these people are interested in different aspects of the system, and each of them require a different level of detail. For example, a coder needs to understand the design of the system and be able to convert the design to a low level code. By contrast, a technical writer is interested in the behavior of the system as a whole, and needs to understand how the product functions. The UML attempts to provide a language so expressive that all stakeholders can benefit from at least one UML diagram.

Diagrams of UML: