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//ASSIGNMENT NO: 1
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#include <iostream>

#include <string>

#include<cassert> using
namespace std;

class password1    //main class to set password and verify pin
{
private:
    string passkey;
public:
    string password;
password1();
    ~password1();    //constructor
void verifypassword ();
};
password1::password1()    //this the constructor to set password
{
    passkey="1234";
}
password1::~~password1()
{
    passkey="1234";
}

void password1::verifypassword() //called function to very password

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{
    string a=passkey;
repeat:
    cout<<" ENTER YOUR BANK PIN: ";
string password;  cin>>password;
//test the password  if( password == a)
    {
        cout<<" \n\n ***** WELCOME TO VISA CARD ***** \n"<<endl;
cout<<" SELECT BANK: \n"<<endl;
        return;
    }
else
    {
        cout<<"\n INVALID PIN PLEASE RE-ENTER !!! \n"<<endl;    goto
repeat;    //welcome display when corret password is entered
    }
}
class bank    //main bank class
{
private:
public:
    int bookbalance;    //private variable  bank();
//constrator to set variable book balance;  int
withdraw(int a,int b);  int deposit(int a,int b);  int
balance,amount;  int accountbalance (int bookbalance,int
balance);

    void choosebank ();    //function to choose bank  int
selectservice(int);  void cashwithdraw();  void

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networkprovider(); //function to select service provider void
cashdeposit ();
};
bank::bank()
{
    bookbalance=30000;
}
int bank::withdraw(int a,int b) //function to calculate the balance after any transaction
{
    int balance=b-a;
return balance;
}
int bank::deposit(int a,int b)
{
    int balance=b+a;
return balance;
}
void bank::choosebank()
{
    cout<<" *****"<<endl;
    cout<<" * 1: BARCLAY BANK      *"<<endl;
cout<<" * 2: ZANACO          *"<<endl; cout<<" *
3: FNB                *"<<endl;
    cout<<" * 4: STANDARD CHARTERED BANK *"<<endl;
    cout<<" * 5: INDO ZAMBIA BANK      *"<<endl; cout<<"
*****"<<endl; int
bankchoice; //bank choices go: //loop to allow
right choise of bank is made cin>>bankchoice;

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try
{
    if(bankchoice>5)    throw bankchoice;    switch
(bankchoice)    //switch to select which bank
    {
        case 1: cout<<" \n *** Welcome To BARCLAYS BANK ***\n "<<endl;
        break;
        case 2: cout<<"\n *** Welcome To ZANACO BANK ***\n"<<endl;
        break;
        case 3: cout<<"\n *** Welcome To FNB BANK ***\n"<<endl;
        break;
        case 4: cout<<"\n *** Welcome To STANDARD CHARTERED BANK ***\n"<<endl;
        break;
        case 5: cout<<"\n *** Welcome To INDO ZAMBIA BANK ***\n"<<endl;
        break;
    } } catch (int choice){                //to catch the error in
choice
    cout<<"\n ERROR RE-ENTER YOUR CHOICE\n"<<endl;
    goto go;
}
}

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int bank::selectservice(int a)            //function to select service
{
loop1:
    cout<<" SELECT OPTION: \n"<<endl;    //services offered on the ATM
cout<<" ***** " <<endl;    cout<<" *    1.

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WITHDRAW * "<<endl; cout<<" * 2. BUY AIRTIME * "<<endl;
cout<<" * 3. DEPOST * "<<endl;
cout<<" ***** "<<endl;
int option; cin>>option; try //try catch to
ensure correct service is captured
{
    if(option>3)
throw option;
}
catch(int option)
{
    cout<<" ERROR !!! \n RE-ENTER YOUR OPTION: ";//display error message if wrong option is entered
goto loop1; // give another chance to choose
}
return option;
}
class derived:public bank //derived class for bank
{
private:
public:
void cashwithdraw(); void
networkprovider(); void
cashdeposit ();
};
void derived::cashwithdraw() //derived class for bank
{
    cout<<"\n CHOOSE THE AMOUNT YOU WANT TO WITHDRAW "<<endl;
cout<<"\n 1:k 2000\n 2:k 5000\n 3: OWN AMOUNT\n";

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    int choise;           //default choices
cin>>choise;  if(choise==1)
{
    bank k;    int amount=2000;
balance=k.withdraw(amount,bookbalance);    cout<<"\n THANK
YOU,THE WITHDRAW WAS SUCCESSFUL. ";    cout<<"YOUR
MAIN ACCOUNT BALANCE: k "<<balance<<endl;
}
else if(choise==2)
{
    bank k;    int amount=5000;
balance=k.withdraw(amount,bookbalance);    cout<<"\n THANK
YOU,THE WITHDRAW WAS SUCCESSFUL. ";    cout<<"YOUR
MAIN ACCOUNT BALANCE: k "<<balance<<endl;
}
else
{
    bank k;
    cout<<"\n ENTER OWN AMOUNT TO WITHDRAW: k ";
HERE:
    cin>>amount;  try  //try catch to check user enter amount less
than bookbalance
    {
        if(amount>bookbalance)    throw amount;
balance=k.withdraw(amount,bookbalance);    cout<<"\n THANK
YOU,THE WITHDRAW WAS SUCCESSFUL. ";    cout<<"YOUR
MAIN ACCOUNT BALANCE: k "<<balance<<endl;
    }
}

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catch(int amount)
{
    cout<<"\n AMOUNT ENTERED EXCEED YOUR BOOKBALANCE !!! \n PLEASE RE-ENTER AMOUNT : k ";
    goto HERE;
}
return;
}
}

void derived::networkprovider() //derived class from bank to select network provider
{
    int choose; string number; cout<<" CHOOSE NETWORK PROVIDER: \n"<<endl; //display
message to choose network provider cout<<" ***** "<<endl;
    cout<<" *      1. MTN      * "<<endl;
cout<<" *      2. Airtel   * "<<endl; cout<<" *
3. ZamTel     * "<<endl;
    cout<<" ***** "<<endl;
    cin>>choose; bank k;
    switch(choose)
    {
case 1:
re: //do while loop to check that correct number has been entered
        cout<<"\n ENTER MTN PHONE NUMBER: 096";
cin>>number;
        try
        {
            if (number.length()!=7)
throw 0;

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        cout<<"\n HOW MUCH AIRTIME: k "<<endl;        cin>>amount;
balance=k.withdraw(amount,bookbalance);        cout<<"\n YOU HAVE
BOUGHT AIRTIME FOR: k "<<amount;        cout<<" \n YOUR MAIN
ACCOUNT BALANCE IS: k "<<balance<<endl;
    }
catch(int)
{
    cout<<" WRONG PHONE NUMBER !!! TRY AGAIN"<<endl;
    goto re;
}
break;
case 2:
re1:        //do while loop to check that correct number has been entered
    cout<<"\n ENTER AIRTEL PHONE NUMBER: 097";
cin>>number;
    try
    {
        if(number.length()!=7)
throw 0;
        cout<<"\n HOW MUCH AIRTIME: k ";        cin>>amount;
balance=k.withdraw(amount,bookbalance);        cout<<"\n YOU
HAVE BOUGHT AIRTIME FOR: k "<<amount;        cout<<" \n MAIN
ACCOUNT BALANCE IS: k "<<balance<<endl;
    }
catch(int)
{
    cout<<" WRONG PHONE NUMBER !!! TRY AGAIN "<<endl;
    goto re1;
}

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    }
    break;
case 3:
re2:        //do while loop to check that correct number has been entered
cout<<"\n ENTER ZAMTEL PHONE NUMBER: 095";   cin>>number;
    try
    {
        if(number.length()!=7)
throw 0;
        cout<<"\n HOW MUCH AIRTIME: k "<<endl;
cin>>amount;    balance=k.withdraw(amount,bookbalance);
cout<<"\n YOU HAVE BOUGHT AIRTIME FOR: k "<<amount;
cout<<"\n MAIN ACCOUNT BALANCE IS: k "<<balance<<endl;
    }
    catch(int)
    {
        cout<<" WRONG PHONE NUMBER !!! TRY AGAIN"<<endl;
        goto re2;
    }
    break;
}
}

void derived::cashdeposit() //function to allow user deposit cash
{   int
choice;

    cout<<"\n PLEASE PUT THE MONEY YOU WANT TO DEPOSIT INTO THE ATM: k ";

    // the ATM automaticaly counts the money   cin>>amount;
cout<<"\n YOU HAVE INSERTED k "<<amount<<endl;   cout<<"\n WOULD

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YOU LIKE TO CONTINUE: \n\n 1.YES \n 2.NO "<<endl;  cin>>choice;
if(choice==1)
{
    bank k;      balance=k.deposit(amount,bookbalance);    //call for balance to be calculated
cout<<"\n YOU HAVE SUCCESSFULLY DEPOSITED k " <<amount<<" INTO YOUR ACCOUNT."<<endl;
cout<<"\n YOUR NEW ACCOUNT BALANCE IS: k "<<balance<<endl;  //display the balance
}
if(choice==2)
{
    cout<<"\n TRANSACTION TERMINATED! YOUR MAY GET BACK YOUR MONEY."<<endl;
}
}
int main()
{  int choice;  derived ob;  password1 y;
//declare main password key object
    y.verifypassword();    //call to verify paasword using set passkey
int w;  bank k;
    k.choosebank();    //call function to choose bank mc:
    w=k.selectservice(0);  //call function to select service  if(w==1)    //user
w return value to select functions for services offered bank
{
    ob.cashwithdraw();    //function for withdrawing
}
else if(w==2)
{
    derived ob;  ob.networkprovider();  //function for choosing
network providers
}
}

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else
{
    derived ob;    ob.cashdeposit();
//function for cashdeposit
}
cout<<"\n WOULD YOU LIKE TO PERFORM ANOTHER TRANSACTION: \n\n 1.YES \n 2.NO "<<endl;
cin>>choice;
if(choice==1)
{
    goto mc;
}
if(choice==2)
{
    cout<<"\n *** THANK YOU FOR BANKING WITH US ***"<<endl;
}
return 0;
}
```