

**Code:**

```
#include <bits/stdc++.h>

using namespace std;

int getPin();

int main_menu();

int menu1(void);

int OTP();

int search(string m);

int select();

int trxID();

string getTime();

int fin;


class MyCash
{
private:
    string mobile;
    string name;
    int pin;
    float balance = 0;
    int cnt = 0;

public:
    pair<int, string> his[100];
    tuple<float, float, string> hist[100];

    friend void insertFile();

    void setData(string m, string n, int p, float bal)
    {
        mobile = m;
```

```
    name = n;  
    pin = p;  
}
```

```
int mpass(string m, int p)  
{  
    if (m == mobile && p == pin)  
    {  
        return 1;  
    }  
    else  
        return 0;  
}
```

```
string getMobile()  
{  
    return (mobile);  
}
```

```
void update();  
void remove();  
void send();  
void cash_in();  
void cash_out();  
void paybill();  
void check();  
void history();  
};
```

```
MyCash mem[1000];  
int total = -1;
```

```

void insertFile()
{

    ofstream outputFile("MyCash.txt", ios::app);

    for (int i = 0; i <= total; i++)
    {
        if (outputFile.is_open())
        {
            outputFile << mem[i].name << " " << mem[i].mobile << " " << mem[i].pin << " " << mem[i].balance << endl;
        }
    }
    outputFile.close();
}

```

```

string getTime()

```

```

{

    time_t now = time(0);
    char *dt = ctime(&now);
    return string(dt);
}

```

```

int trxID()

```

```

{
    srand(time(0));
    int x = +rand();
    return x;
}

```

```

int OTP()
{
    srand(time(0));

    int x = 1000 + rand() % 9000;

    cout << "\033[33mmyCash OTP: " << x << "\033[0m" << endl;
    cout << "Your OTP is valid for only 2 mins ..... \nHurry up!....." << endl;
    return x;
}

```

```

int getPin()
{
    string s;
    char c;
    int i = 0;
    c = getch();

    if (c == 13)
        return 1;
    while (c != 13)
    {
        s[i] = c;
        cout << "*";
        i++;
        c = getch();
    }
    return (stoi(s));
}

```

```

int search(string m)
{

```

```

int i = 0, pos = -1;
for (; i <= total; i++)
{
    if (mem[i].getMobile() == m)
    {
        pos = i;
        break;
    }
}
return pos;
}

```

```

void MyCash ::update()
{
    string n;
    int p;
    char s[100];
    int a, c, d, e, x;
    cin.ignore();
    cout << "Old name: " << name << endl;
    ;
    cout << "New name: ";
    cin.getline(s, 100);
    cout << "Old PIN(enter to ignore): ";
    a = getPin();
    cout << endl;
    if (a != 1)
        do
        {
            cout << "New PIN: ";
            c = getPin();

```

```

        cout << endl;
        cout << "Confirm new pin: ";
        p = getPin();
        cout << endl;
    } while (c != p);
    clock_t start = clock();
otp:
    x = OTP();
    clock_t end = clock();
    cout << (end - start) / 1000 << endl;
    cout << "Enter OTP: ";
    cin >> d;
    if (((end - start) / 1000) > 120)
    {
        cout << "OTP time has expired" << endl;
        goto otp;
    }

    if (x == d)
    {
        mem[fin].setData(mobile, s, p, balance);
        cout << "Member update succesfully" << endl;
    }
    else
        cout << "Invalid OTP...." << endl;
    cout << "Press any key go to main menu....." << endl;
    getch();
    system("cls");

    select();
}

```

```

void MyCash ::remove()
{
    int p, s;
    do
    {
        cout << "Enter PIN: ";

        p = getPin();
        if (p != pin)
            cout << "Invalid PIN." << endl;
    } while (p != pin);

    cout << endl;
otp:
    int x = OTP();
    clock_t start = clock();

    cout << "Enter OTP: ";
    cin >> s;
    clock_t end = clock();
    if (((end - start) / 1000) > 120)
    {
        cout << "OTP time has expired" << endl;
        goto otp;
    }
    if (x == s)
    {
        mem[0].setData(" ", " ", 0, 0.0);
        cout << "Remove is succesful" << endl;
    }
}

```

else

cout << "Invalid OTP...." << endl;

cout << "Press any key go to main menu....." << endl;

getch();

system("cls");

menu1();

}

void MyCash ::send()

{

float b = 0;

int a;

string m;

char s;

cout << "Enter Destination no. (11-digit): ";

cin >> m;

int d = search(m);

if (m.length() == 11 and mem[d].mobile == m)

{

cout << "Enter Amount: ";

cin >> b;

}

else

{

cout << "Destination Mobile no. is invalid" << endl;

goto c;

}

if (b <= balance)

{



```

cout << "Sending " << b << " to " << m << endl;
mem[d].balance = mem[d].balance + b;

cout << "Are you sure(Y/N)? ";
cin >> s;
int x;
if (s == 'Y')

{
m:

    x = OTP();
    clock_t start = clock();

    cout << "Enter OTP: ";
    cin >> a;
    clock_t end = clock();
    if (((end - start) / 1000) > 120)
    {
        cout << "OTP time has expired" << endl;
        goto m;
    }
    if (a == x)
    {
        balance = balance - b;
        cout << "Send Money is Successful" << endl;

        his[cnt] = make_pair(trxID(), "Send Money");
        hist[cnt] = make_tuple(b, balance, getTime());
        cnt++;
    }
}

```

```
        else
            goto m;
    }
    else
        goto c;
}
else
    cout << "Insufficient Fund" << endl;
```

c:

```
    cout << "Press any key go to main menu....." << endl;
    getch();
    system("cls");
```

```
    select();
}
```

```
void MyCash ::cash_in()
{
    float b;
    char s;
    cout << "Enter Amount: ";
    cin >> b;
    cout << "Cash-in " << b << endl;

    cout << "Are you sure(Y/N)? ";
    cin >> s;
    if (s == 'Y' || s == 'y')
    {
        balance = balance + b;
        cout << "Cash-in is Successful" << endl;
```

```
    his[cnt] = make_pair(trxID(), "Cash-in");  
    hist[cnt] = make_tuple(b, balance, getTime());  
    cnt++;  
}
```

c:

```
cout << "Press any key go to main menu....." << endl;  
getch();  
system("cls");
```

```
select();
```

```
}
```

```
void MyCash ::cash_out()
```

```
{
```

```
    float b;
```

```
    int a;
```

```
    int x;
```

```
    char s;
```

```
    cout << "Enter Amount: ";
```

```
    cin >> b;
```

```
    cout << "Cash_out " << b << endl;
```

```
    if (balance >= b)
```

```
    {
```

```
        cout << "Are you sure(Y/N)? ";
```

```
        cin >> s;
```

```
        if (s == 'Y')
```

```
        {
```

g:

```
x = OTP();
```

```
clock_t start = clock();
```

```
cout << "Enter OTP: ";
```

```
cin >> a;
```

```
clock_t end = clock();
```

```
if (((end - start) / 1000) > 120)
```

```
{
```

```
    cout << "OTP time has expired" << endl;
```

```
    goto g;
```

```
}
```

```
if (a == x)
```

```
{
```

```
    balance = balance - b;
```

```
    cout << "Cash-out is Successful" << endl;
```

```
    his[cnt] = make_pair(trxID(), "Cash Out");
```

```
    hist[cnt] = make_tuple(b, balance, getTime());
```

```
    cnt++;
```

```
}
```

```
else
```

```
    goto g;
```

```
}
```

```
}
```

```
else
```

```
{
```

```
    cout << "Insufficient Fund" << endl;
```

```
}
```

```
cout << "Press any key go to main menu....." << endl;
```

```
getch();
```

```
system("cls");
```

```
select();
```

```
}
```

```
void MyCash ::paybill()
```

```
{
```

```
    int a, tk, x, f;
```

```
    char d;
```

```
    string s;
```

```
    cout << "Enter Bill Type (Gas/Electricity/Water/Internet-1/2/3/4):";
```

```
    cin >> a;
```

```
    if (a == 1)
```

```
        s = "Gas bill";
```

```
    else if (a == 2)
```

```
        s = "Electricity bill";
```

```
    else if (a == 3)
```

```
        s = "Water bill";
```

```
    else
```

```
        s = "Internet bill";
```

```
    cout << "Your " << s << ": ";
```

```
    cin >> tk;
```

```
    if (tk <= balance)
```

```
    {
```

```
        cout << "Are you sure(Y/N)? ";
```

```
        cin >> d;
```

```
        if (d == 'Y')
```

```
        {
```

otp:

```
x = OTP();
```

```
clock_t start = clock();
```

```
cout << "Enter OTP: ";
```

```
cin >> f;
```

```
clock_t end = clock();
```

```
if (((end - start) / 1000) > 120)
```

```
{
```

```
    cout << "OTP time has expired" << endl;
```

```
    goto otp;
```

```
}
```

```
if (f == x)
```

```
{
```

```
    balance = balance - tk;
```

```
    cout << "Bill payment is Successful" << endl;
```

```
    his[cnt] = make_pair(trxID(), s);
```

```
    hist[cnt] = make_tuple(tk, balance, getTime());
```

```
    cnt++;
```

```
}
```

```
else
```

```
    cout << "Invalid OTP....";
```

```
}
```

```
}
```

```
else
```

```
    cout << "Insufficient balance..." << endl;
```

```
cout << "Press any key go to main menu....." << endl;
```

```
getch();
```

```
system("cls");
```

```
select();  
}
```

```
void MyCash ::check()  
{  
    cout << "Balance: " << balance << endl;  
  
    cout << "Press any key go to main menu....." << endl;  
    getch();  
    system("cls");  
  
    select();  
}
```

```
void MyCash ::history()  
{  
    cout << "History is under construction " << endl;  
    cout << left << setw(10) << "Tran ID" << setw(20) << "Description" << setw(10) << "Amount" << setw(10) <<  
"Balance"  
        << "Date & Time" << endl;  
    for (int i = 0; i < cnt; i++)  
    {  
        cout << left << setw(10) << his[i].first << setw(20) << his[i].second;  
        cout << fixed << setprecision(2) << setw(10) << get<0>(hist[i]) << setw(10) << get<1>(hist[i]) << get<2>(hist[i])  
<< endl;  
    }  
  
    cout << "Press any key go to main menu....." << endl;  
    getch();  
    system("cls");  
    select();  
}
```

```
// Register ----->
```

```
void Register()
{
    string a;
    char b[100];
    int c, d, x, f, h;
    do
    {
        cout << "Enter Mobile No. (11-digit): ";
        cin >> a;
        if (a.length() != 11)
            cout << "Mobile number must be 11 digits.." << endl;
    } while (a.length() != 11);
    cin.ignore();
    h = search(a);
    if (h < 0)
    {
        cout << "Enter your name: ";
        cin.getline(b, 100);
        do
        {
            cout << "Enter pin no(5-dgit): ";
            c = getPin();
            cout << endl;
            cout << "Reconfirm your pin: ";
            d = getPin();
            cout << endl;
            if (c != d)
                cout << "Pins must be same" << endl;
        }
    }
}
```



```
} while (c != d);
```

```
otp:
```

```
x = OTP();
```

```
clock_t start = clock();
```

```
cout << "Enter OTP: ";
```

```
cin >> f;
```

```
clock_t end = clock();
```

```
if (((end - start) / 1000) > 120)
```

```
{
```

```
    cout << "OTP time has expired" << endl;
```

```
    goto otp;
```

```
}
```

```
if (x == f)
```

```
{
```

```
    total++;
```

```
    mem[total].setData(a, b, d, 0.0);
```

```
    cout << "Your Registration is successful " << endl;
```

```
}
```

```
else
```

```
{
```

```
    cout << "Invalid OTP...." << endl;
```

```
}
```

```
}
```

```
else
```

```
    cout << "Member is already exists..." << endl
```

```
    << endl;
```

```
;
```

```
cout << "Press any key go to main menu....." << endl;
```

```
getch();
```

```
    system("cls");  
}
```

```
int menu1(void)  
{  
    cout << "\033[0m\t*** MyCash Login***" << endl;  
    cout << "\t\t1. Log in" << endl;  
    cout << "\t\t2. Register" << endl;  
    cout << "\t\t3. exit" << endl;  
    cout << "Enter your choice: ";  
    int op;  
    cin >> op;  
    return op;  
}
```

```
int login()  
{  
    int p;  
    string m;  
    cout << "Enter mobile no: ";  
    cin >> m;  
    cout << "Enter PIN: ";  
    p = getPin();  
    cout << endl;  
    int b = search(m);  
    fin = b;  
    int a = mem[b].mpass(m, p);  
    if (a == 1)  
    {  
        cout << "Login is Successful" << endl;  
        select();  
    }
```

```

        return b;
    }
    else
    {
        cout << "Invalid login" << endl;
    }
    cout << "Press any key go to myCash menu...." << endl;
    getch();
    system("cls");
    return 0;
}

```

```

int select()
{
    int a = main_menu();
    // int b = login();
    if (a == 0 || a >= 10)
    {
        cout << "Invalid Option" << endl
            << endl;
        ;
        cout << "Press any key go to myCash menu...." << endl;
        getch();
        system("cls");
        select();
    }
    else
    switch (a)
    {
        case 1:
            mem[fin].update();

```

```
        break;
case 2:
    mem[fin].remove();
    break;
case 3:
    mem[fin].send();
    break;
case 4:
    mem[fin].cash_in();
    break;
case 5:
    mem[fin].cash_out();
    break;
case 6:
    mem[fin].paybill();
    break;
case 7:
    mem[fin].check();
    break;
case 8:
    mem[fin].history();
    break;
case 9:
    system("cls");
    return 0;
}
return 0;
}

int main_menu()
{
```

```

cout << "\t***** MyCash Menu *****" << endl;
cout << "\t\t1. Update Me" << endl;
cout << "\t\t2. Remove Me" << endl;
cout << "\t\t3. Send Money" << endl;
cout << "\t\t4. Cash-in" << endl;
cout << "\t\t5. Cash-out" << endl;
cout << "\t\t6. Pay Bill" << endl;
cout << "\t\t7. Check Balance" << endl;
cout << "\t\t8. History" << endl;
cout << "\t\t9. Logout" << endl;
cout << "Enter Your Option (1-9): ";

int s;

cin >> s;

system("cls");

return s;
}

```

```

int main()
{
    int num;

    for (;;)
    {
        num = menu1();
        if (num == 3)
        {
            insertFile();
            break;
        }

        switch (num)

```

```
{  
case 1:  
    login();  
    break;  
case 2:  
    Register();  
    break;  
default:  
    cout << "Invalid option" << endl;  
}  
}  
return 0;  
}
```

## Output:

1. MyCash Menu:

```
*** MyCash Login***
      1. Log in
      2. Register
      3. exit
Enter your choice: 2|
```

2. Register a new member:

```
Enter your choice: 2
Enter Mobile No. (11-digit): 01521788253
Enter your name: Tonmoy
Enter pin no(5-dgit): *****
Reconfirm your pin: *****
myCash OTP: 7510
Your OTP is valid for only 2 mins .....
Hurry up!.....
Enter OTP: 7510
Your Registration is successful
Press any key go to main menu.....
|
```

3. Login Form

```
Enter your choice: 1
Enter mobile no: 01521788253
Enter PIN: *****
Login is Successful
```

4. MyCash Menu:

```
***** MyCash Menu *****
      1. Update Me
      2. Remove Me
      3. Send Money
      4. Cash-in
      5. Cash-out
      6. Pay Bill
      7. Check Balance
      8. History
      9. Logout
Enter Your Option (1-9): |
```

5. Update a Member

```
Old name: Tonmoy
New name: Sourav
Old PIN(enter to ignore):
myCash OTP: 8871
Your OTP is valid for only 2 mins .....
Hurry up!.....
0
Enter OTP: 8871
Member update succesfully
Press any key go to main menu.....
|
```

6. Cash in

```
Enter Amount: 10000
Cash-in 10000
Are you sure(Y/N)? Y
Cash-in is Successful
Press any key go to main menu.....
|
```

7. Cash out

```
Enter Amount: 1000
Cash_out 1000
Are you sure(Y/N)? Y
myCash OTP: 9809
Your OTP is valid for only 2 mins .....
Hurry up!.....
Enter OTP: 9809
Cash-out is Successful
Press any key go to main menu.....
|
```

8. Paybill:

```
Enter Bill Type (Gas/Electricity/Water/Internet-1/2/3/4):2
Your Electricity bill: 200
Are you sure(Y/N)? Y
myCash OTP: 1018
Your OTP is valid for only 2 mins .....
Hurry up!.....
Enter OTP: 1018
Bill payment is Successful
Press any key go to main menu.....
|
```



9. Check Balance:

```
Balance: 8800
Press any key go to main menu.....
|
```

10. History:

| Tran ID | Description      | Amount   | Balance  | Date & Time              |
|---------|------------------|----------|----------|--------------------------|
| 26240   | Cash-in          | 10000.00 | 10000.00 | Tue Nov 21 02:11:12 2023 |
| 26835   | Cash Out         | 1000.00  | 9000.00  | Tue Nov 21 02:14:14 2023 |
| 27027   | Electricity bill | 200.00   | 8800.00  | Tue Nov 21 02:15:13 2023 |

```
Press any key go to main menu.....
|
```

11. Send Money:

```
Enter Destination no. (11-digit): 01521788253
Enter Amount: 100
Sending 100.00 to 01521788253
Are you sure(Y/N)? Y
myCash OTP: 3160
Your OTP is valid for only 2 mins .....
Hurry up!.....
Enter OTP: 3160
Send Money is Successful
Press any key go to main menu.....
|
```

12. Remove a member:

```
Enter PIN: *****
myCash OTP: 5129
Your OTP is valid for only 2 mins .....
Hurry up!.....
Enter OTP: 5129
Remove is succesful
Press any key go to main menu.....
```