Problem - 01 :

Problem Statement : Use the following class Test with the data members. Now write and necessary codes in class and main() do the following

1. Initialize private data members x and y to 0 when empty constructor is called
2. Initialize private data members x and y using parameterized constructor is called
3. Initialize private data members x and y from another object using copy constructor
4. The data member z keeps track of total objects created
5. Write a method to initialize x and y
6. Write a method to display data member z only
7. Write a method to display x,y and z where their values can't be changed
8. Create five objects
9. Find the sum of x
10. Find the object number whose y value is maximum
11. Write destructor

Source Code :

```
#include <bits/stdc++.h>
using namespace std;

class Bank{
    int acn;
    int balance;
    static int total;
    static int sum;
    static int mx;

public :
    Bank(){ // Default Constructor
        acn = 0;
        balance = 0;
        total++;
    }
    Bank(int x, int y){ // Parameter Constructor
```

```
        acn = x;
        balance = y;
        total++;
    }
    Bank(const Bank *ptr){ // Copy Constructor
        acn = ptr->acn;
        balance = ptr->balance;
        total++;
    }
    void SetData(int x, int y){ // Data Set Function
        acn = x;
        balance = y;
    }
    void GetSum(){ // Sum Function
        sum += balance;
    }
    void GetMax(){ // Max finding function
        mx = max(mx, balance);
    }
    void Show()const{ // Display all value without changing any
value
        cout << "acc = " << acn << '\n';
        cout << "balance = " << balance << '\n';
        cout << "No = " << total << '\n';
    }
    void ShowTotal(){ // Display total balance
        cout << "Total Balance : " << sum << '\n';
    }
    void ShowMax(){ // Display max balance
        cout << "Max Balance : " << mx << '\n';
    }
    void ShowMemberCnt(){ // Display member cnt
        cout << "Member Count = " << total << '\n';
    }
    ~Bank(){ // Destructor
        cout << "One account is closing\n";
    }
};

// Static member
int Bank::total = 0;
int Bank::sum = 0;
int Bank::mx = 0;
```

```
int main(void){
    int n;
    cout << "Enter Number of Account : ";
    cin >> n;
    Bank b[n];
    for (int i = 0; i < n; i++){
        int x, y;
        cout << "Acc No : ";
        cin >> x;
        cout << "Enter Balance : ";
        cin >> y;
        b[i].SetData(x, y);
    }
    for (int i = 0; i < n; i++){
        b[i].GetSum();
        b[i].GetMax();
    }
    cout << '\n';
    b->ShowTotal();
    b->ShowMax();
    b->ShowMemberCnt();
}
```

Input & Output :

```
Enter Number of Account : 5
Acc No : 1
Enter Balance : 100
Acc No : 2
Enter Balance : 200
Acc No : 3
Enter Balance : 300
Acc No : 4
Enter Balance : 400
Acc No : 5
Enter Balance : 500

Total Balance : 1500
Max Balance : 500
Member Count = 5
One account is closing
```

```
One account is closing
One account is closing
One account is closing
One account is closing
```

Problem - 02

Problem Statement : Write a class A with two data member a and b. Now set the values of a and b of an object obj1 by a setter method SetData() and copy the values of a and b of obj1 to another object obj2 by using copy constructor.

Source Code :

```cpp
#include <bits/stdc++.h>
using namespace std;

class A{
    int a, b;
public :
    void SetData(int x, int y){
    a = x;
    b = y;
    }
    A(){}
    A(const A *ptr){
        a = ptr->a;
        b = ptr->b;
    }
    void ShowData(){
        cout << "a : " << a << '\n';
        cout << "b : " << b << '\n';
    }
};

int main(void){
    A obj1;
    obj1.SetData(10, 20);
    A obj2(&obj1);
    cout << "obj1 data : \n";
    obj1.ShowData();
    cout << "obj2 data : \n";
```

```
    obj2.ShowData();
}
```

Input & Output :

```
obj1 data :
a : 10
b : 20
obj2 data :
a : 10
b : 20
```