Software Development Lab – II [15B17CI271]
Assignment Sheet
Week 4

Q1. WAP in C++ to create a class Wall having private data members length and height. Create a parameterized constructor and a copy constructor to initialize these private data members. Define a member function to return the area. Demonstrate the working of each member function.

```
#include <iostream>
using namespace std;

class Wall
{
private:
int length;
int height;
public:
Wall(int a, int b)
{
length = a;
height = b;
}
int area()
{
int ar = length*height;
return ar;
}
};
int main()
{
int m, n;

cout << "Enter the length and height of the wall " << endl;
cin >> m;
cin >> n;

Wall obj(m,n);

int ar = obj.area();
cout << "The area of the wall is " << ar << endl;
return 0;
}
```

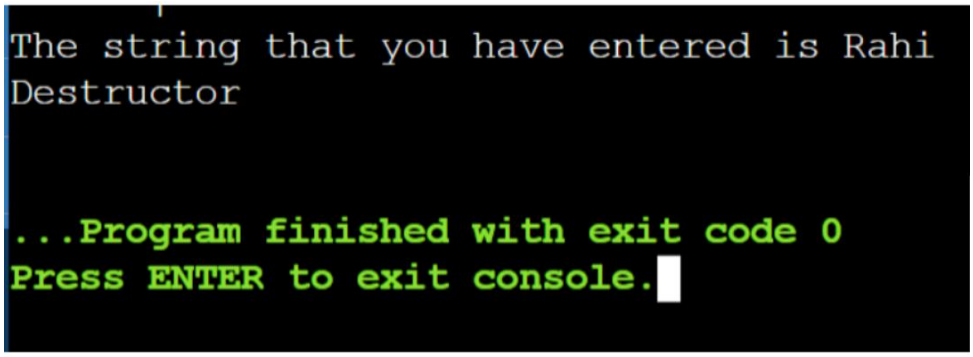
```
Enter the length and height of the wall
8
9
The area of the wall is 72
```

Q2. Create a class String with two private members (char * s; and int size;) to store a string and it's length. Define a constructor, a copy constructor and a destructor. Add a member function that prints the string. Demonstrate the working of each function.

```
#include <iostream>
using namespace std;

class String
{
private:
char *s;
int size;

public:
String()
String(char *a, int b)
{
s = a;
size = b;
}
String(String &obj)
{
String temp;
temp.s = obj.s;
temp.size = obj.size;
}
void print()
{
cout << "The string that you have entered is " << s << endl;
}
String()
{
cout << "Destructor" << endl;
}
};
int main()
{
obj.print();
char *a = "Rahi";
String obj(a,4);
return 0;
}
```



Q3. What is the output of the following program?

```
#include <iostream>
using namespace std;
class Demo
{
private:
static int X;
static int Y;
public:
static void Print()
{
cout <<"Value of X: " << X << endl;
cout <<"Value of Y: " << Y << endl;
}};
//static data members initializations
int Demo :: X =10;
int Demo :: Y =20;
int main()
{
Demo OB;
cout<<"Printing through object name:"<<endl;
OB.Print();
cout<<"Printing through class name:"<<endl;
Demo::Print();
return 0;
}
```

Output:

```
Printing through object name:
Value of X: 10
Value of Y: 20
Printing through class name:
Value of X: 10
Value of Y: 20
```

Q4. Define two classes ClassA and ClassB. ClassA has a private integer numA and ClassB has a private integer numB. Use friend function to add numA and numB of these classes.

```
#include <iostream>
using namespace std;

class A;
class B;
{
int numA;
public:
(int a)
{
numA = a;
}
friend void print(A obj,B obj2);
};
class B
{
int numB;
public:
B(int b)
{
numB = b;
friend void print(A obj, B obj2);
};
void print(A obj, B obj2)
{
cout << obj.numA + obj2.numB << endl;
}
int main()
{
A obj(4);
B obj2(69);
print(obj, obj2);
return 0;
}
```

```
73
[Finished in 1.378s]
```