C++ - LAB-3: **Functions Overloading and Function templates**

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Date: 01/02/2021

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Q-1: Write a C++ Program to illustrate function with default arguments

ANS: SOURCE CODE:

```
#include <bits/stdc++.h>
using namespace std;
class myclass
{
    string name;
    int age;
    public:
    void display(string, int);
};

void myclass :: display(string name="NotDecided", int age=0) // default args.
{
    cout << "Student Name: " << name << ", Age :" << age << "\n";
}

int main()
{
    myclass obj;
    obj.display("Vivaan", 19);
    obj.display("Ram", 22);
    obj.display("Rahul", 21);
    obj.display();
    return 0;
}
```

OUTPUT:

Student Name: Vivaan, Age :19

Student Name: Ram, Age :22

Student Name: Rahul, Age :21

Student Name: NotDecided, Age :0

Q-2: Write a C++ Program to Illustrate function pass by reference

ANS: SOURCE CODE:

```
#include <bits/stdc++.h>
using namespace std;
class myclass
{
    int a,b;
    public:
    void swap(int &, int &);
};


void myclass :: swap(int &a, int &b)
{
    int z;
    z=a;
    a=b;
    b=z;
}
int main()
{
    int x, y;
    cout << "Enter num1 and num2 resp.: \n";
    cin >> x >> y;
    cout << "Before Swap:: num1 = " << x << ", num2= " << y << "\n";
    myclass obj;
    obj.swap(x, y);


    cout << "After Swap:: num1 = " << x << ", num2 = " << y << "\n";
    return 0;
}
```

OUTPUT:

Enter num1 and num2 resp.:

4 5

Before Swap:: num1 = 4, num2= 5

After Swap:: num1 = 5, num2 = 4

Q-3: Write a C++ Program to illustrate function overloading

ANS: SOURCE CODE:

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

class myclass
{
    int a, b;
    float x, y;
    public:
    int add(int , int);
    float add(float, float);
};
int myclass :: add(int a, int b)
{
    return a+b;
}
float myclass :: add(float x, float y)
{
    return x+y;
}


int main()
{
    int a,b;
    cout << "Enter two int numbers resp.: \n";
    cin >> a >> b;
    float x,y;
    cout << "Enter two float numbers resp.: \n";
    cin >> x >> y;

    myclass obj;
    cout << "Sum of int = " << obj.add(a, b)<< "\n";
    cout << "Sum of float = " << obj.add(x,y) << "\n";
```

```
    return 0;
}
```

OUTPUT:

Enter two int numbers resp.:

3 4

Enter two float numbers resp.:

3.4 4.4

Sum of int = 7

Sum of float = 7.8