Polymorphism: polymorphism if we use the same thing for different forms or different purpose called as polymorphism.

There are two types of polymorphism?

a) Compile time polymorphism: compile time polymorphism means we decide function calling at compile time called as compile time polymorphism.

There are two types of compile time polymorphism in C++

i) Function overloading

ii) Operator overloading

b) Run time polymorphism: run time polymorphism means we decide the function calling at program run time

i) Function overriding.

Function Overloading

Q. what is the function overloading

Function overloading means if we define the multiple function using same name with different parameter, with different data type with different parameter sequence called as function overloading.

```
void add(int x,int y)
{
}
void add(float x,int y)
{
}
void add(int x,float y)
{

}
```

If we want to work with function overloading we have to know the some important points.

1) Function name should be same

2) Parameter type or parameter sequence or number of parameter must be different in every function definition.
3) In The case of function overloading return type is not considered.
Means we can give the different return type to every function definition not need to give same return type to every function

```
int add(int x,int y)
{
}
void add(int x,float y)
{
}
float add(float x,float y)
{
}
```

4) In the case of function overloading which function gets executed or call is depend on parameter type its sequence and its data type.
Following example describe the meaning of above statement

```
void add(int x,int y)
{  cout<<"Addition of integer is  "<<x+y;
}
void add(float x,float y)
{ cout<<"Addition of float is  "<<x+y;
}
void main()
{
   clrscr();

   add(5.4f,6.5f); //call floating function
   add(500,200);  // call integer function
   getch();
}
```

Example

```
#include<iostream.h>
#include<conio.h>
void add(int x,int y)
{ cout<<"Addition of integer is "<<x+y<<"\n";
}
void add(float x,float y)
{ cout<<"\n\n\nAddition of float is "<<x+y<<"\n";
}
void main()
{
   clrscr();

   add(5.4f,2.5f);
   add(100,200);
   getch();
}
```

Output

```
Addition of float is 7.9
Addition of integer is 300
```

Can you give real time example where you can use the function overloading in project?

Scenario: suppose consider we are working of admission module of particular institute project**.**

Institute runs the courses two types of people

a) Courses for fresher

b) Courses for professional.

As per this example we have to create the two functions for admission purpose

a) void fresherAdmission()

b) void professionalAdmission()

So better way writing two different function for admission process we use the admission () function for both type of admission

Function for Fresher Admission

```
void admission(String name, int passyear, float per,String
cname,String address)
{
}
void admission (int yearOfExp,String name, String compName,int
package,int expPackage)
```

{
}