SDF II(15B11CI211)

EVEN Semester 2021

2nd Semester , First Year

Jaypee Institute Of Information Technology (JIIT), Noida

Lecture 6 – Constructor

Constructor

- A constructor is a special member function of a class.
- Its name is same as the class name.
- The main task of constructor is to initialize the class objects
- Constructor can be defined inside or outside of a class.
- Constructor can be private, protected and public.

Constructor example

- Class Student {

```
int  rollno;
float marks;
public:
. .  . .
Student()          // Constructor
{ roll no=0;
Marks = 0.0
}}
```

- So when we create an object for Student class, a constructor will automatically call.
- Student::Student()

- **Point to remember**
- **Constructor and Destructor have no return type , not even void**

```
class Number {
      public:                          // Access specifier
        int  x;
        Number (); // Constructor declaration
    };

    // Constructor definition outside the class
     Number :: Number  {
     X=10;
    }
     Number ::display()

      {    cout<<x;}
    int main() {
      // Create Number objects and call the constructor with different values
      Number  Obj1();
      Number Obj2(20);

Obj1.display();

Obj2.display();

return(0);
    }
```

```
class Car {
    public:                     // Access specifier
      string brand;
      string model;
      int  year;
      Car(string x, string y, int z);          // Parameterized Constructor declaration
  };
  Car::Car(string x, string y, int z) {            // Constructor definition outside the class
    brand = x;
    model = y;
    year = z;
  }
  int main() {
    Car carObj1("BMW", "X5", 1999);          // Create Car objects and call the constructor with different values
    Car carObj2("Ford", "Mustang", 1969);
    cout << carObj1.brand << " " << carObj1.model << " " << carObj1.year << "\n";
    cout << carObj2.brand << " " << carObj2.model << " " << carObj2.year << "\n";
    return 0;
  }
```


https://www.w3schools.com/cpp/cpp_constructors.asp

Default Constructor

- Constructor with no parameter is called default constructor.
- If a class does not specify any constructor so compiler automatically called default constructor.

Parameterized Constructor

```
class Bank {
Bank(float b, float a)                // parameterized constructor
{
bal=b;
amt=a;
}
```

Difference between Method and Constructor

- A method can have any name but constructor name should be same as class name.
- A method must have a return type but constructor does not have
- A method is explicitly called whereas a constructor can call automatically.

References

- geeksforgeeks.org/constructors-c/
- S. Arora, Computer science in C++. 2002