



GENERAL SIR JOHN KOTELAWALA DEFENCE UNIVERSITY

FACULTY OF COMPUTING

DEPARTMENT OF INFORMATION TECHNOLOGY

IT1093 - Object Oriented Programming

Constructors - 01

Lab Sheet – 02

Index No - D/BIS/23/0005

Default vs Parameterized Constructor

1) Compare the outputs and based on the Output explain the difference between Default and Parameterized Constructor.

Default Constructor :-

- Both id & name are not explicitly set.
- They take on their default values.

Parameterized Constructor :-

- The constructor takes initial values for id & name as arguments and assigns them to the instance variables.
- The output displaying the actual values provides during object creation.

2) What is the purpose of Parameterized Constructor?

- To allow you to customize the initial state of an object by passing values for its attributes at the time of creation.
- Custom Initialization
- Flexibility
- Encapsulation and Data Integrity
- Readability
- Constructor Overloading
- Initialization Checks

Questions to Test your Knowledge

1) What is the difference between Class Attribute, Parameter and Argument?

- Class Attribute – A shared variable or property.
- Parameter - Variable used in the specification of a function or method to denote an expected input.
- Argument - The actual value supplied to a function or method when it is called, analogous to a parameter.

2) List 02 rules for defining a Constructor.

- The constructor must be named after the class to which it belongs, When a class object is created, it is automatically called.
- There is no return type for the constructor, not even void.
- The constructor can be parameterized (parameterized constructor) or default (no parameters).

3) Can we develop classes with no constructor? What will happen when creating objects with no Constructors defined?

- Yes
- Java provides a default constructor automatically.

4) If there is a default constructor, will the compiler create a constructor automatically?

- Yes
- Parameterless and initializes the instance variables of the class to their default values (Numeric type '0' , Objects 'null')

5) Can we have both default and parameterized constructor within the same class?

- Yes

```
public class Person {  
    String name;  
    int age;  
  
    // Default constructor  
    public Person() {  
        name = "John Doe";  
        age = 30;  
    }  
}
```

```

// Parameterized constructor
public Person(String name, int age) {
    this.name = name;
    this.age = age;
}

public void display() {
    System.out.println("Name: " + name);
    System.out.println("Age: " + age);
}

public static void main(String[] args) {
    // Creating an object using the default constructor
    Person person1 = new Person();
    System.out.println("Person 1 (Default Constructor):");
    person1.display();

    // Creating an object using the parameterized constructor
    Person person2 = new Person("Alice Smith", 25);
    System.out.println("\nPerson 2 (Parameterized Constructor):");
    person2.display();
}
}

```

Output;

```

Person 1 (Default Constructor):
Name: John Doe
Age: 30

Person 2 (Parameterized Constructor):
Name: Alice Smith
Age: 25

```