

Assignment – Day 4

Topic: Constructors, Inheritance, and Method Overriding

Q1. Write a Java program to demonstrate parameterized constructor.

```
class Student {  
    String name;  
    int age;  
  
    Student(String n, int a) {  
        name = n;  
        age = a;  
    }  
  
    void display() {  
        System.out.println("Name: " + name + ", Age: " + age);  
    }  
  
    public static void main(String[] args) {  
        Student s1 = new Student("Sujal", 20);  
        s1.display();  
    }  
}
```

Output:

Name: Sujal, Age: 20

Q2. Write a program to show the use of default and parameterized constructors.

```
class Demo {  
    int value;  
  
    Demo() {  
        value = 10;  
    }  
  
    Demo(int v) {  
        value = v;  
    }  
  
    void display() {  
        System.out.println("Value = " + value);  
    }  
  
    public static void main(String[] args) {
```

```
Demo d1 = new Demo();
Demo d2 = new Demo(25);
d1.display();
d2.display();
}
}
```

Output:

```
Value = 10
Value = 25
```

Q3. Write a Java program to demonstrate single inheritance.

```
class Parent {
void showParent() {
System.out.println("This is parent class");
}
}
```

```
class Child extends Parent {
void showChild() {
System.out.println("This is child class");
}
}
```

```
public static void main(String[] args) {
Child c = new Child();
c.showParent();
c.showChild();
}
}
```

Output:

```
This is parent class
This is child class
```

Q4. Write a program to demonstrate method overriding in Java.

```
class Vehicle {
void run() {
System.out.println("Vehicle is running");
}
}
```

```
class Bike extends Vehicle {
void run() {
System.out.println("Bike is running safely");
}
```

```
}  
  
public static void main(String[] args) {  
    Bike b = new Bike();  
    b.run();  
}  
}
```

Output:

Bike is running safely

Q5. Write a Java program using super keyword to call parent class method.

```
class Animal {  
    void sound() {  
        System.out.println("Animal makes sound");  
    }  
}
```

```
class Dog extends Animal {  
    void sound() {  
        super.sound();  
        System.out.println("Dog barks");  
    }  
}
```

```
public static void main(String[] args) {  
    Dog d = new Dog();  
    d.sound();  
}  
}
```

Output:

Animal makes sound
Dog barks

Q6. Write a Java program to show multilevel inheritance.

```
class GrandParent {  
    void grandParentMethod() {  
        System.out.println("I am grandparent");  
    }  
}
```

```
class Parent extends GrandParent {  
    void parentMethod() {  
        System.out.println("I am parent");  
    }  
}
```

```
}  
}
```

```
class Child extends Parent {  
void childMethod() {  
System.out.println("I am child");  
}
```

```
public static void main(String[] args) {  
Child c = new Child();  
c.grandParentMethod();  
c.parentMethod();  
c.childMethod();  
}  
}
```

Output:

```
I am grandparent  
I am parent  
I am child
```