Object Oriented Programming - Java

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Java Overview

- Java programming language was originally developed by Sun Microsystems.
- Initiated by James Gosling.
- Released in 1995 as core component of Sun Microsystems' Java platform (Java 1.0 [J2SE]).
- Java is guaranteed to be Write Once, Run Anywhere.

Java Overview

Java is -

- Object Oriented
- Platform Independent
- Simple and Secure
- Multithreaded and Distributed

Tools You Will Need:

- JDK 1.8
- Netbeans 8.2 full version

Java - Basic Syntax

```
public class MyFirstJavaProgram {

    /* This is my first java program.
     * This will print 'Hello World' as the output
     */

    public static void main(String []args) {
        System.out.println("Hello World"); // prints Hello World
    }
}
```

When the above code is compiled and executed, it produces the following result:

```
javac MyFirstJavaProgram.java
java MyFirstJavaProgram
Hello World
```

Java - Object and Classes: Part I

```java
package ewu.cse;

public class Student {
    private int id;
    private String name;
    private double cgpa;

    public Student() {
    }

    public Student(int id) {
        this.id = id;
    }

    public Student(int id, String name, double cgpa) {
        this.id = id;
        this.name = name;
        this.cgpa = cgpa;
    }
```

Java - Object and Classes: Part II

```
public int getId() {
    return id;
}

public String getName() {
    return name;
}

public double getCgpa() {
    return cgpa;
}

public void setId(int id) {
    this.id = id;
}

public void setName(String name) {
    this.name = name;
```

Java - Object and Classes: Part III

```
}

public void setCgpa(double cgpa) {
    this.cgpa = cgpa;
}

public static void main(String[] args) {
    Student s1 = new Student();
    s1.setId(1);
    s1.setName("Karim");
    s1.setCgpa(3.9);

    String sname = s1.getName();
    double scgpa = s1.getCgpa();

    System.out.println("Name: "+sname+ " cgpa: "+scgpa);

    Student s2 = new Student(2, "Fatema", 3.95);
```

```
        sname = s2.getName();
        scgpa = s2.getCgpa();

        System.out.println("Name: "+sname+ " cgpa: "+scgpa);

    }

}
```

When the above code is compiled and executed, it produces the following result:

```
Name: Karim cgpa: 3.9
Name: Fatema cgpa: 3.95
```

Java - Variable Types : Part I

```
package ewu.cse;

public class Employee {
    private int empId;  //Instance variable
    private String empName; //Instance variable

    // salary  variable is a private static/class variable
    private static double salary;

    // DEPARTMENT is a constant
    public static final String DEPARTMENT = "CSE";

    public static void main(String args[]) {
        salary = 100000;
        Employee.salary = 200000;
        Employee e1 = new Employee();
        e1.empId = 1;
        e1.empName = "Rahim";
        String eName = e1.empName; //Local variable
```

Java - Variable Types : Part II

```
        System.out.println(DEPARTMENT + "avg salary:" + salary);

        Employee e2 = new Employee();
        e2.empId = 2;
        e2.empName = "Karim";

        System.out.println(DEPARTMENT + "avg salary:" + salary);

    }
}
```

When the above code is compiled and executed, it produces the following result:

```
CSE average salary:200000.0
CSE average salary:200000.0
```

References

 DEITEL, Java How to Program, 11/e