- How does Java different from C++ and Python in terms of compilation and execution? (Hints: the two steps that you must perform to run your code.)
- What are the values of each variable after executing the following statements

```
double num = 1.005e2;
int x = 2;
float y = (int) num * (float) x;
int z = x++ * 3 - --x;
System.out.println("x = " + ++x);
System.out.println("y = " + y);
System.out.println("z = " + z--);
```

- What are the values of each variable after executing the following statements

```
int code = 416;
switch (code)
{
    case 403:
        System.out.println("Calgary");
        break;        // What if this line is removed?
    case 708:
        System.out.println("Edmonton");
        break;
    case 416:
        System.out.println("Toronto");
        break;         // What if this line is removed?
    case 604:
        System.out.println("Vancouver");
        break;
    default:
        System.out.println("Unknown area code:" + code);
}
```

- Re-write the above statement using the "if-else-if" construct
- How many times the loop body will be executed?

```
int num = 100;
int total = 0;
int i = 0;
do
{
    total = total + i;
    i++;
} while (i <= num);
```

- Re-write the above code segment using the **for** loop construct.
- Re-write the above code segment using the **while** loop construct.
- Try to print:
  **I said,**
  **"Don't do it"**

❖ Identify the body of a class definition, the body of a method, attributes, and local variables

❖ For each attribute and local variable, identify its scope.

```
1    public class Car
2    {
3        public String model;
4        private int odometer;
5        public void addToOdometer(int city, int road)
6        {
7            odometer += city + road;
8        }
9        private String plate;
10       public void setPlate(String plate)
11       {
12           plate = plate;
13       }
14   }
```

❖ Assuming the following methods are already included in the same class definition:
```
public double method()
public void method(int)
```

❖ Identify invalid method overload:
```
public void method()
public int method()
private void method()
public int method(int, int)
public int method(int)
```