Constructor in Java

Constructor in java is a *special type of method* that is used to initialize the object.

Java constructor is *invoked at the time of object creation*. It constructs the values i.e. provides data for the object that is why it is known as constructor.

Rules for creating java constructor

1. Constructor name must be exactly the same as its class name
2. Constructor must have no explicit return type

Types of java constructors

1. Default constructor – this is when there is no constructor written by the programmer. Java creates the object with the default values (this can lead to many problems and should be avoided).

```
public class My2DPoint  {
  double x,y;  }
```

2. Non–Parameterized constructor – a constructor that does not have any parameters. Default values are hard coded into the constructor.

```
public class My2DPoint  {
  double x,y;

  // constructor
  public My2DPoint () {
    x = 3;
    y = 5;
  }
}
```

3. Parameterized constructor – a constructor with parameters that are used at the time the object is created.

```
public class My2DPoint  {
  double x,y;

  // constructor
  public My2DPoint (double a, double b) {
    x = a;
    y = b;
  }
}
```

Constructor Overloading

Constructor overloading is possible with constructors and works the same way as methods (do you remember how to overload methods?).

Exercises

Constructors

Write 3 constructors for the My2dPoint class that accept 1) zero data, 2) 1 double, and 3) 2 doubles. All default values should be zero.

Writing Method for Classes.

Write a method for the My2dPoint that does not receive any data and returns the distance of the point to the origin (0,0). Test your method using a test program.

Write a method for the My2dPoint that does not receive any data and returns an integer that indicates which quadrant the point is in; valid quadrants are 1, 2, 3, 4. Test your method using a test program.

Write a method for the My2dPoint that accepts another point and returns the distance the two points. Test your method using a test program.