

# Quiz Preparation for Week 5

---

## Concepts

- Objects
- Constructors
- Encapsulation

## Warm-ups problems

1. What is an object in Java?
2. What is a Constructor?
3. How many constructors can a class have? What does constructor overloading mean?
4. What does Encapsulation mean?

## Combining it all together!

We are going to define a class named GradeReport.

1. Define a class named GradeReport. Your class should store two private variables name and gpa

► Spoiler!

```
public class GradeReport {  
    private String name;  
    private double gpa;  
}
```

2. Add a constructor to your class definition that takes in two parameters: a name and a gpa value, and sets the stored values of name and gpa to the values in the parameters

► Spoiler!

```
public class GradeReport {  
    private String name;  
    private double gpa;  
    public GradeReport (String n, double g) {  
        //you can add assert statements to check for invalid inputs, but for now we  
        are just going to assume these are valid.  
        name = n;  
        gpa = g;  
    }  
}
```

3. Add a getName and a getGPA function that returns the name and gpa values respectively

► Spoiler!

```
public class GradeReport {  
    private String name;  
    private double gpa;  
}
```

```

    public GradeReport (String n, double g) {
        //you can add assert statements to check for invalid inputs, but for now we
        are just going to assume these are valid.
        name = n;
        gpa = g;
    }
    public String getName() {
        return name;
    }
    public double getGPA() {
        return gpa;
    }
}

```

4. Add two functions setName and setGPA that take in a parameter for a name and gpa respectively and change the value of name and gpa respectively. These functions don't return anything.

► Spoiler!

```

public class GradeReport {
    private String name;
    private double gpa;
    public GradeReport (String n, double g) {
        //you can add assert statements to check for invalid inputs, but for now we
        are just going to assume these are valid.
        name = n;
        gpa = g;
    }
    public String getName() {
        return name;
    }
    public double getGPA() {
        return gpa;
    }
    public void setName(String n) {
        name = n;
    }
    public void setGPA(double g) {
        gpa = g;
    }
}

```