Java Objects Part 1 Notes

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1 Welcome Back

- *STRING.toLowerCase()*
  - Turns string into lowercase letter
- *STRING.contains(...)*
  - checks if value ... is contained inside *String*

2 Quiz 1

1. Please fill in the correct answer in each blank provided below.

```
String someWords = "These are words";
someWords.______("words");

```

Answer:

```
String someWords = "These are words";
someWords.contains("words");

```

2. The boolean datatype is used to store:

   A. numbers
   B. text

C. true or false values

Answer: C

3. Please fill in the correct answer in each blank provided below.

What operator do we use to ensure that both of these conditions are met:

```
    boolean isRefreshed = true;
    boolean isReadyToGetStarted = true;
    boolean shouldContinue = isRefreshed______isReadyToGetStarted;

```

Answer:

```
    boolean isRefreshed = true;
    boolean isReadyToGetStarted = true;
    boolean shouldContinue = isRefreshed && isReadyToGetStarted;

```

4. Please fill in the correct answer in each blank provided below.

```
    int weightOfCraigsKid = 50;
    int weightMonty = 130;
    if (weightMonty ______ weightOfCraigsKid) {
        console.printf("Whoa that's a huge dog!");
    }

```

Answer:

```
    int weightOfCraigsKid = 50;
    int weightMonty = 130;
    if (weightMonty > weightOfCraigsKid) {
        console.printf("Whoa that's a huge dog!");
    }

```

5. To define a new variable to store a name it would look something like this:

A. String firstName = "Bob";

B. "Bob" = first.name

C. firstName = "Bob";

D. first_name = 'Bob'

Answer: A

6. The boolean datatype is used to store:

   A. numbers
   B. text
   C. true or false values

   Answer: C

3 Creating Classes

```
class PezDispenser {  // <- 1. Class is created in a separate and matching file :)
    String characterName = "Yoda";
}

```

Listing 1: lesson_3/PezDispenser.java

```
import java.io.Console;

public class Example {
    public static void main(String[] args) {

        System.out.println("We are making a new PEZ dispenser");

        PezDispenser dispenser = new PezDispenser(); // <- 2. And is used here :)

        System.out.printf("The dispenser is %s", dispenser.characterName);
        ...
    }
}

```

Listing 2: lesson_3/Example.java

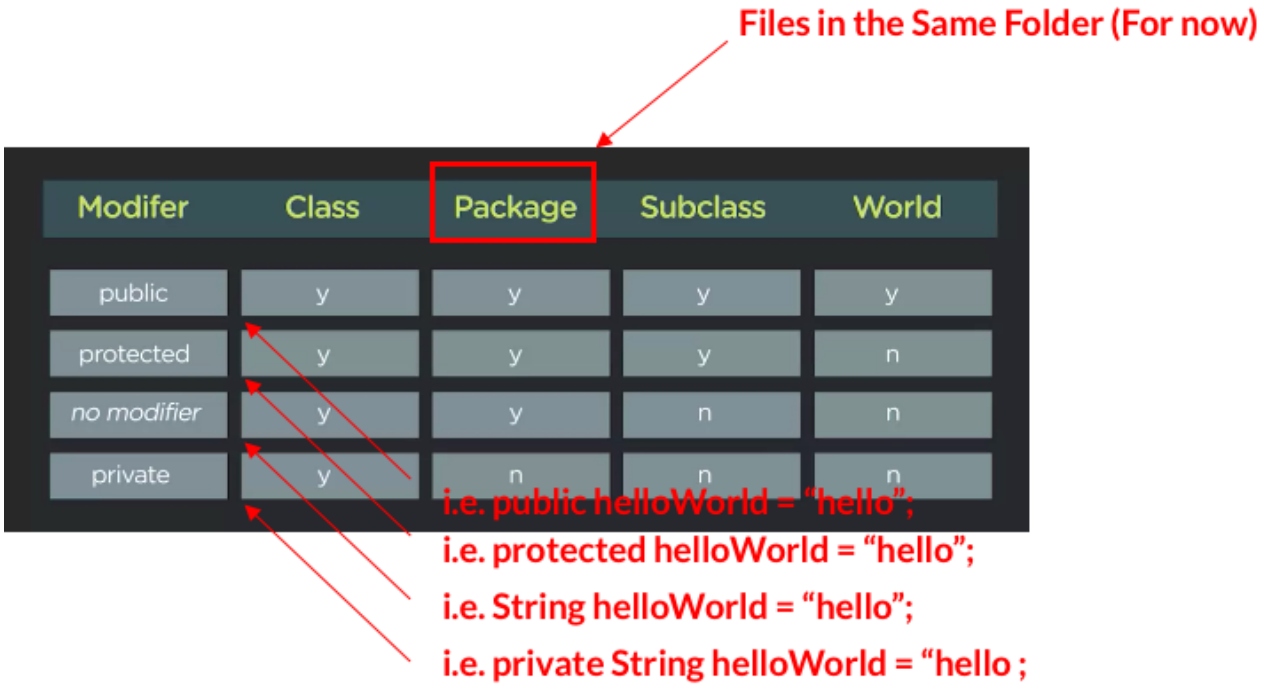
Notes:

- Files can be compiled and displayed by typing *javac Example.java && java Example* in terminal

4 Exercise 1

- Solution included in *exercise_1.java*

5 Access Modifiers



- Determines who is intended to access the information
- Adding access modifiers to attributes and methods in class is called **Encapsulation**

```
1    class PezDispenser {
2        private String characterName = "Yoda"; // <- 1. attribute is
     turned private
3    }
4
```

Listing 3: lesson_5/PezDispenser.java

```
1    import java.io.Console;
2
3    public class Example {
4        public static void main(String[] args) {
5
6            System.out.println("We are making a new PEZ dispenser");
7
```

```
8             PezDispenser dispenser = new PezDispenser();
9
10            System.out.printf("The dispenser is %s", dispenser.
    characterName); // <- 2. and it can't be accessed outside of class
11        }
12    }
13
```

Listing 4: lesson_5/Example.java

Notes:

- Files can be compiled and displayed by typing *javac Example.java && java Example* in terminal

6 Exercise 2

- Solution included in *exercise_2.java*

7 Methods

- is a collection of statements that are grouped together to perform an operation
- is like *verb*
- *ACCESS_MODIFIER DATA_TYPE get<ATTRIBUTE_NAME >* is called **getter**

```
1    public class PezDispenser {
2        private String characterName = "Yoda";
3
4        public String getCharacterName() { // <- 1. Getter method added
    here
5            return characterName;
6        }
7    }
8
```

Listing 5: lesson_7/PezDispenser.java

```
import java.io.Console;

public class Example {
    public static void main(String[] args) {

        System.out.println("We are making a new PEZ dispenser");

        PezDispenser dispenser = new PezDispenser();

        System.out.printf("The dispenser is %s", dispenser.
getCharacterName()); // <- 2. And is used here
    }
}

```

Listing 6: lesson_7/Example.java

Notes:

- Files can be compiled and displayed by typing *javac Example.java && java Example* in terminal

8 Exercise 3

- Solution included in *exercise_3.java*

9 Constructors

- is a method that will run when class is instantiated.
- is created by writing a method with the same name as class
- *this* is like *self* in python

```
public class PezDispenser {
    private String characterName = "Yoda";

    public PezDispenser(String characterName) {
        this.characterName = characterName;
    }

    public String getCharacterName() {
        return characterName;
```

```
10          }
11      }
12
```

Listing 7: lesson_9/PezDispenser.java

```
1   import java.io.Console;
2
3   public class Example {
4       public static void main(String[] args) {
5
6           System.out.println("We are making a new PEZ dispenser");
7
8           PezDispenser dispenser = new PezDispenser("Yoda");
9
10          System.out.printf("The dispenser is %s", dispenser.
    getCharacterName()); // <- 2. And is used here
11      }
12  }
13
```

Listing 8: lesson_9/Example.java

Notes:

- Files can be compiled and displayed by typing *javac Example.java && java Example* in terminal

10 Exercise 4

- Solution included in *exercise_4.java*

11 Final

- Value can only be set once
- Doesn't allow anymore assignments afterwards

```
1       public class PezDispenser {
2           final private String characterName; // <- Here :)
3
4           public PezDispenser(String characterName) {
5               this.characterName = characterName;
```

```
6         }
7
8         public String getCharacterName() {
9             return characterName;
10        }
11    }
12
```

Listing 9: lesson_11/PezDispenser.java

Notes:

- Files can be compiled and displayed by typing *javac Example.java && java Example* in terminal

12 Quiz 1

1. Which keyword do you use to ensure that variables once assigned cannot be re-assigned?

   A. final
   B. protected
   C. double

   Answer: A

2. What is a reason you might want to use the **final** keyword?

   A. To end the class completely
   B. To express that this is the last time the variable should ever be used
   C. To express that a value cannot be changed once assigned

   Answer: C

3. You can declare a final variable and later initialize it.

   A. True
   B. False

   Answer: A