Java Fundamentals 4-4

Strings Practice Activities

Lesson Objectives:

• Instantiate (create) a String

• Describe what happens when a String is modified

• Use the + and += operators for concatenating Strings

• Interpret escape sequences in String literals

• Recognize the difference between a String and a primitive char data type

• Test Strings with the compareTo() and equals() method

• Describe why the == operator does not always work when testing String equality

• Use String methods length(), substring(), indexOf(), and charAt()

Try It/Solve It:

1. Write three different ways to declare and instantiate a String object called “myString” and containing “abc”.

Using a string literal:

String myString = "abc";

```
public class StringExample1 {
    public static void main(String[] args) {
        String myString = "abc";
        System.out.println(myString);
    }
}
```

Output:

```
abc
```

Using the new keyword with a string literal:

String myString = new String("abc");

```
public class StringExample2 {
    public static void main(String[] args) {
        String myString = new String("abc");
        System.out.println(myString);
    }
}
```

Output:

```
abc
```

Using a character array:

```
public class StringExample3 {
    public static void main(String[] args) {
        char[] charArray = {'a', 'b', 'c'};
        String myString = new String(charArray);
        System.out.println(myString);
    }
}
```

Output:

```
abc
```

2.Given the three String objects below, what will each of the following return?

String s1 =“ABC”;

String s2 = new String(“DEF”);

String s3 = “AB” + “C”;

a. s1.compareTo(s2);

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

```
        String s1 = "ABC";
        String s2 = new String("DEF");
        int result = s1.compareTo(s2);
        System.out.println("s1.compareTo(s2): " + result);

    }
}
```

Code and output:

```
1  package strings;
2
3  public class compare {
4          public static void main(String[] args) {
5              String s1 = "ABC";
6              String s2 = new String("DEF");
7              int result = s1.compareTo(s2);
8              System.out.println("s1.compareTo(s2): " + result);
9          }
10     }
11
12
13
14
```

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<terminated> compare [Java Application] C:\Users\e020ax\.p2\pool\plugins\org.eclipse.justj.openjdk.hot

```
s1.compareTo(s2): -3
```

b. s2.equals(s3);

```
public class CompareStrings {
    public static void main(String[] args) {
        String s1 = "ABC";
        String s2 = new String("DEF");
        String s3 = "AB" + "C";
        boolean result = s2.equals(s3);
        System.out.println("s2.equals(s3): " + result);
        // Output will be false because "DEF" is not equal to "ABC".
    }
}
```

Code and output:

```
1  package strings;
2
3  public class compare {
4          public static void main(String[] args) {
5              String s1 = "ABC";
6              String s2 = new String("DEF");
7              String s3 = "AB" + "C";
8              boolean result = s2.equals(s3);
9              System.out.println("s2.equals(s3): " + result);
10         }
11     }
12
13
14
15
```

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```
<terminated> compare [Java Application] C:\Users\e020ax\.p2\pool\plugins\org.eclipse.justj.op
s2.equals(s3): false
```

c. s3 == s1;

```
public class CompareStrings {
    public static void main(String[] args) {
        String s1 = "ABC";
        String s2 = new String("DEF");
        String s3 = "AB" + "C";
        boolean result = s3 == s1;
        System.out.println("s3 == s1: " + result);
    }
}
```

Code and output:

```
1  package strings;
2
3  public class compare {
4          public static void main(String[] args) {
5              String s1 = "ABC";
6              String s2 = new String("DEF");
7              String s3 = "AB" + "C";
8              boolean result = s3 == s1;
9              System.out.println("s3 == s1: " + result);
10         }
11     }
12
13
14
15
16
```

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```
<terminated> compare [Java Application] C:\Users\e020ax\.p2\pool\plugins\org.eclipse
s3 == s1: true
```

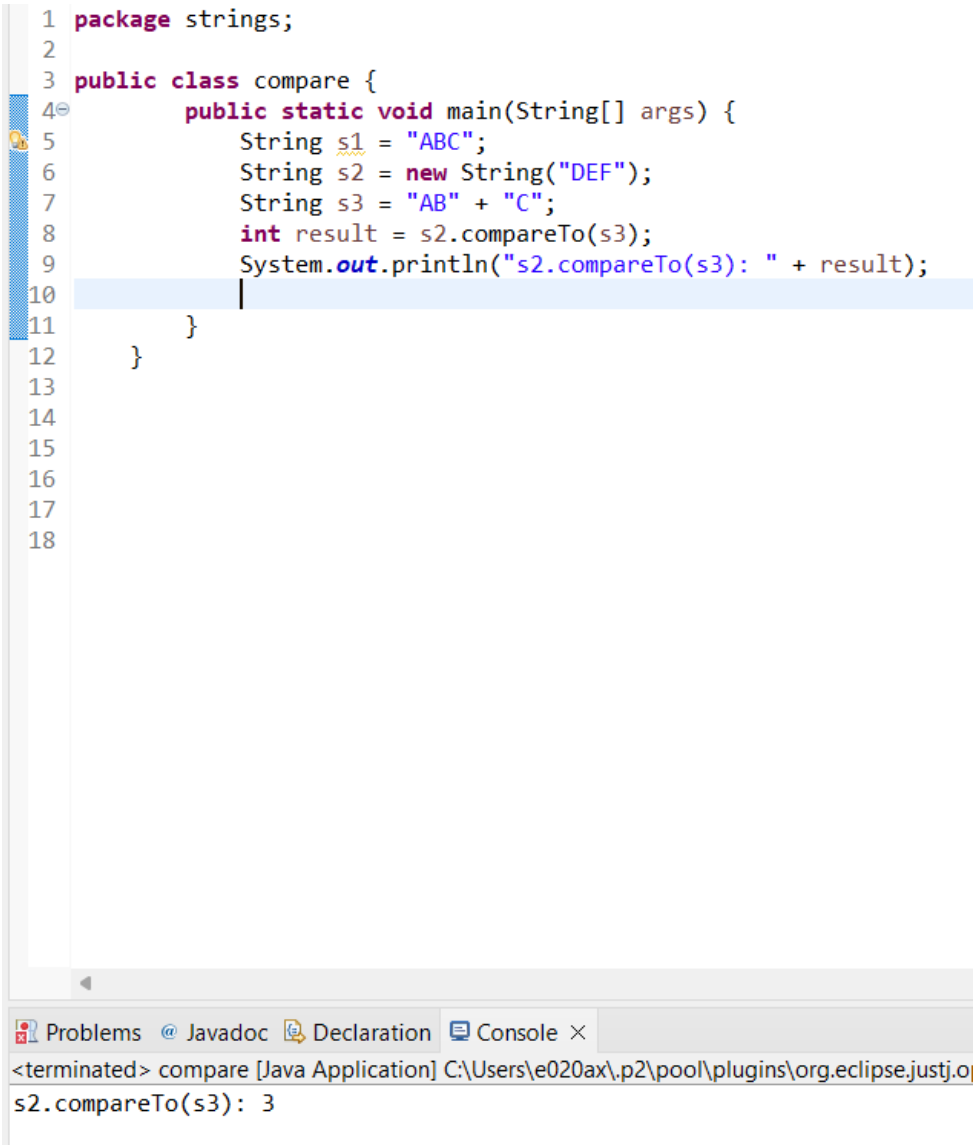
d. s2.compareTo(s3);

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

```
        String s1 = "ABC";
        String s2 = new String("DEF");
        String s3 = "AB" + "C";
        int result = s2.compareTo(s3);
        System.out.println("s2.compareTo(s3): " + result);


    }
}
```

Code and output:



e. s3.equals(s1);

```
public class CompareStrings {
    public static void main(String[] args) {
        String s1 = "ABC";
        String s2 = new String("DEF");
        String s3 = "AB" + "C";
        boolean result = s3.equals(s1);
        System.out.println("s3.equals(s1): " + result);

    }
}
```

Code and output:

```
1  package strings;
2
3  public class compare {
4          public static void main(String[] args) {
5              String s1 = "ABC";
6              String s2 = new String("DEF");
7              String s3 = "AB" + "C";
8              boolean result = s3.equals(s1);
9              System.out.println("s3.equals(s1): " + result);
10         }
11     }
12
13
14
15
16
17
```

```
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<terminated> compare [Java Application] C:\Users\e020ax\.p2\pool\plugins\org.eclipse
s3.equals(s1): true
```

3.Declare and instantiate two separate String objects, and then concatenate them together and assign them to a third arbitrary String object.

```
public class Concatenate {
    public static void main(String[] args) {
        String str1 = "Hello, ";

        String str2 = "World!";

        String str3 = str1 + str2;

        System.out.println(str3);
    }
}
```

Code and output: