Computer Science Virtual Learning

HS Computer Science A

April 24th, 2020

Lesson: <mark>String Summary</mark>

Objective/Learning Target:

Reviewing how strings are used in Java

What is a String?

In this chapter you learned about strings which are objects of the `String` class. Strings hold characters in a sequence. You learned the `String` methods that you will be expected to know on the exam. You were also introduced to concept of inheritance since the `String` class inherits from the `Object` class.

.

Vocabulary Recap

Match the Vocabulary word with its definition

1. ____ append
2. ____ Child Class
3. ____ Concatenate
4. ____ immutable
5. ____ index
6. ____ length
7. ____ override
8. ____ parent class
9. ____ reference
10. ____ string
11. ____ substring
12. ____ new
13. ____ null

a. A new string that contains a copy of part of the original string.
b. One string can be appended to another using the `+` operator. This will create a new string with all the characters in the first string followed by all the characters in the second string.
c. A string is an object of the `String` class which holds sequences of characters. The `String` class also defines methods that you can execute on a string object like getting its length or getting a substring (copy of part of the string). Notice that the String class starts with an uppercase letter. All class names in Java start with an uppercase letter.
d. used to create a new object of a class
e. A class in Java can inherit object fields and methods from a parent class. The `String` class is a child class of the `Object` class.
f. used to indicate that an object reference doesn't refer to any object yet.
g. A class in Java has a parent class and it inherits object fields and public methods from the parent class. The `Object` class is the parent class of the `String` class.
h. One string can be concatenated after another which is the same as appending one string after another.
i. A child class can provide the same method as one it inherits from a parent class and in that case the child method will execute instead of the parent method. The child method overrides the parent method.
j. Means that something doesn't change. Strings are immutable. Any method that seems to change a string actually creates a new string.
k. A child class can provide the same method as one it inherits from a parent class and in
l. The number of characters in a string.

Code Practice with Strings

The code to the right should get the first letter of the first name, middle name, and last name and append (concatenate) them together and then return them all in lowercase. However, the code has errors. Fix the code so that it compiles and runs correctly.

```java
1 public class Test1
2 {
3     public static void main(String[] args)
4     {
5         String firstName = "Sofia';
6         String middleName = "Maria";
7         String lastName   "Hernandez";
8         String initials = firstname.substring(0,1) +
9                           middleName.subString(0,1) +
10                          lastName.substring(0,1);
11         System.out.println(initials.toLowerCase();
12     }
13 }
14
```

Error

```
Test1.java:5: error: unclosed string literal
        String firstName = "Sofia';
                           ^
Test1.java:7: error: ';' expected
        String lastName  "Hernandez";
                       ^
Test1.java:11: error: ')' expected
        System.out.println(initials.toLowerCase();
                                               ^
3 errors
```

Code Practice with Strings

The following code should print "Mary's favorite color is blue". However, the code has errors. Fix the code so that it compiles and runs correctly.

```java
1 public class Test1
2 {
3     public static void main(String[] args)
4     {
5         String name = Mary";
6         String color = "blue"
7         System.out.println(Name +
8                         "'s favorite color is " + color);
9     }
10 }
11
```

There were errors compiling your code. See below.

Activity: 2 -- ActiveCode (ch4Ex2q)

Error

```
Test1.java:5: error: unclosed string literal
        String name = Mary";
                      ^
Test1.java:6: error: ';' expected
        String color = "blue"
                       ^
2 errors
```
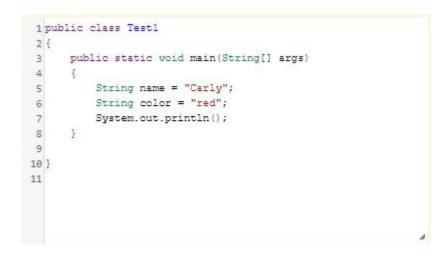
Code Practice with Strings

The following code should print "Gabby's favorite sport is soccer". However, the code has errors. Fix the code so that it compiles and runs correctly.

```java
1 public class Test1
2 {
3    public static void main(String[] args)
4    {
5        String name "Gabby";
6        String sport = "soccer;
7        System.out.println(Name +
8                          "'s favorite sport is "
9                          sport);
10   }
11 }
12
```

There were errors compiling your code. See below.

Activity: 3 -- ActiveCode (ch4Ex3q)

Error

```
Test1.java:5: error: ';' expected
        String name "Gabby";
                    ^
Test1.java:6: error: unclosed string literal
        String sport = "soccer;
                       ^
Test1.java:8: error: ')' expected
                          "'s favorite sport is "
                                                 ^
Test1.java:9: error: illegal start of expression
                          sport);
                          ^
4 errors
```

Code Practice with Strings

The following code should print "Your name is Carly and your favorite color is red". Finish the code so that it prints the output correctly.

```java
1 public class Test1
2 {
3     public static void main(String[] args)
4     {
5         String name = "Carly";
6         String color = "red";
7         System.out.println();
8     }
9
10 }
11
```
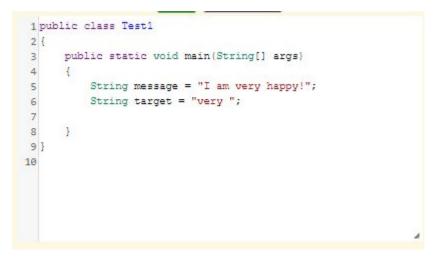
Code Practice with Strings

Finish the code below so that it prints "Your name is Justin and your age is 16".

```
1  public class Test1
2  {
3      public static void main(String[] args)
4      {
5          String name = "Justin";
6          int age = 16;
7          System.out.println();
8
9      }
10 }
11
```
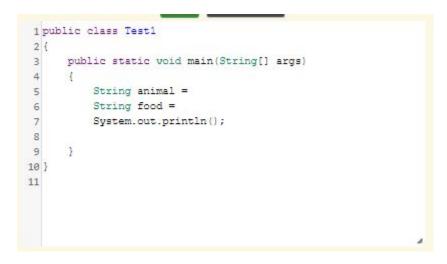
Code Practice with Strings

The following code should remove the word "very " (and following space) from the message and print the new message. You can use indexOf to find the position of a substring in your string. You can use substring to create a new string removing the word.

```java
1 public class Test1
2 {
3     public static void main(String[] args)
4     {
5         String message = "I am very happy!";
6         String target = "very ";
7
8     }
9 }
10
```

Code Practice with Strings

Finish the code below to print your favorite animal and food.

```
1 public class Test1
2 {
3     public static void main(String[] args)
4     {
5         String animal =
6         String food =
7         System.out.println();
8
9     }
10 }
11
```

For More Resources and to Check Answers

Go to: https://runestone.academy/runestone/books/published/apcsareview/Strings/Summary.html

https://runestone.academy/runestone/books/published/apcsareview/Strings/Exercises.html