Strings Test 1 Key

**Multiple Choice**

1. Consider the following code segment.

String str = "abc";

for(int i = 0; i < 3; i++)

{

str += "x";

}

System.out.println(str);

What is printed as a result of executing this code segment?

1. xxx
2. abc
3. abcx
4. abcxxx
5. abcxabcxxabcxxx
6. Consider the following code segment.

String str = "cheerleader";

System.out.println(str.substring(4,5) + str.substring(6));

What is printed as a result of executing this code segment?

1. erl
2. leader
3. reader
4. rle
5. re
6. Consider the following code segment.

String str = "abcde";

for(int i = 0; i < str.length(); i++)

{

System.out.print(str.substring(i, i+1));

}

System.out.println();

What is printed as a result of executing this code segment?

1. abcde
2. aaaaa
3. abcd
4. bcde
5. no output because of a StringIndexOutOfBounds exception.
6. Consider the following code segment.

String str = "manifest destiny";

int index = str.indexOf("if");

System.out.println(index);

What is printed as a result of executing this code segment?

1. 0
2. 3
3. -1
4. 2
5. 16
6. Consider the following code segment.

String str = "I love computer programming";

int num = 0;

int index = 0;

while(index >=0)

{

index = str.indexOf("o", index);

if(index >= 0)

{

num += index;

index++;

}

}

System.out.println(num);

What is printed as a result of executing this code segment?

1. 0
2. 3
3. 8
4. 27
5. 29

**Free Response**

1. This question involves reasoning about strings that represent phone numbers. You will implement two related methods that appear in the same class. The first method takes a single string parameter representing a phone number and returns true if the phone number contains the correct number of dashes and the dashes are in the correct position. The second method takes a single parameter representing a phone number and returns true if the number is the correct length and the dashes are valid.
2. Write the method **validateDashes**, which takes a given phone number and determines if is in the correct format. A number is in the correct format if there

* are two and only two dashes
* the dashes are located in the correct position (XXX-XXX-XXXX)

The following table shows some examples of valid and invalid dash placement.

|  |  |
| --- | --- |
| **Phone Number** | **Dashes** |
| 940-562-5487 | valid |
| 9405625487 | Invalid, must have two dashes |
| 940-5625-48-7 | Invalid, must have two dashes |
| 940-56-2487 | Invalid, dashes are not in correct positions |

Complete method **validateDashes** below.

**Version 1**

/\* This method returns true if the given phone number

\* has the correct number of dashes and if they are

\* in the correct position; otherwise it returns false.

\* @param phonenumber a string representing a phone number

\* @return true or false

\*/

private static boolean **validateDashes**(String phoneNumber)

{

int dash1 = phoneNumber.indexOf("-");

int dash2 = phoneNumber.indexOf("-", 4);

int dash3 = phoneNumber.indexOf("-", 8);

if(dash1 == 3 && dash2 == 7 && dash3 == -1)

return true;

else

return false;

}

**Version 2**

private static boolean validateDashes(String phoneNumber)

{

String dash1 = phoneNumber.substring(3,4);

String dash2 = phoneNumber.substring(7,8);

int numDashes = 0;

for(int i = 0; i < phoneNumber.length(); i++)

{

if(phoneNumber.substring(i, i+1).equals("-"))

{

numDashes++;

}

}

if(dash1.equals("-") && dash2.equals("-") && numDashes == 2)

return true;

else

return false;

}

1. Write the method **validate**, which takes a given phone number and determines if it is the correct length and if it has the correct number of dashes and they are in the correct position. A valid phone number has the following format: XXX-XXX-XXXX.

Assume that **validate** is in the same class as **validateDashes** and works as specified, regardless of what you wrote in part (a).

Complete method **validate** below.

/\* This method returns true if the given phone number

\* has the correct format and length.

\* @param phonenumber a string representing a phone number

\* @return true or false

\*/

public static boolean validate(String phoneNumber)

{

return validateDashes(phoneNumber) &&

phoneNumber.length() == 12;

}