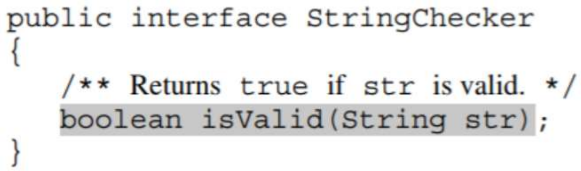
CodeWordChecker FRQ

Name: ____________________

The StringChecker interface describes classes that check if strings are valid, according to some criterion.

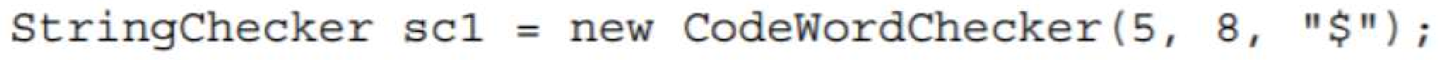


```
public interface StringChecker
{
    /** Returns true if str is valid. */
    boolean isValid(String str);
}
```

A CodeWordChecker is a StringChecker (all this means is that the CodeWordChecker class MUST have a method called isValid just like StringChecker). A CodeWordChecker object can be constructed with three parameters: two integers and a string. The first two parameters specify the minimum and maximum code word lengths, respectively, and the third parameter specifies a string that must not occur in the code word. A CodeWordChecker object can also be constructed with a single parameter that specifies a string that must not occur in the code word; in this case the minimum and maximum lengths will default to 6 and 20, respectively.

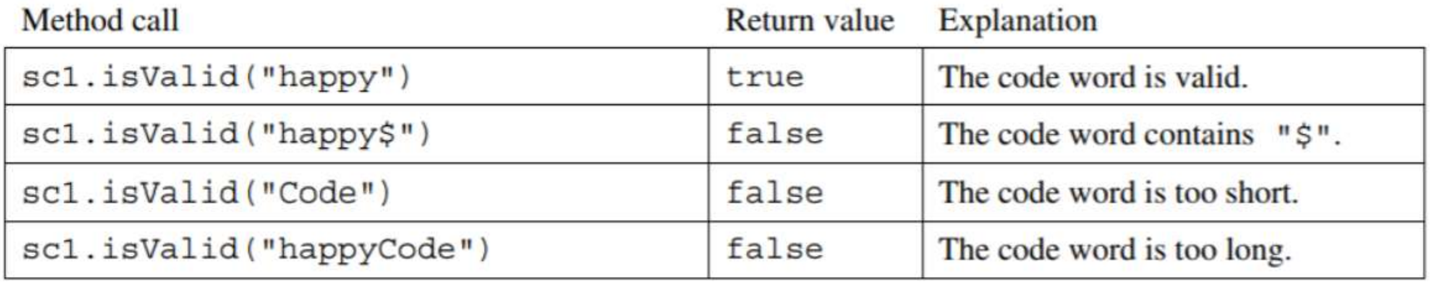
The following examples illustrate the behavior of CodeWordChecker objects.

Example 1



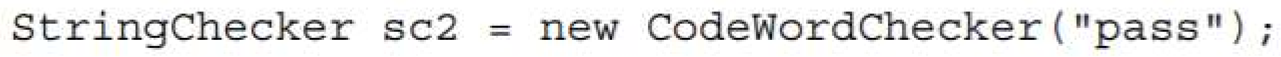
```
StringChecker sc1 = new CodeWordChecker(5, 8, "$");
```

Valid code words have 5 to 8 characters and must not include the string "$".



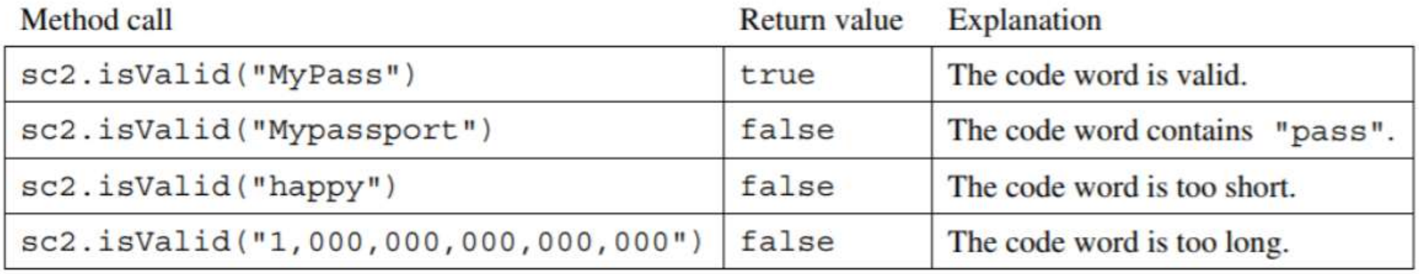
Method call	Return value	Explanation
`sc1.isValid("happy")`	`true`	The code word is valid.
`sc1.isValid("happy$")`	`false`	The code word contains `"$"`.
`sc1.isValid("Code")`	`false`	The code word is too short.
`sc1.isValid("happyCode")`	`false`	The code word is too long.

Example 2



```
StringChecker sc2 = new CodeWordChecker("pass");
```

Valid code words must not include the string "pass". Because the bounds are not specified, the length bounds are 6 and 20, inclusive.



Method call	Return value	Explanation
`sc2.isValid("MyPass")`	`true`	The code word is valid.
`sc2.isValid("Mypassport")`	`false`	The code word contains `"pass"`.
`sc2.isValid("happy")`	`false`	The code word is too short.
`sc2.isValid("1,000,000,000,000,000")`	`false`	The code word is too long.

Write the complete CodeWordChecker class. Your implementation must meet all specifications and conform to all examples.