

## Question 2

15 minutes to complete, 5 minutes to upload answer.

This question involves analyzing and modifying a string. The following Phrase class maintains a phrase in an instance variable and has methods that access and make changes to the phrase. You will write two methods of the Phrase class.

```
public class Phrase
{
    private String currentPhrase;

    /** Constructs a new Phrase object. */
    public Phrase(String p)
    { currentPhrase = p; }

    /** Returns an integer array containing each index of occurrence of str in the current phrase.
     *  returns null if there is no occurrence of str.
     *  Precondition: str.length() > 0 and n > 0
     *  Postcondition: the current phrase is not modified.
     */
    public int[] findAllOccurrences(String str)
    { /* implementation not shown */ }

    /** Modifies the current phrase by replacing each occurrence of str with repl.
     *  If there is no occurrence of str, the current phrase is unchanged.
     *  Precondition: str.length() > 0 */
    public void replaceAllOccurrences(String str, String repl)
    { /* to be implemented */ }

    /** Returns a string containing the current phrase. */
    public String toString()
    { return currentPhrase; }
}
```

Write the Phrase method `replaceAllOccurrences`, which will replace each occurrence of the string `str` with the string `repl`. If no occurrences exist, `currentPhrase` remains unchanged.

Several examples of the behavior of the method `replaceAllOccurrences` are shown below.

<pre>Phrase phrase1 = new Phrase("A cat ate."); phrase1.replaceAllOccurrences("ate", "slept"); System.out.println(phrase1);</pre>	A cat slept.
<pre>Phrase phrase2 = new Phrase("aaaa"); Phrase2.replaceAllOccurrences("aa", "xx"); System.out.println(phrase4);</pre>	xxxx
<pre>Phrase phrase3 = new Phrase("aaaa"); Phrase3.replaceAllOccurrences("aa", "bbb"); System.out.println(phrase5);</pre>	bbbbbb

Complete method `replaceAllOccurrences` below.

```
/** Modifies the current phrase by replacing each occurrence of str with repl.  
 * If there is no occurrence of str, the current phrase is unchanged.  
 * Precondition: str.length() > 0 and n > 0 */
```

```
public void replaceAllOccurrences(String str, String repl)
```