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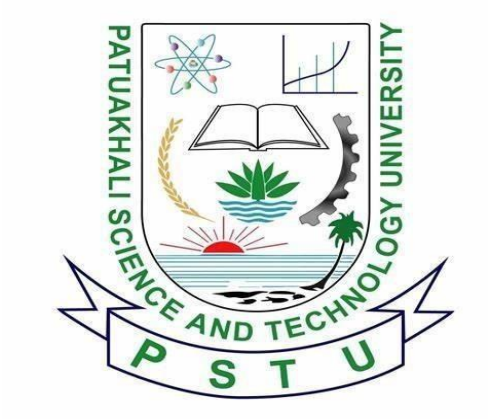

Course Code: CIT-121

SUBMITTED TO:

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Date of submission: 20-12-2023

14.1 State whether each of the following is true or false. If false,explain why.

a) When String objects are compared using ==, the result is true if the Strings contain the same values.
Ans: False. '==' operator will check whether they share the same memory ornot.
b) A String can be modified after it's created.
Ans: False. A string is an immutable object and thus can't be modified.

14.2 For each of the following, write a single statement thatperforms the indicated task:

a) Compare the string in s1 to the string in s2 for equality of contents.

```
1 s1.equals(s2)
```

b) Append the string s2 to the string s1, using +=.

```
1 s1.equals(s2)
```

c) Determine the length of the string in s1 .

```
1 s1.equals(s2)
```

14.3 Palindromes

```
1  public class Palindrome {
2     public static void main(String[] args) {
3        String s = "madam";
4     System.out.println(isPalindrome(s)); 5
      }
6
7     static boolean isPalindrome(String s) {
8        int n = s.length();
9        for (int i = 0; i < n/2; i++) {
10          if (s.charAt(i) != s.charAt(n-i-1)) {
11          return false;12
            }
13       }
14       return true;
15    }

16 }
```

14.4 Comparing Portions of Strings

```
1  import java.util.Scanner;
2
3  public class Compare {
4     public static void main(String[] args) {
5        Scanner input = new Scanner(System.in);
6        System.out.println("Enter first string: ");
7        String s1 = input.nextLine();
8        System.out.println("Enter second string: ");
9        String s2 = input.nextLine();
10        System.out.println("Enter number of characters to be compared: ");
11        int n = input.nextInt();
12        System.out.println("Enter starting index of the comparison: ");
13        int i = input.nextInt();
14        input.close();
15
16        if (s1.regionMatches(true, i, s2, i, n)) {
17           System.out.println("The strings are equal.");
18        } else {
19           System.out.println("The strings are not equal.");
20        }
21     }
22  }
```

14.5 Random Sentences

```
1  public class SentenceGeneration {
2     String[] article = { "the", "a", "one", "some", "any" };
3     String[] noun = { "boy", "girl", "dog", "town", "car" };
4     String[] verb = { "drove", "jumped", "ran", "walked", "skipped" };
5     String[] preposition = { "to", "from", "over", "under", "on" };6
7     int randomNum(int min, int max) {
8     return (int) (Math.random() * (max - min + 1) + min);9 }
10
11     String randomArticle() {
```

```
12      return article[randomNum(0, article.length - 1)];13
        }
14
15      String randomNoun() {
16      return noun[randomNum(0, noun.length - 1)];17
        }
18
19      String randomVerb() {
20      return verb[randomNum(0, verb.length - 1)];21 }
22
23      String randomPreposition() {
24      return preposition[randomNum(0, preposition.length - 1)];25
        }
26
27      String randomSentence() {
28        String sentence = randomArticle() + " " + randomNoun() + " " +
randomVerb() + " " + randomPreposition() + " "
29              + randomArticle() + " " + randomNoun() + ".";
30        return sentence.substring(0, 1).toUpperCase() + sentence.substring(1);31
        }
32
33      public static void main(String[] args) {
34        SentenceGeneration sentenceGeneration = new
SentenceGeneration();
35        for (int i = 0; i < 20; i++) {
36          System.out.println(sentenceGeneration.randomSentence());
37        }
38      }
39  }
```

14.6 Project: Limericks

```
1  public class Limericks {
2     String[] threeRhymer = { "There was a young lady of station\n", "I loveman
was her sole exclamation\n",
3           "Isle of Man is the true explanation\n" };
```

```
4     String[] twoRhymer = { "But when men cried, \"You flatter\"\n", "She
replied, \"Oh! no matter!\n" };
5
6     int randomNum(int min, int max) {
7     return (int) (Math.random() * (max - min + 1) + min);8 }
9
10     String threeRimeGen() {
11     return threeRhymer[randomNum(0, threeRhymer.length - 1)];12    }
13
14     String twoRimeGen() {
15     return twoRhymer[randomNum(0, twoRhymer.length - 1)];16
       }
17
18     String randomSentence() {
19        String sentence = threeRimeGen() + threeRimeGen() + twoRimeGen()
+ twoRimeGen() + threeRimeGen();
20     return sentence.substring(0, 1).toUpperCase() + sentence.substring(1);21  }
22
23     public static void main(String[] args) {
24        Limericks sentenceGeneration = new Limericks();25
          for (int i = 0; i < 20; i++) {
26           System.out.println(sentenceGeneration.randomSentence()); 27    }
28     }
29  }
```

14.7 Pig Latin

```
1  import java.util.Scanner;
2
3  public class PigLatin {
4     public static void main(String[] args) {
5        Scanner input = new Scanner(System.in);
6        System.out.println("Enter a sentence: ");
```

```
7         String sentence = input.nextLine();
8         input.close();
9
10         String[] words = sentence.split(" ");
11         for (String word : words) {
12            System.out.print(word.substring(1) + word.charAt(0) + "ay ");
13         }
14      }
15   }
```

14.8 Tokenizing Telephone Numbers

```
1  import java.util.Scanner;
2
3  public class TokeinizingTelephone {
4     public static void main(String[] args) {
5        Scanner input = new Scanner(System.in);
6        System.out.println("Enter a telephone number: ");
7        String telephoneNumber = input.nextLine();
8        input.close();
9
10        String[] tokens = telephoneNumber.split("[()\\- ]");
11        String areaCode = tokens[1];
12        String firstThreeDigits = tokens[3];
13        String lastFourDigits = tokens[4];
14        String phoneNumber = firstThreeDigits + lastFourDigits;
15
16        System.out.println("Area code: " + areaCode);
17        System.out.println("Phone number: " + phoneNumber);
18     }
19  }
```

14.9 Displaying a Sentence with Its Words Reversed

```
1  import java.util.Scanner;

3  public class ReverseSentence {
4     public static void main(String[] args) {
5        Scanner input = new Scanner(System.in);
6        System.out.println("Enter a sentence: ");
7        String sentence = input.nextLine();
8        input.close();
```

```
9
10        String[] words = sentence.split(" ");
11        for (int i = words.length - 1; i >= 0; i--) {
12        System.out.print(words[i]
+ " ");13    }
14      }
15  }
```

14.10 (Longest Word in a Sentence)1

```
1   import java.util.Scanner;
2
3   public class LongestWord {
4     public static void main(String[] args) {
5       Scanner input = new Scanner(System.in);
6       System.out.println("Enter a sentence: ");
7       String sentence = input.nextLine();
8       input.close();
9
10      String[] words = sentence.split(" ");
11      int maxLength = 0;
12      String longest_word = "";
13      for (String word : words) {
14        if (word.length() > maxLength) {
15          longest_word = word;
16          maxLength = word.length();
17        }
18      }
19
20      System.out.println("The longest word is: " + longest_word);
21    }
22  }
```