الواجب الاول

```
// CountLetters.java
//
// Reads a words from the standard input and prints the number of // occurrences of each letter in that word
//
// *************************************************************
import java.util.Scanner;
public class CountLetters {
public static void main(String[] args) {
int[] counts = new int[26];
Scanner scan = new Scanner(System.in);
//get word from user
System.out.print("Enter a single word (letters only, please): ");
String word = scan.nextLine();
//convert to all upper case word = word.toUpperCase();
//count frequency of each letter in string for
(int i=0; i < word.length(); i++) counts[word.charAt(i)-'A']++;
//print frequencies
System.out.println();
for (int i=0; i < counts.length; i++)
if (counts [i] != 0)
System.out.println((char)(i +'A') + ": " + counts[i]); } }
```

Run CountLetters and enter a phrase, that is, more than one word with spaces or other punctuation in between. It should throw an ArrayIndexOutOfBoundsException, because a non-letter will generate an index that is not between 0 and 25. It might be desirable to allow non-letter characters, but not count them. Of course, you could explicitly test the value of the character to see if it

is between 'A' and 'Z'. However, an alternative is to go ahead and use the translated character as an index, and catch an ArrayIndexOutOfBoundsException if it occurs. Since you want don't want to do anything when a non-letter occurs, the handler will be empty. Modify this method to do this as follows: � Put the body of the first for loop in a try. � Add a catch that catches the exception, but don't do anything with it.

الواجب الثاني

Now modify the body of the catch so that it prints a useful message (e.g., "Not a letter") followed by the exception. Compile and run the program. Although it's useful to print the exception for debugging, when you're trying to smoothly handle a condition that you don't consider erroneous you often don't want to. In your print statement, replace the exception with the character that created the out of bounds index.

الواجب الثالث

The `Customer` class models a customer is design as shown in the class diagram. Write the codes for the `Customer` class and a test driver to test all the `public` methods.

```
              Customer
-----------------------------------------
-ID:int
-name:String
-gender:char     •------------------  'm' or 'f'
-----------------------------------------
+Customer(ID:int,name:String,
    discount:int)
+getID():int
+getName():String
+getGender():char
+toString():String  •-----------------  "name(ID)"
```