קורס:מבוא למדעי המחשב בשפת java

סטודנטית 1: דליה ויליאם

סטודנט 2: גיא רחמים

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**public** **class** Assignment10

{

**public** **static** **void** main(String[] args)

{

//------------------------Question 1-----------------------//

System.***out***.println("Exe.1");

String str1="I love programming. I love Java.";

String sub1= "love";

System.***out***.println("Example 1:\n " +"the string is: " + str1+"\nThe sub string is: "+ sub1 + "\nAnd the index is: " +(*searchForSub*(str1,sub1)));

System.***out***.println("\n");

String str2="fast breakfast";

String sub2= "fast";

System.***out***.println("Example 2:\n " +"the string is: " + str2+"\nThe sub string is: "+ sub2 + "\nAnd the index is: " +(*searchForSub*(str2,sub2)));

//-----------------------------Question 2 -----------------------//

//Example 1

System.***out***.println("\n\nExe.2");

String[] strArr1= {"Hello", "Hello Guy", "Oh, Hello Guy, how are you?"} ;

System.***out***.println("Example 1:\nThe contents of the string array is: ");

*printStringArray*(strArr1);

System.***out***.println("\nThe answer is: "+*checkForContSub*(strArr1));

//Example 2

String[] strArr2= {"h", "he", "hel", "hell", "hello", "hello", "mello there"};

System.***out***.println("\nExmple 2:\nThe content of the string array is: ");

*printStringArray*(strArr2);

System.***out***.println("\nThe answer is: " + *checkForContSub*(strArr2));

//----------------------------Question 3------------------------//

System.***out***.println("\n\nExe.3");

//example 1

String countedString = "Please count how many a's are present.";

**char** charToCount = 'a';

//example 2

System.***out***.println("the string is: " +countedString + "\nThe character is: " +charToCount);

System.***out***.println("and the answer is: " +*countTheChar*(countedString, charToCount));

//---------------------------Question 4 -----------------------//

System.***out***.println("\n\nExe.4");

//example 1

String stringToCheck1="madam";

System.***out***.println("Example 1:\nThe string is: " + stringToCheck1);

System.***out***.println("the function returns: " +*classifyThePalindrom*(stringToCheck1)+ "\n");

//example 2

String stringToCheck2="abba";

System.***out***.println("Example 2:\nThe string is: " + stringToCheck2);

System.***out***.println("the funtion returns: " +*classifyThePalindrom*(stringToCheck2)+ "\n");

//example 3

String stringToCheck3="hello";

System.***out***.println("Example 3:\nThe string is: " + stringToCheck3);

System.***out***.println("the function returns: " +*classifyThePalindrom*(stringToCheck3));

}

//-----------------------Functions----------------------//

//-----------------------------Exe.1--------------------//

//the function searches for a sub as a substring in str,

//and returns the index of the first char of sub's last

//appearence in str.

**public** **static** **int** searchForSub(String str, String sub)

{

**int** index=-1;

**for** (**int** i=str.length()-sub.length(); i>=0;i--)

{

**if** (sub.equals(str.substring(i, i+sub.length())))

{

**return** i;

}

}

**return** index;

}

//-----------------------------Exe.2--------------------//

//the function takes a string array and checks if each cell

//of the array is a sub string of the next cell.

**public** **static** **boolean** checkForContSub (String[] strArr)

{

**for** (**int** i=1; i<strArr.length ; i++)

{

**if** (!(*searchSub*(strArr[i],strArr[i-1])))

{

**return** **false**;

}

}

**return** **true**;

}

//----------------------helper for Exe.2--------------------//

//a helper function for question 2 that check if sub is a substring

//of str.

**public** **static** **boolean** searchSub(String str, String sub)

{

//boolean isSub=false;

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

{

**if** (sub.equals(str.substring(i, i+sub.length())))

{

**return** **true**;

}

}

**return** **false**;

}

//-----------------------------Exe.3--------------------//

//a function that takes a string and a character and counts how many

//times the character appears in the string.

**public** **static** **int** countTheChar (String str, **char** charToCount)

{

**int** counter=0;

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

{

**if** (str.charAt(i)==charToCount)

counter++;

}

**return** counter;

}

//-----------------------------Exe.4--------------------//

//a function takes a string and checks if its a palindrom.

//if it is, it checks what type of palindrom it is (odd or even numbered).

**public** **static** **int** classifyThePalindrom(String str)

{

**for** (**int** i=0; i<str.length()/2; i++)

{

**if** (str.charAt(i)!=str.charAt(str.length()-1-i))

**return** -1;

}

**if** (str.length()%2!=0)

**return** 1;

**return** 0;

}

//a helper function that prints 1 dimensional string arrays.

**public** **static** **void** printStringArray(String[] strArr)

{

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

{

System.***out***.print(strArr[i]+ "\t");

}

}

}

