CSE215L Programming Language II Lab

North South University

LAB 05

Lab Instructor: Muhammad Abrar Hussain

Objective:

- To learn about String+methods
- To learn to implement a program using multiple methods

Tasks:

- String Manipulation **(Done in the opposite page)**

- Write a method **countVowels(String arg)** that takes a String as parameter and returns the number of vowels. **(Done in the opposite page)**

- Write a method **bin2Dec(String arg)** that takes a binary String as parameter and returns the corresponding decimal number.

- Write a method **isPalidrome(String arg)** that determines if a String is palindrome or not. Palindrome is when a String remains the same after reversing. The method should return Boolean type.
  For example: MADAM is palindrome.

- Write a program that has the following static variable - balance (initial value 0) and these following static methods:
  - deposit(double amount): Increase account balance
  - withdraw(double amount): Decrease account balance

  Now run an infinite loop in main program so it displays user with following options:

  1. Deposit
  2. Withdraw
  3. Balance
  4. Exit

  Under each option, the program should ask for appropriate user input (i.e. amount to deposit)

String Manipulation:

```
public class stringManipulation {
	public static void main(String[] args) {

		//compare two strings
		String str = "Hello People";
		String anotherString = "hello people";
		Object objStr = str;

System.out.println("str.compareTo(anotherString): "+ str.compareTo(anotherString) );

System.out.println("str.compareToIgnoreCase(anotherString): "+
                                                    str.compareToIgnoreCase(anotherString));

System.out.println("str.compareTo(objStr.toString()): "+str.compareTo(objStr.toString()));

		String s1 = "leo_messi";
		String s2 = "leo_messi";
		String s3 = new String ("Lionel Andrés Messi");
		System.out.println("s1.equals(s2): "+s1.equals(s2));
		System.out.println("s2.equals(s3): "+s2.equals(s3));
		System.out.println("s1 == s2: "+ (s1 == s2));
		System.out.println("s2 == s3: "+ (s2 == s3));

		//search the last position of a substring
		int lastIndex = s3.lastIndexOf("Messi");

		if(lastIndex == - 1){
			System.out.println("Messi not found");
		}else {
			System.out.println("Last occurrence of Messi is at index "+ lastIndex);
		}

		//replace a substring inside a string by another one
		String st = "May Argentina fall tonight!!";
		System.out.println( st.replace( "fall" ,"WIN" ) );

		//convert a string totally into upper case
		System.out.println("String changed to upper case: " + st.toUpperCase());

		//String length
		System.out.println("String length: " + st.length());

		//Concatenation
		s1 = s1+" is a good player. ";
		s1 = s1.concat("His full name is: ");
		s1 = s1.concat(s3);
		System.out.println("String s1 becomes: " + s1);

		 //To know the character in particular index of the String
		System.out.println("String s1 becomes: " + s3.charAt(14));
	}
}
```

Solution Number 2:

```
import java.util.Scanner;

public class lab5_2 {

	public static void main(String[] args) {
		String s = new String();

		@SuppressWarnings("resource")
		Scanner sc = new Scanner(System.in);
		s=sc.nextLine();		//takes a line;

		System.out.println("Vowel Count: "+countVowels(s));
	}


	public static int countVowels(String str){
		int count=0;

		for(int i=0; i<str.length(); i++){
			switch(str.charAt(i)){
				case 'a':
				case 'e':
				case 'i':
				case 'o':
				case 'u':
					count++;
				default:
					continue;
			}
		}
		return count;
	}

}
```