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Title of the Experiment: STRING HANDALING

Experiment No. 9 **Date :** 24/10/20

Problem Statement :

9.1)Read a string containing 3_4 words using Scanner class object. Split it into words and for each word check if it's palindrome by writing a function isPalindrome(String the myWord, int s, int e) which return true if its palindrome else return false. Where s is start index and e is end index of the input myWord. Print it in uppercase if it is palindrome else reverse the string and print it in lowercase. Use appropriate string functions to implement the above problem statement.

0bjectives of the Experiment :

1. Using String Handling concept to store the string data in the main memory
2. manipulating the data of the String, retrieving the part of the String etc
3. Using String Handling learn a lot of concepts that can be performed on a string such as concatenation of string, comparison of string, find sub string etc

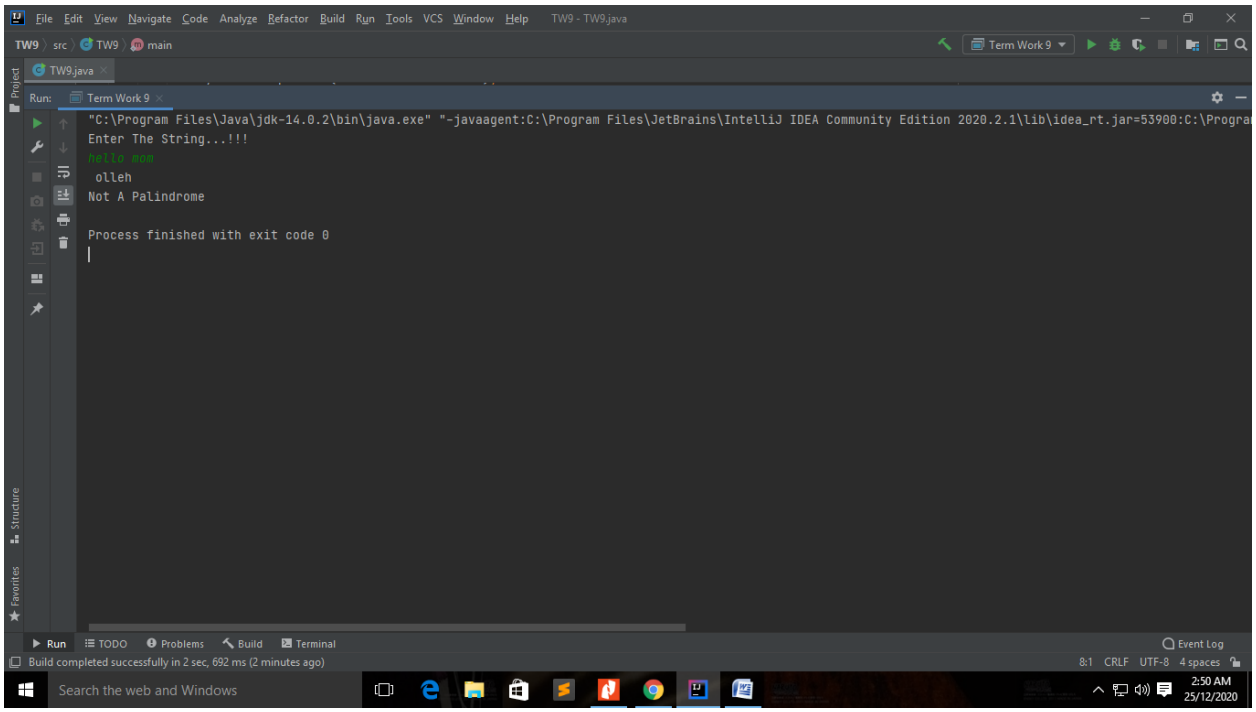
Program Source Code :

```
import java.util.Scanner;

public class TW9 {
    public static void main(String[] args) {
        String str;
        String[] words;
        Scanner input = new Scanner(System.in);
        System.out.println("Enter The String...!!!");
        str = input.next();
        words = str.split(" ");
        for (String s : words) {
            if (isPalindrome(s, 0, s.length() - 1)) {
                System.out.println(s.toUpperCase());
                System.out.println("It is A Palindrome");
            } else {
                System.out.println(reverseString(s).toLowerCase());
                System.out.println("Not A Palindrome");
            }
```

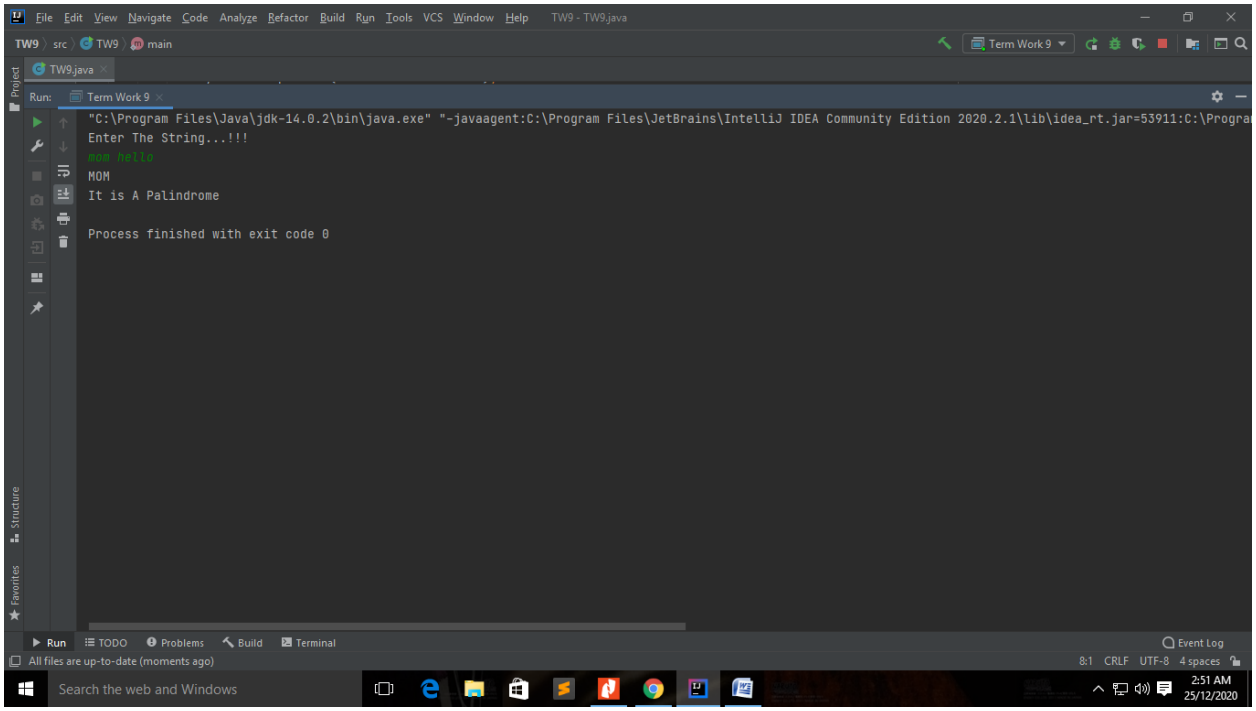
```
        }
    }

    public static boolean isPalindrome (String word,int s, int t){
        if (word.charAt(s) == word.charAt(t)) {
            if (s < t)
                return isPalindrome(word, s + 1, t - 1);
            else if (s == t || s == t + 1)
                return true;
        }
        return false;
    }

    public static String reverseString(String s){
        String rs = " ";
        for (int i = s.length() - 1; i >= 0; i--)
            rs = rs + s.charAt(i);
        return rs;
    }

}
```

Output :

Case 1:



Case 2:



Outcomes of the Experiment : At the end of the laboratory sessions the students should be able to

1. Demonstrate the use of String Handling Concept.
2. Understand Java String contains an immutable sequence of Unicode characters
3. Understand string is an object that represents a sequence of characters or char values. The *java.lang.String* class is used to create a Java string object
4. Will Understand the Importance of String Handling Functions
5. Will understand the use of Various use of String Functions

Conclusions : From the given problem statement, we could identify the necessary variables of appropriate type,and looping/control statements and the necessary program logic. The program was written in IntelliJ IDE(Mention the one you actually used) by creating a project. We understood the usage of the IDE in typing the code, debugging, running the program and observing the output. We also understood the use of built-in class System and its method println to display the result. The program was executed for two-three sets of input and result obtained were verified to be correct and recorded.

Strings are a sequence of characters and are widely used in Java programming. In the Java programming language, strings are objects. The String class has over 60 methods and 13 constructors.

The String class also includes a number of utility methods, among them split (), to Lowercase (), to Uppercase (), and value Of(). The latter method is indispensable in converting user input strings to numbers. The Number subclasses also have methods for converting strings to numbers and vice versa.

In addition to the String class, there is also a String Builder Class In Java class. Working with String Builder Class In Java objects can sometimes be more efficient than working with strings. The String Builder Class In Java class offers a few methods that can be useful for strings, among them reverse (). In general, however, the String class has a wider variety of methods.

A string can be converted to a string builder using a StringBuilder constructor. A string builder can be converted to a string with the to String () method.

Problem Statement(Practice) :

9.2) Two strings will be anagram to each other if and only if they contain the same number of
characters (order of the characters doesn;t matter). That is, If the two strings are anagram to
each other, then one string can be rearranged to form the other string. For Example: creative
and reactive are anagrams. Write a Java program to test whether two strings are anagrams or
not. (listen and silent, stressed and desserts, dusty and study)

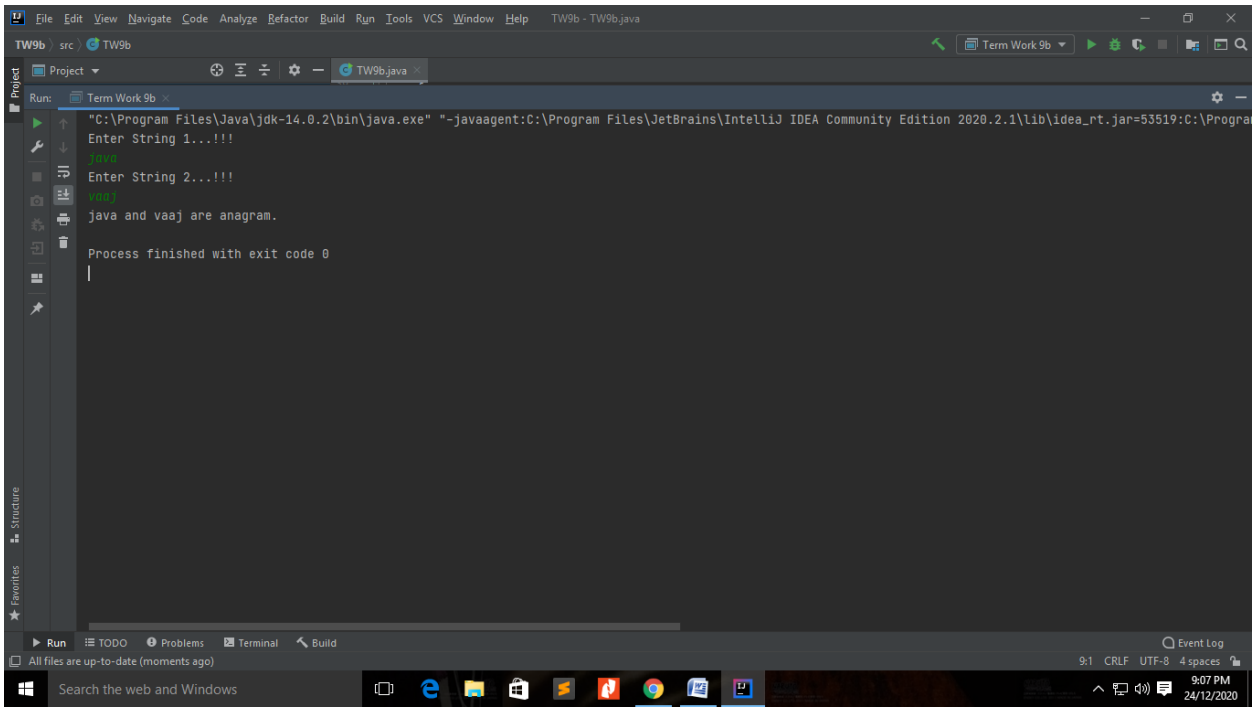
Program Source Code :

```
mport java.util.Arrays;
import java.util.Scanner;

class TW9b {
    public static void main(String[] args) {
        String str1;
        String str2;
        Scanner input=new Scanner(System.in);
        System.out.println("Enter String 1...!!!");
        str1=input.next();
        System.out.println("Enter String 2...!!!");
        str2=input.next();

        // check if length is same
        if(str1.length() == str2.length()) {

            // convert strings to char array
            char[] charArray1 = str1.toCharArray();
            char[] charArray2 = str2.toCharArray();

            // sort the char array
            Arrays.sort(charArray1);
            Arrays.sort(charArray2);

            // if sorted char arrays are same
            // then the string is anagram
            boolean result = Arrays.equals(charArray1, charArray2);

            if(result) {
                System.out.println(str1 + " and " + str2 + " are anagram.");
            }
            else {
```

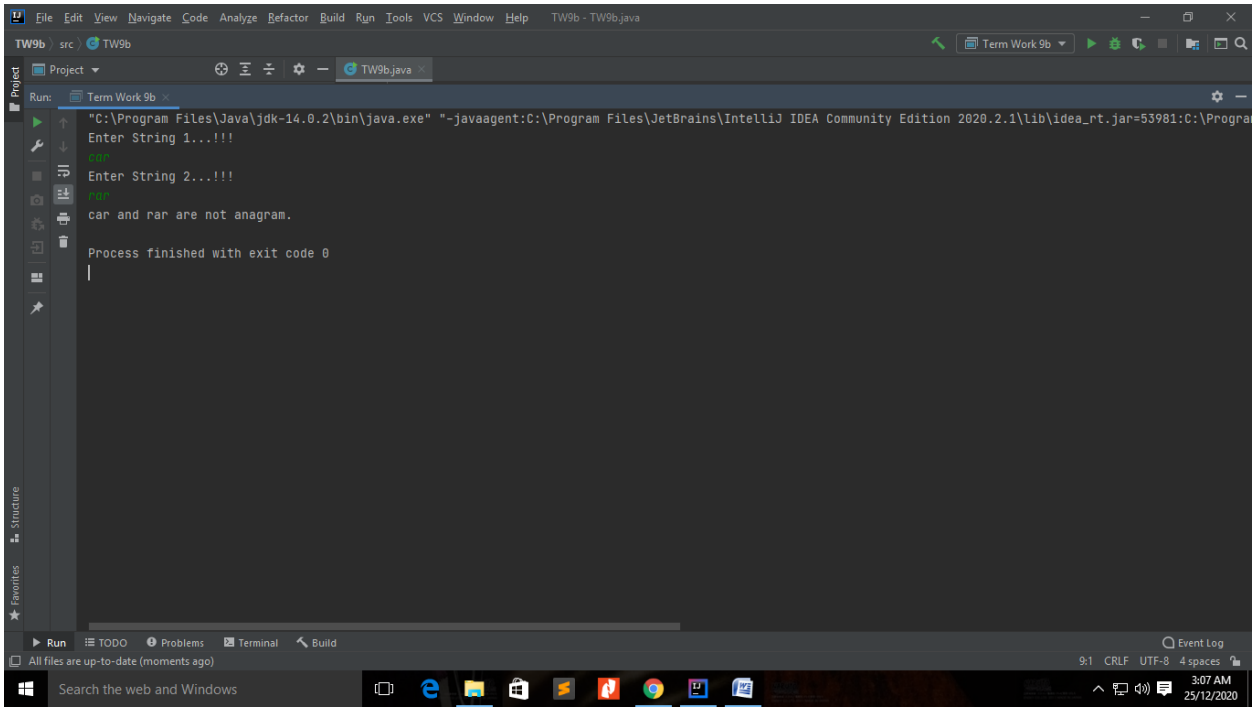
```
                System.out.println(str1 + " and " + str2 + " are not
anagram.");
            }
        }
        else {
            System.out.println(str1 + " and " + str2 + " are not anagram.");
        }
    }
}
```

Output :

Case1



Case 2


File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help
TW9b - TW9b.java
TW9b src TW9b
Term Work 9b
Project
TW9b.java
Run: Term Work 9b
"C:\Program Files\Java\jdk-14.0.2\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2020.2.1\lib\idea_rt.jar=53981:C:\Progra
Enter String 1...!!!
car
Enter String 2...!!!
rar
car and rar are not anagram.
Process finished with exit code 0
Structure
Favorites
Run
TODO
Problems
Terminal
Build
Event Log
All files are up-to-date (moments ago)
9:1 CRLF UTF-8 4 spaces
Search the web and Windows
3:07 AM
25/12/2020