Experiment No.___ *Date___/___/2020*

TITLE OF EXPERIMENT: - A JAVA Program to check palindrome or not

DIVISION:	**BRANCH:**
BATCH:	**ROLL NO.:**

PERFORMED ON DATE:

SIGNATURE OF TEACHING STAFF:

EXPERIMENT NO. 5

Aim: Develop an RMI application which accepts a string or a number and checks that string or number is palindrome or not.

Software:

1. Command prompt
2. JDK 8
3. Eclipse neon3

Theory:

In this program, you'll learn to check whether a string or number is palindrome or not in Java.

To understand this example, you should have the knowledge of the following Java programming topics:

- Java Strings
- Java while and do...while Loop
- Java for Loop
- Java if...else Statement

Program to check the number is Palindrome or not

Given an integer **N**, write a program that returns true if the given number is a palindrome, else return false.
Examples:

Input: N = 2002
Output: true

Input: N = 1234

Output: false

Check if a number is Palindrome
2002
Original Number
2002
2002
Reverses
Reversed Number = Original Number

A string is called a **palindrome string** if the reverse of that string is the same as the original string. For example, radar, level, etc.
Similarly, a number that is equal to the reverse of that same number is called a **palindrome number.** For example, **3553**, **12321**, etc.
To check a Palindrome in Java, we first reverse the string or number and compare the reversed string or number with the original value.

Example 1: Java Program to Check Palindrome String

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

    String str = "Radar", reverseStr = "";

    int strLength = str.length();

    for (int i = (strLength - 1); i >=0; --i) {
      reverseStr = reverseStr + str.charAt(i);
    }

    if (str.toLowerCase().equals(reverseStr.toLowerCase())) {
      System.out.println(str + " is a Palindrome String.");
    }
    else {
      System.out.println(str + " is not a Palindrome String.");
    }
  }
}
```

Output

```
Radar is a Palindrome String.
```

In the above example, we have a string "Radar" stored in str. Here, we have used the

1. for loop to reverse the string

- The loop runs from the end to the beginning of the string.
- The charAt() method accesses each character of the string.
- Each character of the string is accessed in reverse order and stored in reverseStr.

2. if statement to compare str and reverseStr

- The toLowerCase() method converts both **str** and **reverseStr** to lowercase. T his is because Java is case sensitive and 'r' and 'R' are two different values.
- The equals() method checks if two strings are equal.

Example 2: Java Program to Check Palindrome Number

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

    int num = 3553, reversedNum = 0, remainder;

    // store the number to originalNum
    int originalNum = num;

    // get the reverse of originalNum
    // store it in variable
    while (num != 0) {
      remainder = num % 10;
      reversedNum = reversedNum * 10 + remainder;
      num /= 10;
    }

    // check if reversedNum and originalNum are equal
    if (originalNum == reversedNum) {
      System.out.println(originalNum + " is Palindrome.");
    }
    else {
      System.out.println(originalNum + " is not Palindrome.");
    }
  }
}
```

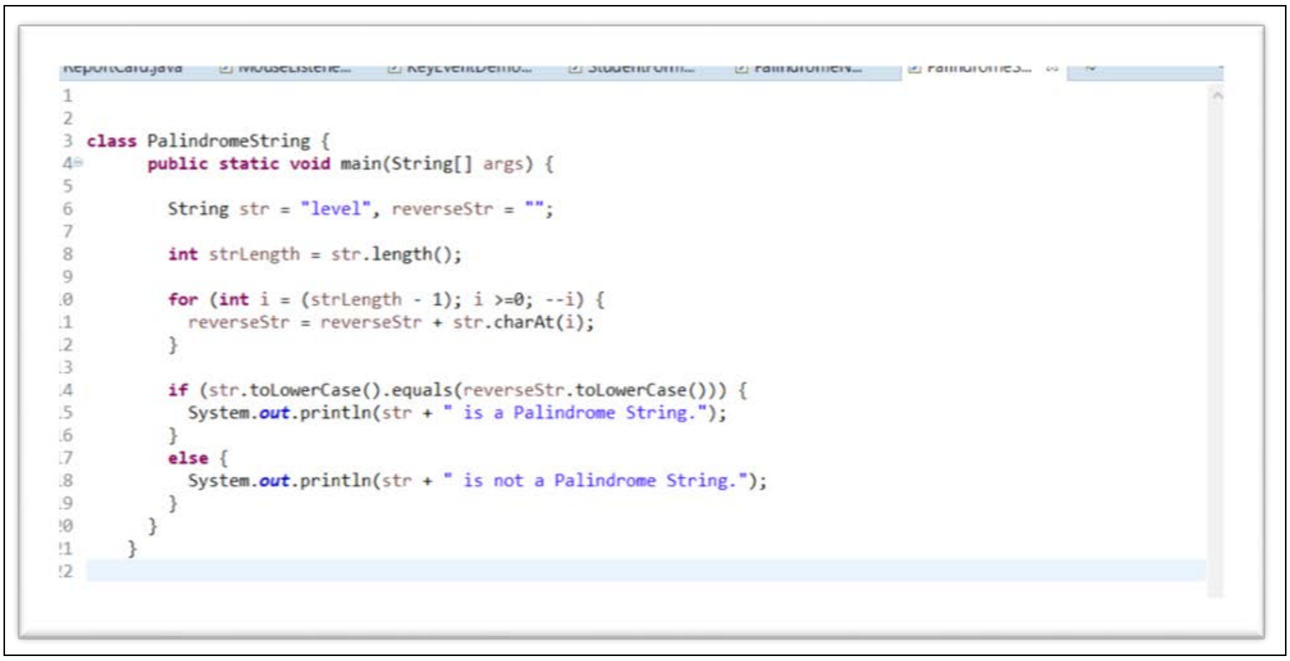
Output

```
3553 is Palindrome.
```

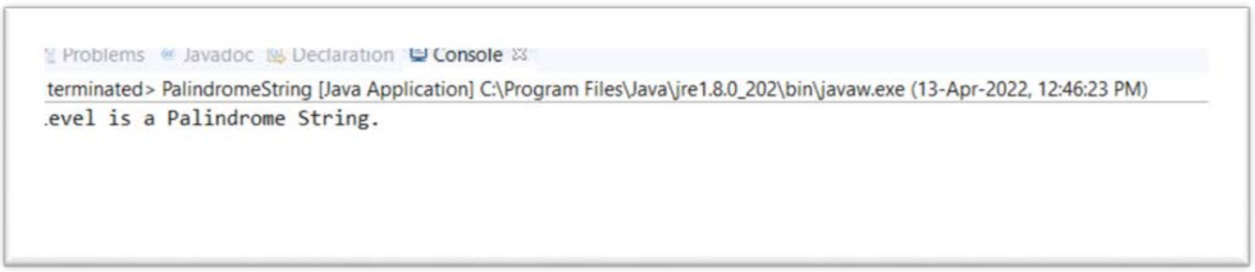
In the above example, we have a number **3553** stored in num and originalNum variables. Here, we have used the

- **while loop** to reverse num and store the reversed number in reversedNum
- **if...else** to check if reversedNum is same as the originalNum

Screenshot’s of Output:



```java


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

      String str = "level", reverseStr = "";

      int strLength = str.length();

      for (int i = (strLength - 1); i >=0; --i) {
        reverseStr = reverseStr + str.charAt(i);
      }

      if (str.toLowerCase().equals(reverseStr.toLowerCase())) {
        System.out.println(str + " is a Palindrome String.");
      }
      else {
        System.out.println(str + " is not a Palindrome String.");
      }
    }
  }

```



```
terminated> PalindromeString [Java Application] C:\Program Files\Java\jre1.8.0_202\bin\javaw.exe (13-Apr-2022, 12:46:23 PM)
.evel is a Palindrome String.
```

Conclusion: