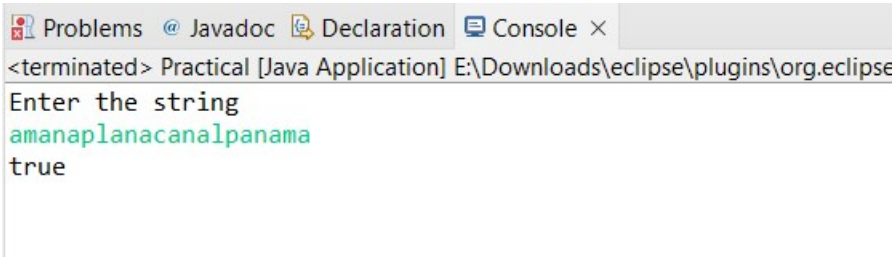
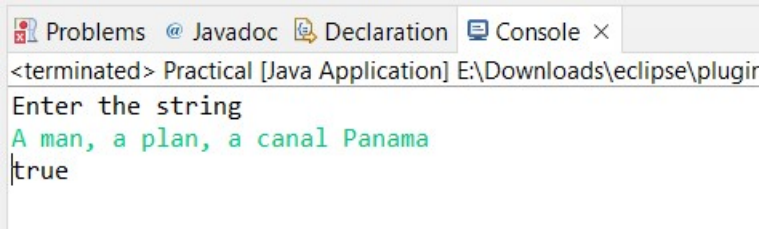
Q2) A phrase is a palindrome if, after converting all uppercase letters into lowercase letters
and removing all non-alphanumeric characters, it reads the same forward and backward. Alphanumeric characters include letters and numbers.
Given a string s, return true if it is a palindrome, or false otherwise.
Given Input : s = "A man, a plan, a canal: Panama"
Output: true
Explanation: "amanaplanacanalpanama" is a palindrome

Solution:-

```
packageapbk;

importjava.util.*;
publicclass Practical {
publicstaticbooleanisPalindrome(String x) {

StringBuilders= newStringBuilder();
        String ans =x.toLowerCase();
for(inti=0; i<ans.length(); i++)
        {
if(Character.isLetter(ans.charAt(i)) || Character.isDigit(ans.charAt(i)))
s.append(ans.charAt(i));
        }

returns.toString().equals(s.reverse().toString());


    }
publicstaticvoid main(String [] args)
    {
       Scanner sc=newScanner(System.in);
       System.out.println("Enter the string");
       String s=sc.nextLine();
       booleanb=Practical.isPalindrome(s);
       System.out.println(b);

    }
}
```

Output:-





Q1) Take an input roman no from user & convert it into its corresponding numeric value.

Eg. Input: X

Output: 10

Input: IX

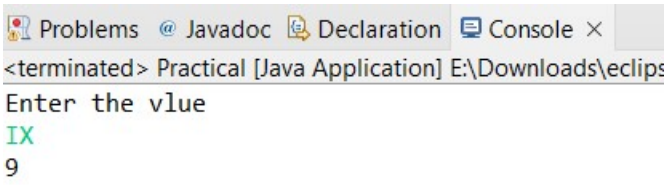
Output: 9.

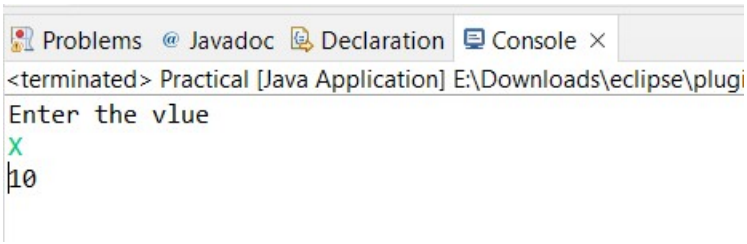
Solution:-

```
packageapbk;


importjava.util.*;

importjava.util.*;

publicclass Practical
{
	int value(charr)
	{
		if (r == 'I')
			return 1;
		if (r == 'V')
			return 5;
		if (r == 'X')
			return 10;
		if (r == 'L')
			return 50;
		if (r == 'C')
			return 100;
		if (r == 'D')
			return 500;
		if (r == 'M')
			return 1000;
		return -1;
	}
```

```
	intromanToDecimal(String str)
	{
		intres = 0;

		for (inti = 0; i<str.length(); i++)
		{
			ints1 = value(str.charAt(i));

			if (i + 1 <str.length())
			{
				ints2 = value(str.charAt(i + 1));

				 if (s1>= s2)
				{
					res = res + s1;
				}
				else
				{
					res = res + s2 - s1;
					i++;
				}
			}
			else {
				res = res + s1;
			}
		}

		returnres;
	}
	publicstaticvoid main(String args[])
	{
		Practical ob = newPractical();
		Scanner sc=newScanner(System.in);
		System.out.println("Enter the vlue");
		String str = sc.nextLine();
		System.out.println(ob.romanToDecimal(str));
	}
}
```

Output:-




Problems
Javadoc
Declaration
Console
<terminated> Practical [Java Application] E:\Downloads\eclipse\plugi
Enter the vlue
X
10