

JAVA ASSINGMENT

1. Given a string of characters including parentheses of 3 types: (), { } and []. You have to find whether the parentheses are balanced or not. Write a function called checkBalanced which takes a string as an argument and if the string is balanced, returns 1, otherwise returns 0. Assume that the string will not contain any white space.

PROGRAM CODE:--

```
import java.util.*;

public class Balanced{

    @SuppressWarnings({ "rawtypes", "unchecked" })
    public static boolean balancedParenthesis(String inputStr) {

        Stack stack = new Stack();

        char[] charArray = inputStr.toCharArray();

        for (int i = 0; i < charArray.length; i++) {

            char current = charArray[i];

            if (current == '{' || current == '[' || current == '(') {
                stack.push(current);
                continue;
            }

            if (stack.isEmpty()) {
                return false;
            }
        }
    }
}
```

```

    }

    char popChar;
    switch (current) {
        case ')':
            popChar = (char) stack.pop();
            if (popChar == '{' || popChar == '[')
                return false;
            break;
        case '}':
            popChar = (char) stack.pop();
            if (popChar == '(' || popChar == '[')
                return false;
            break;
        case ']':
            popChar = (char) stack.pop();
            if (popChar == '(' || popChar == '{')
                return false;
            break;
    }
}
return (stack.isEmpty());
}

```

```

public static void main(String[] args) {

```

```

    String inputStr;

```

```

    Scanner sc = new Scanner(System.in);

```

```

    System.out.println("Enter input string to check:");

```

```

    inputStr = sc.nextLine();

```

```

    if (balancedParenthesis(inputStr))

```

```

        System.out.println("Input string "+inputStr+" is balanced.");

```

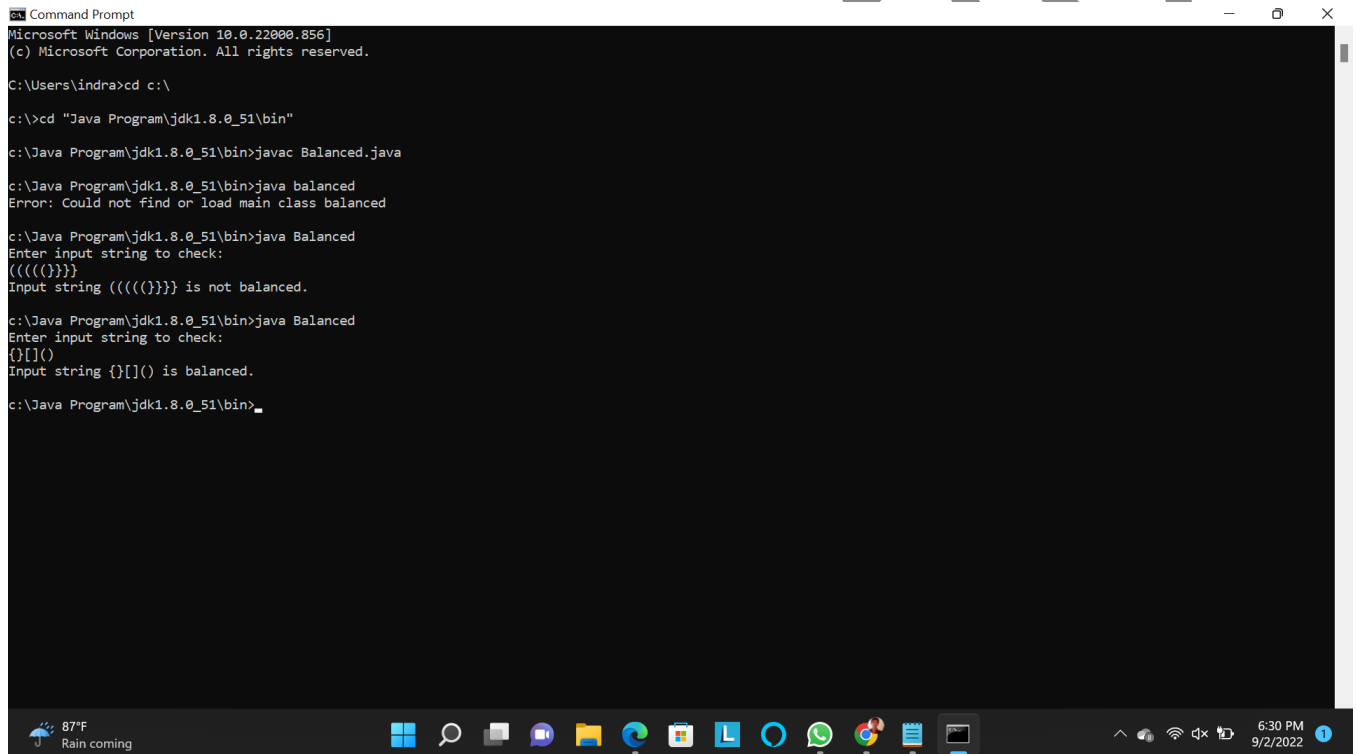
```

    else

```

```
        System.out.println("Input string "+inputStr+" is not balanced.");  
    }  
}
```

OUTPUT:--



```
Command Prompt  
Microsoft Windows [Version 10.0.22000.856]  
(c) Microsoft Corporation. All rights reserved.  
  
C:\Users\indra>cd c:\  
  
c:\>cd "Java Program\jdk1.8.0_51\bin"  
  
c:\Java Program\jdk1.8.0_51\bin>javac Balanced.java  
  
c:\Java Program\jdk1.8.0_51\bin>java balanced  
Error: Could not find or load main class balanced  
  
c:\Java Program\jdk1.8.0_51\bin>java Balanced  
Enter input string to check:  
((((()))))  
Input string (((((())))) is not balanced.  
  
c:\Java Program\jdk1.8.0_51\bin>java Balanced  
Enter input string to check:  
{[]}()  
Input string {}[]() is balanced.  
  
c:\Java Program\jdk1.8.0_51\bin>
```

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