

# **Laboratory Work**

**Subject: Java Technologies**

**Branch: B.Tech. (CE)**

**Semester: IV**

**Batch: A1**

Student Roll No: CE001

Student Name: NISARG KALPESHBHAI AMLANI

Department of Computer  
Faculty of Technology,  
Dharmsinh Desai University,



Gujarat, INDIA.

Engineering,  
Nadiad – 387001.

### Question 1

Write a program that returns the number of times that the string "hi" appears anywhere in the given string.

### Solution

```
import java.util.Scanner;
```

```
class Substr {
```

```
    public static void main(String[] args) {  
        Scanner obj = new Scanner(System.in);  
        System.out.print("Enter string: ");  
        String str = obj.nextLine();
```

```
        int count = 0;  
        int index = 0;
```

```
        while ((index = str.indexOf("hi", index)) != -1) {  
            count++;  
            index += 2;  
        }
```

```
        System.out.println("The count is: " + count);  
    }  
}
```

### Screenshot

```
4\java\labs\java_labs\lab2\out\produc
Enter string: nisargamlani
The count is: 0

Process finished with exit code 0
|
```

## Question 2

Write a program which checks whether the input string is palindrome or not and then display an appropriate message [e.g. “Refer” is a palindrome string].

## Solution

```
import java.util.Scanner;
```

```
class plaindrom{
    public static void main (String [] args)
    {
        Scanner obj = new Scanner(System.in);
        System.out.print("Enter String :- ");
        String s = obj.nextLine();
        StringBuilder s1 = new StringBuilder(s.toLowerCase());
        StringBuilder s2 = new StringBuilder(s.toLowerCase());
        s2.reverse();

        if((s1.toString()).equals(s2.toString()))
            System.out.print("plindrom");
        else System.out.print(" not palindrom");
    }
}
```

## Screenshot

```
"C:\Program Files\Eclipse Adoptium\jdk-17.0.8.101-hotspot\bin\java.exe
-jar=60172:C:\Users\LENOVO\AppData\Local\Programs\IntelliJ IDEA Ulti
4\java\labs\out\production\labs" plindrom
Enter String :- nisarggrasin
plindrom
Process finished with exit code 0
```

## Question 3

Write a program that takes your full name as input and displays the abbreviations of the first and middle names except the last name which is displayed as it is. For example, if your name is Robert Brett Roser, then the output should be R.B.Roser.

## Solution

```
import java.util.*;

class abbreviation{
    public static void main(String [] args)
    {
        Scanner obj = new Scanner(System.in);
        System.out.print("Enter string :- ");
        String S = obj.nextLine();

        int count = 1;
        String []Fullname = S.split(" ");
```

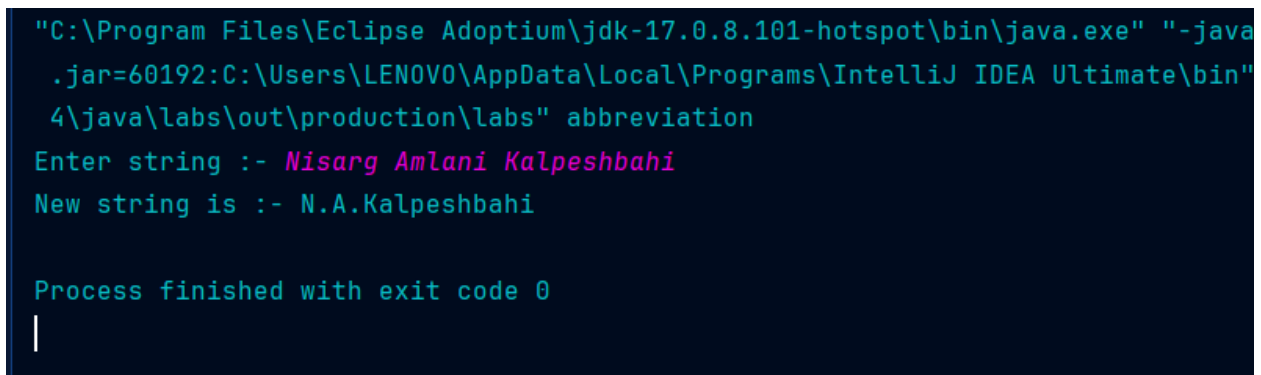
```

StringBuffer n = new StringBuffer();
for(String s : Fullname)
{
    if(count%3 == 0)
    {
        n.append(s);
    }
    else{
        n.append(String.valueOf(s.charAt(0)) + "");
    }
    count++;
}

System.out.println("New string is :- " + n );
}
}

```

## Screenshot



```

"C:\Program Files\Eclipse Adoptium\jdk-17.0.8.101-hotspot\bin\java.exe" "-java
.jar=60192:C:\Users\LENOVO\AppData\Local\Programs\IntelliJ IDEA Ultimate\bin"
4\java\labs\out\production\labs" abbreviation
Enter string :- Nisarg Amlani Kalpeshbahi
New string is :- N.A.Kalpeshbahi

Process finished with exit code 0
|

```

## Question4

Write a method `String removeWhiteSpaces(String str)` method that removes all the white spaces from the string passed to the method and returns the modified string. Test the functionalities using the `main()` method of the `Tester` class.

## Solution

```
import java.util.*;

class removespaces{

    static String remove_space(String s)
    {
        String []sarr = s.split(" ");
        StringBuffer sb = new StringBuffer();
        for( String str : sarr )
        {
            sb.append(str);
        }

        return sb.toString();
    }

    public static void main (String[] s)
    {
        Scanner obj = new Scanner(System.in);
        System.out.print("Enter string :- ");
        String str = obj.nextLine();

        System.out.print("New String is :- " + remove_space(str));

    }
}
```

## Screenshot

```
"C:\Program Files\Eclipse Adoptium\jdk-17.0
.jar=60745:C:\Users\LENOVO\AppData\Local\P
4\java\labs\out\production\labs" removespa
Enter string :- nisarg amlani
New String is :- nisargamlani
Process finished with exit code 0
```

### Question 5

Write a class Student with member variables int roll\_no, String name and an array to store marks of 5 subjects. Demonstrate constructor overloading and use this keyword. Write a findAverage() method that returns double value. Write a TestStudent class containing main() method to do the following:

- Store the details of one student by creating one object of Student class and display them.
- Store the details of 3 students by creating an array of objects of Student class and display the details of the student who has the highest average amongst the three students.

### Solution

```
import java.util.*;
```

```
class Student{
    int roll;
    String name;
    float Average;
    int[] marks;
```

```

Student(String name , int roll , int[] marks)
{
    this.name = name;
    this.roll = roll;
    this.marks = marks;

    average_marks(marks);
}

void average_marks(int[] marks)
{
    int n = marks.length;
    int sum = 0;

    for (int mark : marks) {
        sum += mark;
    }
    this.Average = sum*1.0f/n;
}
}

class Main
{
    public static void main(String[] args)
    {
        Scanner obj = new Scanner(System.in);
        System.out.print("Enter number :- ");
        int n = obj.nextInt();
        Student[] stud = new Student[n];
        int highest = 0;
        int index = 0;
        for (int i = 0;i<n;i++)
        {
            obj.nextLine();
            System.out.print("Enter student name :- ");

```



```

String name = obj.nextLine();
System.out.print("Enter id :- ");
int roll = obj.nextInt();
int[] marks = new int[5];

for (int j = 0;j<5;j++)
{
    System.out.print("Enter marks of sub " + j + " :- ");
    marks[j] = obj.nextInt();
}

stud[i] = new Student(name,roll,marks);
if(stud[i].Average > highest )
{
    index = i;
}
}

System.out.print(stud[index].name + "\n" + stud[index].roll + "\n"
+ stud[index].Average );

}

}

```

**Screenshot**

```
"C:\Program Files\Eclipse Adoptium\jdk-17.0.8.101-hotspot\bin\java.exe" -jar=60564:C:\Users\LENOVO\AppData\Local\Programs\Intel\4\java\labs\out\production\labs" Main
```

```
Enter number :- 3
```

```
Enter student name :- nisarg
```

```
Enter id :- 5
```

```
Enter marks of sub 0 :- 80
```

```
Enter marks of sub 1 :- 70
```

```
Enter marks of sub 2 :- 42
```

```
Enter marks of sub 3 :- 63
```

```
Enter marks of sub 4 :- 45
```

```
Enter student name :- janmang
```

```
Enter id :- 6
```

```
Enter marks of sub 0 :- 45
```

```
Enter marks of sub 1 :- 89
```

```
Enter marks of sub 2 :- 74
```

```
Enter marks of sub 3 :- 56
```

```
Enter marks of sub 4 :- 41
```

```
Enter student name :- neha
```

```
Enter id :- 3
```

```
Enter marks of sub 0 :- 89
```

```
Enter marks of sub 1 :- 41
```

```
Enter marks of sub 2 :- 23
```

```
Enter marks of sub 3 :- 89
```

```
Enter marks of sub 4 :- 56
```

```
neha
```

```
3
```

```
59.6
```

```
Process finished with exit code 0
```