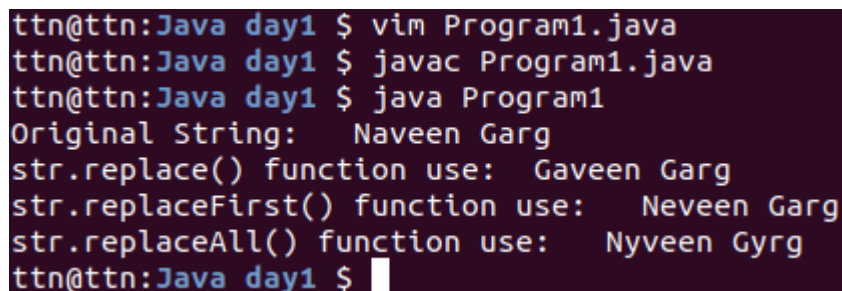


Introduction to Java 1 Exercise

Q1. Write a program to replace a substring inside a string with other string ?

Sol - Program Files Folder name - program1

```
public class Program1 {
    public static void main(String args[]) {
        String str="Naveen Garg";
        System.out.println("Original String: " + str );
        System.out.println("str.replace() function use: "+ str.replace( 'N','G' )
    );
        System.out.println("str.replaceFirst() function use: "+
str.replaceFirst("a", "e") );
        System.out.println("str.replaceAll() function use: "+
str.replaceAll("a", "y") );
    }
}
```



```
ttn@ttn:Java day1 $ vim Program1.java
ttn@ttn:Java day1 $ javac Program1.java
ttn@ttn:Java day1 $ java Program1
Original String:  Naveen Garg
str.replace() function use:  Gaveen Garg
str.replaceFirst() function use:  Neveen Garg
str.replaceAll() function use:  Nyveen GyrG
ttn@ttn:Java day1 $
```

Q2. Write a program to find the number of occurrences of the duplicate words in a string and print them ?

Sol - Program File Folder name - program2

```
public class DuplicateWords {
    public static void main(String[] args) {
        String string = "Naveen Garg is employee of ttn naveen good morning ttn
is a IT company naveen hello naveen";
        int count;
        string = string.toLowerCase();
        String words[] = string.split(" ");

        System.out.println("Number of occurrences of the duplicate words in a
given string : ");
        for(int i = 0; i < words.length; i++) {
            count = 1;
            for(int j = i+1; j < words.length; j++) {
                if(words[i].equals(words[j])) {
                    count++;
                }
            }
        }
    }
}
```

```

        words[j] = "0";
    }
}
if(count > 1 && words[i] != "0")
    System.out.println("Word: " + words[i] + "\nNo. of occurrences is "+
count + "\n");
}
}
}

```

```

ttn@ttn:program2 $ vim DuplicateWords.java
ttn@ttn:program2 $ javac DuplicateWords.java
ttn@ttn:program2 $ java DuplicateWords
Number of occurrences of the duplicate words in a given string :
Word: naveen
No. of occurrences is 4

Word: is
No. of occurrences is 2

Word: ttn
No. of occurrences is 2

```

Q3. Write a program to find the number of occurrences of a character in a string without using loop?

Sol - Program File Folder name - program3

```

class CharacterOccurrences
{
    public static void main(String[] args)
    {
        String str = "naveen Garg naveen";
        int count = str.length() - str.replace("e", "").length();
        System.out.println("Number of occurrences of 'e' in "+ str + " = "+count);
    }
}

```

```

ttn@ttn:program3 $ vim CharacterOccurrences.java
ttn@ttn:program3 $ javac CharacterOccurrences.java
ttn@ttn:program3 $ java CharacterOccurrences
Number of occurrences of 'e' in naveen Garg naveen = 4
ttn@ttn:program3 $

```

Q4. Calculate the number & Percentage Of Lowercase Letters,Uppercase Letters, Digits And Other Special Characters In A String

Sol - Program File Folder name - program4

```

import java.io.*;

class NoAndPercentage
{
    public static void main(String args[])
    {
        String str = "Ind:354/2, Overs:48";
        int total_length = str.length();
        int upper = 0, lower = 0, number = 0, special = 0;

        for(int i = 0; i < str.length(); i++)
        {
            char ch = str.charAt(i);
            if (ch >= 'A' && ch <= 'Z')
                upper++;
            else if (ch >= 'a' && ch <= 'z')
                lower++;
            else if (ch >= '0' && ch <= '9')
                number++;
            else
                special++;
        }

        double upperPercentage = (upper*100.0)/total_length;
        double lowerPercentage = (lower*100.0)/total_length;
        double numberPercentage = (number*100.0)/total_length;
        double specialPercentage = (special*100.0)/total_length;

        System.out.println("Number of Lower case letters : " + lower + " and
Percentage is " + lowerPercentage);
        System.out.println("Number of Upper case letters : " + upper + " and
Percentage is " + upperPercentage);
        System.out.println("Number of Digits : " + number + " and Percentage is
" + numberPercentage);
        System.out.println("Number of Special characters : " + special + " and
Percentage is "+ specialPercentage);
    }
}

```

```

ttn@ttn:Program4 $ vim NoAndPercentage.java
ttn@ttn:Program4 $ javac NoAndPercentage.java
ttn@ttn:Program4 $ java NoAndPercentage
Number of Lower case letters : 6 and Percentage is 31.57894736842105
Number of Upper case letters : 2 and Percentage is 10.526315789473685
Number of Digits : 6 and Percentage is 31.57894736842105
Number of Special characters : 5 and Percentage is 26.31578947368421
ttn@ttn:Program4 $

```

Q5. Find common elements between two arrays.

Sol - Program Files Folder name - program5

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

class CommomElement{
    public static void FindCommonElements(int[] arr1, int[] arr2)
    {
        Set<Integer> set1 = new HashSet<Integer>();
        Set<Integer> set2 = new HashSet<Integer>();
        for (int i : arr1)
        {
            set1.add(i);
        }

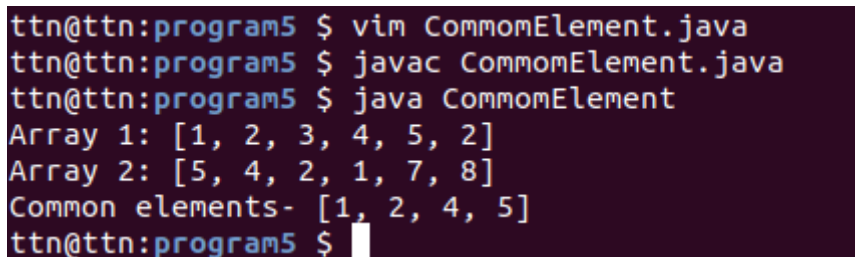
        for (int i : arr2)
        {
            set2.add(i);
        }

        set1.retainAll(set2); // find common elements
        System.out.println("Common elements- " + set1);
    }

    public static void main(String[] args)
    {
        int[] arr1 = { 1, 2, 3, 4, 5, 2 };

        int[] arr2 = { 5, 4, 2, 1, 7, 8 };

        System.out.println("Array 1: "+ Arrays.toString(arr1));
        System.out.println("Array 2: "+ Arrays.toString(arr2));
        FindCommonElements(arr1, arr2);
    }
}
```



```
ttn@ttn:program5 $ vim CommomElement.java
ttn@ttn:program5 $ javac CommomElement.java
ttn@ttn:program5 $ java CommomElement
Array 1: [1, 2, 3, 4, 5, 2]
Array 2: [5, 4, 2, 1, 7, 8]
Common elements- [1, 2, 4, 5]
ttn@ttn:program5 $
```

Q6. There is an array with every element repeated twice except one. Find that element

Sol - Program Files Folder name - program6

```
class FindSingleElement
{
    public static void main (String[] args)
    {
        int ar[] = {2, 3, 1, 4, 1, 3, 4};
        int n = ar.length;
        int val = ar[0];
        for (int i = 1; i < n; i++)
            val = val ^ ar[i];
        System.out.println("Element occurring once is " + val);
    }
}
```

```
ttn@ttn:program6 $ vim FindSingleElement.java
ttn@ttn:program6 $ javac FindSingleElement.java
ttn@ttn:program6 $ java FindSingleElement
Element occurring once is 2
ttn@ttn:program6 $
```

Q7. Write a program to print your Firstname,LastName & age using static block,static method & static variable respectively

Sol - Program Files Folder name - program7

```
class StaticProgram
{
    static int age = 24;
    static void lname()
    {
        System.out.println("Last Name: Garg");
    }
    static
    {
        System.out.println("First Name: Naveen");
    }

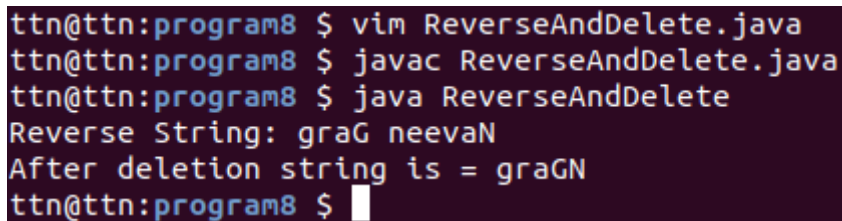
    public static void main(String args[])
    {
        lname();
        System.out.println("Age: " + age);
    }
}
```

```
ttn@ttn:program7 $ vim StaticProgram.java
ttn@ttn:program7 $ javac StaticProgram.java
ttn@ttn:program7 $ java StaticProgram
First Name: Naveen
Last Name: Garg
Age: 24
```

Q8. Write a program to reverse a string and remove character from index 4 to index 9 from the reversed string using String Buffer

Sol - Program Files Folder name - program8

```
import java.lang.*;
public class ReverseAndDelete {
    public static void main(String[] args)
    {
        String str = "Naveen Garg";
        StringBuffer sbr = new StringBuffer(str);
        sbr.reverse();
        System.out.println("Reverse String: " + sbr);
        sbr.delete(4, 10);
        System.out.println("After deletion string is = " + sbr);
    }
}
```



```
ttn@ttn:program8 $ vim ReverseAndDelete.java
ttn@ttn:program8 $ javac ReverseAndDelete.java
ttn@ttn:program8 $ java ReverseAndDelete
Reverse String: graG neevaN
After deletion string is = graGN
ttn@ttn:program8 $
```

Q9. Write a program to display values of enums using a constructor & getPrice() method (Example display house & their prices)

Sol - Program Files Folder name - program9

```
enum House {
    House101(900000), House103(150000), House105(5000000), House111(356000)
    , House114(1000002);
    int price;
    House(int p)
    {
        price = p;
    }
    int getPrice()
    {
        return price;
    }
}

public class Const {
    public static void main(String args[]){
        System.out.println("All House prices:");
        for (House c : House.values())
            System.out.println(c + " costs " + c.getPrice() + " Rupees.");
    }
}
```

```
ttn@ttn:Java day1 $ javac Const.java
ttn@ttn:Java day1 $ java Const
All House prices:
House101 costs 900000 Rupees.
House103 costs 150000 Rupees.
House105 costs 5000000 Rupees.
House111 costs 356000 Rupees.
House114 costs 1000002 Rupees.
ttn@ttn:Java day1 $
```

Q10. Write a single program for following operation using overloading

A) Adding 2 integer number

B) Adding 2 double

C) multiplying 2 float

D) multiplying 2 int

E) concatenate 2 string

F) Concat 3 String

Sol - Program Files Folder name - program10

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

```
public class OverloadingUse {
    public int add(int a, int b)
    {
        return a+b;
    }
    public double add(double a, double b)
    {
        return a+b;
    }
    public float multiply(float a, float b)
    {
        return a*b;
    }
    public int multiply(int a, int b)
    {
        return a*b;
    }
    public void stringAdd(String a, String b)
    {
        String str = a+b;
        System.out.println("Concatenation of two Strings : "+ str);
    }
    public void stringAdd(String a, String b, String c)
    {
        String str = a+b+c;
        System.out.println("Concatenation of three Strings : "+ str);
    }
    public static void main(String[] args) {
        OverloadingUse obj = new OverloadingUse();
```

```

Scanner sc = new Scanner(System.in);

int result = obj.add(23,35);
System.out.println("Addition of two integer : "+ result);

double result2 = obj.add(234563.212,355678.32);
System.out.println("Addition of two double : "+ result2);

double result3 = obj.multiply(4.6f, 5.6f);
System.out.println("Multiplication of two integer : "+ result3);

int result4 = obj.multiply(45,20);
System.out.println("Multiplication of two integer : "+ result4);

obj.stringAdd("Hello ", "World! ");
obj.stringAdd("Hello ", "World! ", "This is Ques10");

}
}

```

```

ttn@ttn:program10 $ vim OverloadingUse.java
ttn@ttn:program10 $ javac OverloadingUse.java
ttn@ttn:program10 $ java OverloadingUse
Addition of two integer : 58
Addition of two double : 590241.532
Multiplication of two integer : 25.759998321533203
Multiplication of two integer : 900
Concatenation of two Strings : Hello World!
Concatenation of three Strings : Hello World! This is Ques10

```

Q11. Create 3 sub class of bank SBI,BOI,ICICI all 4 should have method called `getDetails` which provide there specific details like `rateofinterest` etc, print details of every banks

Sol - Program Files name - program11

```

import java.util.Scanner;

class Bank{
    protected String name;
    protected int noOfBranches;
    protected float rateofInterest;

    Bank(String name, int noOfBranches, float rateofInterest){
        this.name = name;
        this.noOfBranches = noOfBranches;
        this.rateofInterest = rateofInterest;
    }
    public void getDetails()
    {
        System.out.println("Bank name : "+name);
        System.out.println("No of Branches : "+noOfBranches);
    }
}

```



```

        System.out.println("Rate of interest : "+rateofInterest);
        System.out.println();
    }
}

class SBI extends Bank{

    SBI(String name, int noOfBranches, float rateofInterest){
        super(name,noOfBranches,rateofInterest);
    }
}

class BOI extends Bank{

    BOI(String name, int noOfBranches, float rateofInterest){
        super(name,noOfBranches,rateofInterest);
    }
}

class ICICI extends Bank{

    ICICI(String name, int noOfBranches, float rateofInterest){
        super(name,noOfBranches,rateofInterest);
    }
}

public class Program11 {
    public static void main(String[] args) {

        Bank b = new SBI("SBI",200,7);
        b.getDetails();

        Bank b1 = new BOI("BOI",70,8);
        b1.getDetails();

        Bank b2 = new ICICI("ICICI",90,9);
        b2.getDetails();
    }
}

```

```

ttn@ttn:program11 (Introduction_to_Java1_exercise)$ vim Program11.java
ttn@ttn:program11 (Introduction_to_Java1_exercise)$ javac Program11.java
ttn@ttn:program11 (Introduction_to_Java1_exercise)$ java Program11
Bank name : SBI
No of Branches : 200
Rate of interest : 7.0%

Bank name : BOI
No of Branches : 70
Rate of interest : 8.0%

Bank name : ICICI
No of Branches : 90
Rate of interest : 9.0%

```