ASSIGNMENT - 2

Name:- Ch. Mahanvitha

Reg. No:- 192211785

Course Code:- CSA 0914

Course Name:- Programming in Java for Raspberry Pi

Faculty Name:- Dr. Hemavathi.

Reverse a Number

Problem Statement:- write a Java program to reverse the digits of a given number.

Example:- 1) Input: 12345

2) Output: 54321

Hints:- 3) Use a while loop to extract each digit and reverse the number.

Aim:- To write a Java program for reverse of a number.

Pseudo Code:- 1) Start

2) Enter the number

3) Initialize reversedNumber = 0.

4) Multipy 'reversedNumber' by 10.

5) Display output.

Program:-

```
import java.util.Scanner;
Public class ReverseNumber{
        public static void main(String[] args){
          Scanner sc =new  Scanner(System.in);
          System.out.print("Enter number:");
        int number = sc.nextInt();
        int reversedNumber=0;
       while(number !=0){
```

```
reversedNumber = reversedNumber * 10 + digit;
number = number / 10;
}
System.out.println("Reversed Number: " +
                   reversedNumber);
}
}
```

Input:- Enter number: 12345

output:- Reversed number:

Armstrong Number

Input:- 153

output:- 153 is an Armstrong Number.

Aim:- To write a Java program for Armstrong Number.

Pseudo code:- 1) Start

2) enter a number

3) Initialize Sum = 0.

4) Use while loop for each digit of number:
   Cube digit and add it to 'Sum'.

5) Compare 'Sum' with original number.

ogram:-

```
import java.util.Scanner;
public class Armstrong{
    public static void main(String[] args){
     Scanner sc= new Scanner (System.in);
     System.out.print("Enter a number: ");
     int number = sc.nextInt ();
    int originalNumber=number;
     int sum=0;
   while (number!=0){
      int digit =number%10;
      sum+= digit*digit*digit;
      number /=10;
    }
if (sum==originalNumber){
    System.out.print(originalNumber +" is
                    armstrong number");
}else {
    System.out.print(originalNumber+" is
                    armstrong number");
    }
}}
```

Input:- Enter the number: 153
output:- 153 is armstrong number.

Calculate the GCD of two numbers.
Input:- 12, 18
output:- GCD is 6

Aim:- To write a Java program to calculate the GCD of two numbers.

Pseudo code:- 1) Start
2) Enter the numbers
3) Use temporary variable for finding GCD.
4) Display output.

Program:-

```
import java.util.Scanner;
Public class GCD{
    Public Static void main(String[] args) {
        Scanner sc=new Scanner(System.in);
        System.out.print("Enter numbers: ");
        int a=sc.nextInt();
        int b=sc.nextInt();
        int gcd=findGCD(a,b);
        System.out.println("GCD is "+gcd);
    }
Public Static int findGCD(int a,int b){
    while (b!=0){
        int temp=b;
        b=a%b;
        a=temp; }
} return a;
```

Input:- Enter numbers: 12 18

Output:- GCD is 6

Merge Two Sorted Arrays.

Input:- {1,3,5},{2,4,6}.

output:- {1,2,3,4,5,6}.

Hints:- use pointers.

Aim:- To write a Java program to merge two Sorted Arrays.

Pseudo code:- 1) Start

2) Initialize two pointers.

3) create new array to store result.

4) use while loop to compare elements and merge arrays.

5) Display result.

Program:-

```
import java.util.Arrays;
public class MergeArrays{
    public static void main(String[] args){
        int[] array1 = {1, 3, 5};
        int[] array2 = {2, 4, 6};
        int[] mergedArray = mergeArrays(array1,
                                        array2);
        System.out.println("Merged Array:" +
                           Arrays.toString(mergedArray));
    }
```

```
public static int[] mergeArrays(int[] array1,
                                int[] array2){
    int[] result=new int[array1.length+array2.
                                    length];
    int i=0,j=0,k=0;
    while(i<array1.length && j<array2.length){
      if(array1[i]<=array2[j]){
        result[k++]=array1[i++];}
      else{
        result[k++]=array2[j++];
      }
    }
    while(i<array1.length){
        result[k++]=array1[i++];
    }
    while(j<array2.length){
        result[k++]=array2[j++];
    }
    return result;
  }
}
```

Inputi- Array1 : {1,3,5}
Array2 : {2,4,6}

output:- Merged Array : {1,2,3,4,5,6}.

Count the Frequency of Characters in a String.

Input:- "hello".

output:- h:1, e:1, l:2, o:1.

Aim:- To write a Java program to count the frequency of each character in a string.

Pseudo Code:- 1) Start
2) Enter the String.
3) Initialize an empty HashMap to store frequencies of the Character.
4) Use for loop and find frequency
5) Display output.

Program:-

```
import java.util.HashMap;
import java.util.Map;
import java.util.Scanner;

Public class CharacterFrequency {
    public static void main (String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("enter a String: ");
        String input = sc.nextLine();
        HashMap<Character, Integer> charFrequency
                                = new HashMap<>();
        for (char c: input.toCharArray()){
            if(charFrequency.containsKey(c)) {
                charFrequency.put(c, charFrequency.get(c)
                                    +1);
            } else {
                charFrequency.put(c, 1);
            }
        }
```

```
for(Map.Entry<Character,Integer>entry :
                    charFrequency.entrySet()){
    System.out.println(entry.getKey()+":"+entry.
                                    getValue());
    }
}
}
```

Input:- Enter the String: hello

Output:- h:1
e:1
l:2
o:1