

- Assignment -2

Subject :- programming in  
Java

Code :- CSA0914

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### Reverse String

Aim: to write Reverse string in java

#### Pseudo code:

- create a class and declare variable
- Step 2 → get input from user
- Step 3 → Initialize for loop ( $i=0; i < num; i++$ )
- Step 4 → Inside digit = num % 10;  
reverse = rev + digit;  
num = num / 10; & print the reverse.

#### Program

```
import java.util.Scanner;
Public class Reverse{
    Public static void main(String[] args) {
        Scanner input = new Scanner(System.in);
        System.out.println("Enter the number:");
        int num = input.nextInt();
        int rev = 0;
        while (num != 0) {
            digit = num % 10;
            reverse = rev * 10 + digit;
            num = num / 10;
        }
        System.out.println("Reverse" + rev);
        input.close();
    }
}
```

### Output

Enter number = 13467  
Reverse = 76431

### ③ Armstrong

Aim: To write armstrong program in java

#### Pseudocode

- Create a class & declare variables
- Create for loop & initialize  $i=1, i \leq n, i++$
- $digit = num/10$ ; get num from user
- $reverse = reverse * 10 + digit \rightarrow sum = digit * digit * digit$
- If ( $sum == num$ ) Print Armstrong else not

#### Program

```
import java.util.Scanner;  
Public class Armstrong {  
    Public static void main (String[] args)  
    {  
        Scanner s = new Scanner (System.in);  
        System.out.println ("Enter number:");  
        int n = s.nextInt();  
        int sum=0, rev=0, digit=0;  
        for (i=1; i≤n; i++)  
        {  
            digit = num/10;  
            sum = digit * digit * digit;  
            num = num/10;  
        }  
    }  
}
```

```
if (sum==num)
{
    System.out.println ("It is an Armstrong");
}
else
{
    System.out.println ("Not an Armstrong");
    s.close();
}
```

Output  
Enter number: 153  
It is an Armstrong

### (3) GCD

Aim → To write Program on GCD

#### Pseudocode

- Declare a class and declare variables
- declare temp, a, b & get input a & b
- $a = a \& b$ ,  $b = a \& b$ , print a & b.

#### Program

```
import java.util.Scanner;
Public class GCD{
    Public static void main (String [] args)
    {
        Scanner s=new Scanner (System.in);
        System.out.println ("Enter values of a & b");
        int a=s.nextInt();
```

```
int b = System.in.readInt();
a = a * b;
b = a % b;
System.out.println("Printing GCD:" + b);
```

#### Output

Enter number of a & b = 12 18

Printing GCD : 6.

#### Q Merge two arrays

Aim : write a program to merge two arrays

#### Pseudo code:

```
#> Declare a class and declare variables  
#> Get array1 & array2 from user  
#> while (i < length && j < length )  
    if (array1[i] < array2[j]) {  
        mergedArray [k++] = array1[i];  
    }  
    else  
        mergedArray [k++] = array2[j];  
    Print result;
```

Program:-

```
Public class Merge {
    Public static void main (String[] args) {
        int[] array1 = {1, 3, 5, 7};
        int[] array2 = {2, 4, 6, 8, 10};
        int[] merged = mergeSortedArray (array1, array2);
        System.out.println ("Merged array: ");
        for (int num : merged) {
            System.out.print (num + " ");
        }
    }
    Public static int[] mergeSortedArrays (int[] array1, array2) {
        int length1 = array1.length;
        int[] merged = new int [length1 + length2];
        int i = 0, j = 0, k = 0;
        while (i < length1 & j < length2) {
            if (array1[i] < array2[j]) {
                merged[k++] = array1[i++];
            } else {
                merged[k++] = array2[j++];
            }
        }
        return merged;
    }
}
```

Output:-

Merged sorted array = {1, 3, 5, 6, 7, 8, 10}

### frequency of character

Aim: to count the frequency of character in String

#### Pseudo code

- Scanner, hashmap, map, Scanner
- Create a class & declare variable
- Input from the user
- Iterates through each character of the string
- if the character is already there increment the count & print each char

#### Program

```
import java.util.HashMap;
import java.util.Map;
import java.util.Scanner;
public static void main(String[] args)
{
    Scanner s = new Scanner(System.in);
    System.out.print("Enter string:");
    String input = s.nextLine();
    Scanner.close();
    Map<Character, Integer> frequencyMap = count
        .charactersFrequency(input);
    System.out.print("character frequency:");
    for (Map.Entry<Character, Integer> entry;
```

```
frequency Map.entrySet().forEach(  
    System.out.println("key : " +  
        int value));  
}  
  
public static Map<Character, Integer>  
countCharacterFrequency(String str){  
    Map<Character, Integer> frequencyMap = new  
        HashMap<Character, Integer>();  
    for(char ch: str.toCharArray()) {  
        if(frequencyMap.containsKey(ch))  
            frequencyMap.put(ch, frequencyMap.get(ch) + 1);  
        else  
            frequencyMap.put(ch, 1);  
    }  
    return frequencyMap;  
}
```

Output:

Input : hello  
h:1 , e:1 , l:2 , o:1