**\_ JAVA ASSIGNMENT 1 \_**

**Question 1** : Find out if the given number is an Armstrong number.

public class Armstrong

{

public static void main(String[] args)

{

int number = 153,sum=0,r,originalNumber;

originalNumber=number;

while(originalNumber>0)

{

r=originalNumber%10;

sum=sum+(r\*r\*r);

originalNumber=originalNumber/10;

}

if(sum == number)

System.out.println(number + " is an Armstrong number.");

else

System.out.println(number + " is not an Armstrong number.");

}

}

//output : 153 is an Armstrong number

**Question 2** : Find out all the Armstrong numbers between range of 100-999.

public class Armstrong2

{

public static void main(String[] args)

{

int n, rem, sum = 0;

System.out.print("Armstrong numbers from 100 to 999:");

for(int i = 100; i <= 999; i++)

{

n = i;

while(n > 0)

{

rem = n % 10;

sum = sum + (rem \* rem \* rem);

n = n / 10;

}

if(sum == i)

{

System.out.print(i+" ");

}

sum = 0;

}

}

}

//output

// Armstrong numbers from 100 to 999: 153 370 371 407

**Question 3** : Find out simple as well as compound interest of supplied value.

import java.util .\*;

public class Sici

{

public static void main (String argu[ ])

{

double pr, rate, t, sim,com;

Scanner sc=new Scanner (System. in);

System.out.println("Enter the amount:");

pr=sc.nextDouble();

System. out. println("Enter the No.of years:");

t=sc.nextDouble();

System. out. println("Enter the Rate of interest");

rate=sc.nextDouble();

sim=(pr \* t \* rate)/100;

com=pr \* Math.pow(1.0+rate/100.0,t) - pr;

System.out.println("Simple Interest="+sim);

System.out. println("Compound Interest="+com);

}

}

//output

/\*Enter the amount:

9

Enter the No.of years:

3

Enter the Rate of interest

0.5

Simple Interest=0.135

Compound Interest=0.13567612499999626

\*/

**Question 4** : Calculate the income tax on basis of following table

import java.util.Scanner;

public class IncomeTax {

public static void main(String[] args)

{

double tax=0,CTC;

Scanner scanner =new Scanner (System.in);

System.out.println("Enter income :");

CTC =scanner.nextDouble();

if(CTC <= 180000)

{

tax=0;

}

else if (CTC > 180000 && CTC <= 300000)

{

tax =(CTC/100)\*10;

System.out.println("Income tax payable is :"+tax);

}

else if (CTC > 300000 && CTC <= 500000)

{

tax =(CTC/100)\*20;

System.out.println("Income tax payable is :"+tax);

}

else if (CTC > 500000 && CTC <= 1000000)

{

tax =(CTC/100)\*30;

System.out.println("Income tax payable is :"+tax);

}

}

}

//output

/\* Enter income :

300000

Income tax payable is :30000.0

\*/

**Question 5** : Supply marks of three subjects and declare the result,result declaration is based

On below conditions .

import java.util.Scanner;

public class studResullt {

public static void main(String[] args) {

double sub1, sub2, sub3;

Scanner scanner = new Scanner(System.in);

System.out.println("Enter marks in subject 1: ");

sub1 = scanner.nextDouble();

System.out.println("Enter marks in subject 2: ");

sub2 = scanner.nextDouble();

System.out.println("Enter marks in subject 3: ");

sub3 = scanner.nextDouble();

if(sub1 > 60 && sub2 > 60 && sub3 > 60)

{

System.out.println("Passed");

}

else if((sub1 >60 && sub2 >60) || (sub2 >60 && sub3 >60) || (sub1 >60 && sub3 >60))

{

System.out.println("Promoted");

}

else

{

System.out.println("Failed");

}

}

}

//output

/\*Enter marks in subject 1:

80

Enter marks in subject 2:

80

Enter marks in subject 3:

57

Promoted

\*/

**Question 6** : Consider a CUI based application,where you are asking for username,password and

so on…

import java.util.Scanner;

public class Atm {

public static void main(String[] args)

{

int count=0,attempt;

Scanner sc =new Scanner(System.in);

System.out.println("Enter username : ");

String username =sc.nextLine();

System.out.println("Enter password :");

String password =sc.nextLine();

if(username.equals("Abhishek Alagi") && password.equals("Alagi"))

{

System.out.println("Welcome Abhishek Alagi");

}

else

{

count++;

attempt=3-count;

System.out.println("Try again....Remaining attempts"+attempt);

if(attempt==0)

{

System.out.println("Contact admin");

}

}

}

}

//output

/\*

Enter username :

Abhishek Alagi

Enter password :

Alagi

Welcome Abhishek Alagi

\*/

**Question 7** : There is an array of size 15,which may or may not be sorted.You should

WAP to accept a number and search if it in contained in the array

import java.util.Arrays;

//import java.util.stream.IntStream;

class ArraySearch

{

public static void check(int[] arr, int searchValue)

{

Arrays.sort(arr);

int result = Arrays.binarySearch(arr, searchValue);

boolean test = result > 0 ? true : false;

System.out.println("Is " + searchValue + " present in given array: " + test);

}

public static void main(String[] args)

{

int arr[] = { 5, 12,14,6,78,19,1,23,26,35,37,7,52,86,47 };

int searchValue = 19;

System.out.println("Array: " + Arrays.toString(arr));

check(arr, searchValue);

}

}

//output

/\*

Array: [5, 12, 14, 6, 78, 19, 1, 23, 26, 35, 37, 7, 52, 86, 47]

Is 19 present in given array: true

**Question 8** : Using above array write method apply sorting using Bubble sort

import java.util.Arrays;

public class BubbleSort

{

public static void main(String[] args)

{

int arr[]= {5,12,14,6,78,19,1,23,26,35,37,7,52,86,47},temp;

System.out.println(Arrays.toString(arr));

for(int i=0;i<arr.length-1;i++)

{

for (int j=0; j<arr.length-i-1;j++)

{

if(arr[j] > arr[j+1])

{

temp =arr[j];

arr[j]=arr[j+1];

arr[j+1]=temp;

}

}

}

System.out.println("Sorted arrays : ");

System.out.println(Arrays.toString(arr));

}

}

//output

/\*

[5, 12, 14, 6, 78, 19, 1, 23, 26, 35, 37, 7, 52, 86, 47]

Sorted arrays :

[1, 5, 6, 7, 12, 14, 19, 23, 26, 35, 37, 47, 52, 78, 86]

\*/

**Question 9** : Accept the marks of 3 students for subject say A,B,C .Find Total scored and average

In all subjects. Also,find Total and average scored by students in each respective subject.

import java.util.Scanner;

public class Student

{

public static void main(String[] args)

{

Scanner scanner = new Scanner(System.in);

double a[][] = new double [3][3];

double total =0;

System.out.println("Enter the marks :");

for(int i=0;i<3;i++)

{

for(int j=0;j<3;j++)

{

a[i][j]=scanner.nextInt();

}

}

for(int i=0;i<3;i++)

{

for(int j=0;j<3;j++)

{

total+=a[i][j];

}

}

System.out.println("Total marks in all subjects are :" +total);

System.out.println("Average marks of all subjects are :" +total/9);

for(int i=0;i<3;i++)

{

total=0;

for(int j=0;j<3;j++)

{

total +=a[i][j];

}

System.out.println();

System.out.println("Total marks of students :" +(i+1)+"of each subject is:"+total);

System.out.println("Average marks students :" +(i+1)+"of each subject is:"+total/3);

System.out.println();

total=0;

}

}

}

//output

/\*

Enter the marks :

89

89

89

89

89

89

89

89

89

Total marks in all subjects are :801.0

Average marks of all subjects are :89.0

Total marks of students :1of each subject is:267.0

Average marks students :1of each subject is:89.0

Total marks of students :2of each subject is:267.0

Average marks students :2of each subject is:89.0

Total marks of students :3of each subject is:267.0

Average marks students :3of each subject is:89.0

\*/