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Assignment: 05

1. Write a Program to find the sum of digits of N digit Number (sum should be single digit.

```
Import Java.util.Scanner();
Public class;
{
  Public static void main (String[] args)
  Scanner Input = new Scanner (System.in)
  Int n=Input.nextInt();
  Int sum=0;
  While(n!=0)
  {
    Int rem = n%10;
    sum=sum+rem;
    n=n/10;
  }
  System.out.Println(sum);
```

2. Write a Program to find the square root of a Perfect Square number.

```
Import Java.util.Scanner();
class main{
  Public class ak
{
  Public static void main (String[] args)
  {
  Scanner sc=input = new Scanner (System.in);
  double n=Input.nextInt();
  double Sqrt = Math.Pow(n,0.5);
  double sq = Math.Sqrt(n);
  System.out.Println("+"-"+Sqrt);
  }
}
```

3 Write a Program for matrix multiplication:

```
import java.util.Scanner;
class main{
    Public static void main (String[] args);
    Scanner input=new Scanner (System.in);
    int r=input.nextInt();
    int c=input.next.Int();
    int mat1[][]= new int [r][c];
    int mat2[][]= new int [r][c];
    for (int i=0; i<r; i++)
    {
      for (int j=0; j<c; j++)
      {
        mat1[i][j]=input.next Int ();
      }
}
for (int i=0; i<r; i++)
{
    for (int j=0; j<c; j++)
    {
      mat 2[i][j] =input.nextInt();
    }
}
int sum[][]=new int[r][c];
for (int i=0; i<r; i++)
{
   for (int j=0; j<c; j++)
   {
     sum[i][j]=0;
     for (int k=0; k<c; k++)
     {
     sum [i][j] = sum[i][j] + mat [i][k] * mat 2[k][j];
     }
    System.out.Print (sum[i][j] + "\t");
  }
  System.out. Println();
}
```

4. Write a Program to Print inverted pyramid pattern.

```
import Java Util.Scanner();
class main{
    Public Static void main (string[],args);
    Scanner input= new Scanner (system.in);
    int n=input.nextInt();
    for(int i=n; i>=1; i--)
  {
      for (int j=0; j<n-i; j++)
      {
        system.out Print(" ");
      }
      for (int k=1; k<=i; k++)
      {
        system.out. print("*");
      }
      system.out. Println();
  }
```

5. Write a Program to count all the Prime and composite number number entered by the user.

```
Import Java Util.scanner();
class main{
    Public Static void main(string[],args);
    Scanner input=new Scanner(system.in);
    int arr[]={4,54,29,71,7,59,98,23};
    int com=0,pri=0;
    for(int i=0;i<arr.length; i++)
  {
      int c=0;
      for(int j=1;j<arr[i]; j++)
      {  if(arr[i]%j==0)
          c++;
      }
```

```
if (c>1)
    com++;
else;
    Pri++;
}
system.out.print("composite number; "+com);
System.out.Print("\nPrime number: "+Pri);
```

6. Find the Mth maximum number and Nth minimum number in an array and then find the sum of it and difference of it.

```
Improt Java.Util.Scanner();
class round
  Public class static void main(String[], args)
Scanner Input=new Scanner (System.in);
Int arr[]={14,16,87,36,25,89,34};
Int len=arr.length;
  for (Int i=0;i<len;i++){
     for (Int j=i+1;j<len;j++){
        If (arr[i]>arr[j]) {
           Int temp = arr[i];
           arr[i] = arr[j];
           arr[j]=temp;
        }
  }}
Int m=1,n=3;
Int max=arr[len-m];
Int min=arr[n-1];
System.out.print("m^th maximum number = "+max);
System.out.Print("\n"+n+"th minimum number = "+min);
Int sum=max+min;
Int Diff=max-min;
System.out.Print("\nSum = "+sum);
System.out.Print("\nDifference = "+Diff);
```

7. Write a Program to Print the Total the amount availble in the ATM machine with the conditions applied.

```
Import Java Util.Scanner();
Class main{
  Public Static void main (String[] arg)
Scanner Input=new Scanner (System.in);
Int n1=500, d1=4, n2=100, d2=20, n3=200, d3=32, n4=2000
Int Totd=(n1*d1)+(n2*d2)+(n3*d3)+(n4*d4);
System.out.Print("Total Available Balance in ATM"+
```

8. Write a Program using Choice to Check.

```
Import Java Util.Scanner();
class main{
  Public Static void main (String[], args);
Scanner Input=new Scanner (System.in);
String S1="MADAM";
String S2="";
Int len=S1.length();
for (int i=len-1; i>=0; i--)
{
   S2=S2+S1.charAt(i);
}
If (S1.equals(S2))
    system.out.Print ("Palindrome");
else
   system.out.Print ("Not Palindrome");
```

7. Write a program to convert Decimal number equivalent to Binary number and octal numbers?

```
Import Java.Util.Scanner();
class main{
  Public static void main (String[], args)
Scanner Input = new Scanner (System.In);
Int dec=15;
String bin=Integer.toBinaryString(dec);
String oct=Integer.toOctalString(dec);
System.out.PrintIn ("Binary Number ="+bin);
System.out.Print ("Octal Number "+oct);
```

10 In an organization they decide to give bonus to all the employee on New year. A 5% bonus on salary is given to the grade A workers and 100% bonus on salary to the grade B workers. Write a Program to enter the salary and grade of the employee. If the salary of the employee is less than 10,000 then the employee gets an extra 2% bonus on salary calculate the bonus that has to be given to the employee and print the salary that the employee will get.

```
Import Java.Util.Scanner();
class main{
  Public static void main (String[], args);
Scanner Input = new Scanner (System.in);
Int a,b;
double bonus=0;
System.out.Print ("Enter the grade of the employee:");
char a1=input.next().charAt(0);
System.out.print ("Enter the salary of employee:");
Int b1=input.nextInt();
If (a1=='A')
```

```
{
  bonus = bl * (0.05);
  if (bl < 10000)
  {
    bonus = bonus + bl * (0.02);
  }
  System.out.println("Salary =" + bl);
  System.out.println("bonus=" + bonus);
  System.out.println("total to be paid =" + (bl + bonus));
}
else if (a1 == 'B')
{
  bonus = bl * (0.1);
  if (bl < 10000)
  {
    bonus = bonus + bl * (0.02);
  }
  System.out.println("Salary=" + bl);
  System.out.println("bonus=" + bonus);
  System.out.println("total to be paid =" + (bl + bonus));
}
else
  System.out.print("Enter valid grade");
}
```