JAVA Assignment-2.

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11. Write a program for matrix addition?

```
Public class Matrix {
  Public Static Void Main (String [] args)
{
  Scanner input = new Scanner (System.in);
  int mat1[][] = {{1,2},{5,3}};
  int mat2[][] = {{2,3},{4,1}};
  int mat_Sum[][] = new int[2][2];
  int len = mat1.length;
  for (int i=0, i<len ; i++)
  {
    for(int j=0 ; j<len; j++)
    {
      mat_Sum{i}[j] = mat1 [i] [j]+ mat 2 [i] [j];
      System.out.print(mat_Sum [i] [j]+"\t");
    }
  System.out.println();
}.
```

13. Write a program that would sort a list of names in alphabetical order Ascending or Descending, choice get from the user?

```
Public class Sort{
  Public Static void main (String Args[])
{
 Scanner input = new Scanner (System.in);
 String arr[]= {"Banana", "Apple", "carrot", "Radish",
                "Jack");
 int num = arr.length;
 Char order = input.next().charAt(0);
 if (order == 'A') {
    for (int i = 0; i < len; i++) {
       for (int j = i+1; j < arr.length; j++) {
          if (arr[i].compareTo(arr[j]) > 0) {
             String temp = arr[i];
             arr[i] = arr[j];
             arr[j] = temp;
          }
       }
    }
       System.out.println(Arrays.toString(arr));
    }.
else if (order == 'D') {
  for (int i=0; i< len; i++) {
    for (int j= i+1; j< arr.length; j++){
      if (arr[i].compareTO(arr[j])<0) {
         String temp = arr[i];
         arr[i] = arr[j];
         arr[j] = temp;
      }
    }
  }
  System.out.println(Arrays.toString(arr));
```

14. Write a program for matrix multiplication?

```
Public class Matrix {
  Public void main (String args []){
{
  Scanner input = new Scanner (System.in);
  int r = input.nextInt();
  int c = input.next.Int();
  int mat 1[][] = new int [r][c];
  int mat 2 [][] = new int[r][c];

for (int i=0; i<r; i++)
{
    for (int j=0; j<c; j++)
    {
      mat 1 [i] [j] = input.nextInt();
    }
}
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 1 [i] [k] * mat 2 [k] [j]
      }
      System.out.print (sum[i][j] + "\t");
    }
    System.out.println();
}
```

15. Write a program for pattern

```
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1 1 1 1
1

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```

15. Write a program to print the following pattern

```
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!!
!
```

```
Public class pattern {
 Public void main (String args [] ) {
{
Scanner input = new Scanner (System.in);
System.out.print ("Enter the number to be printed: ");
int x = input.nextInt();
System.out.print ("Max Number of time printed: ");
int n = input.nextInt();
for (int i =1 ; i <=n; i ++)
{
    for (int j=1; j<=i ; j++)
    {
        System.out.print(x);
    }
    System.out.println();
}
for (int i =n-1; i >=1; i--)
{
    for (int j=1; j<=i ; j++)
    {
        System.out.print(x);
    }
    System.out.println();
 }
```

16. Write
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```
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```

16. Write a program to print the Special Characters Separately and print number of Special Characters in the line?

```
Public class Characters {
   Public Void Main (String args []) {
{
Scanner input = new Scanner (System.in);
String s = input.nextLine ();
int len = s.length ();
Char a [] = new char [len];
Int sp = 0;
for (int i=0; i<len; i++)
{
    a [i] = s.CharAt (i);
    if (a [i] >= 65 && a [i] <= 90 || a [i] >= 97 && a [i] <= 122
        || a [i] >= 48 && a [i] <= 57)
  {
  }
  else
  {
    sp++;
    System.out.print (a [i]);
  }
}
System.out.println ("\n" + sp);
```

17. Write a program to print
Numbers between a and b?

```
Public class Composite numbers{
  Public void main (String args [] ){
{
Scanner input = new Scanner (System.in);
int a = input.nextInt();
int b = input.nextInt();
for (int i=a+1; i<=b; i++)
{
    int c=0;
    for (int j=1; j<=b; j++)
    {
      if (i% j==0)
          c++;
    }
    if (c>2)
       System.out.print (i+" ");
}
```

18. Write a program to print the Inverted Full Pyramid Pattern?

```
Public class Pyramid{
  Public Valid 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();
  }
```

19. Find the Mean, Median, Mode of the array of numbers?

```
Public class Mean{
  Public Valid main (String args[]){
{
Scanner input = new Scanner (System.in);
int a[]={16,18,27,16,23,21,19};
int len = a.length;
int sum =0;
for (int i =0; i<len; i++)
{
  sum =sum+a[i];
}
int mean =sum/len;
System.out.println("mean:"+mean);
```

```
for(int i=0; i<len; i++)
{
    for(int j=i+1; j<len; j++)
    {
        if(a[i]>a[j])
        {
            int temp=a[i];
            a[i]=a[j];
            a[j]=temp;
        }
    }
}

for(int i=0; i<len; i++)
{
    if(len%2==0)
    {
        int mid=len/2;
        System.out.print("median: "+a[mid-1]);
        break;
    }
    else
    {
        int mid=(len+1)/2;
        System.out.print(mid);
        System.out.println("median:"+a[mid-1]);
        break;
    }
}
for(int i=0; i<len; i++)
{
    for(int j=i+1; j<len; j++)
    {
        if(a[i]==a[j])
        {
            System.out.println("mode: "+a[i]);
            break;
        }
    }
}
```

20. Find

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```

20. Find the factorial of n?

```
Public class Factorial {
  Public Void main (String args [] ) {
{
Scanner input = new Scanner (System.in);
  int n = input.nextInt();
  int fact = 1;
  for (int i=1; i<=n; i++)
  {
     fact = fact * i;
  }
  System.out.print(fact);
}.
```