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11. matrix addition

```
import java.util.Scanner;
class Matrixaddition
{
public static void main (String[]args){

        Scanner input = new
        Scanner (System.in);

int matrix[][]={{1, 2},{3,5}};
int mat2[][]={{2,5},{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] mat2[i][j];
   System.out.Println(mat_sum[i][j]+"\t");
}
   System.out.println();

}
}
```

12. Sort a list of name:

```
import java.util.Scanner;

class name {
public static void main (String[]args){
Scanner input=new Scanner(System.in)
String arr[]={"banana","apple","carrot","radish","jack");
int len = 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 matrix multiplication

```
class matrix multiplication{
Public static void main(String[]args)
{
int[][]mat1 = {{1,2},{5,3}};
int[][] mat2 = {{2,3},{4,1}};
int[][] ~~mat3~~ result =new int[2][2];
for(int i=0; i<2 ; i++){
  for(int j=0; j<2 ;j++){
    for(int k=0; k<2 ; k++){
    result[i][j] += mat1[i][k]*mat2[k][j]; }}}
```

```
System.out.Print ("Mat sum = ");
for(int i=0; i<2; i++){
   for(int j=0 ; j<2;j++){
   System.out.Print(result[i][j]+"  ");
}
 system.out.println();
}}}
```

Output: Mat sum = 1005
2218

15. Print the following pattern

```
import java.util.Scanner;
Public class PatternPrinter{
   Public static void main (String[]args){
     Scanner input = new Scanner (system.in);
     Scanner.out.Print ("Enter the number to be Printed : ");
     int x = input.nextInt();
     system.out.Print("Max number of times Printed:");
     int n = input.nextInt();
     for(int i=1; i<=2*n-1; i++){
       int count = i<n ? i : 2*n-i
       System.out.Print(String.valueof(x).repeat(count));
     }
     input.close()
  }
}
```

input : 1
:3

ouput

16. Print special characters separately and Print number of special characeters in the line?

```
Import java.util.scanner;
Public class specialcharactercounter{
  Public static void main (String[]args){
   scanner input=new scanner(system.in);
   scanner.out.Println("Enter a line of text:");
   string =input.nextline();
   int sp=0;
   system.out.Print("special characters");
   for (char ch: s.tocharArray()){
     if(!character.isletterordigit(ch)){
       sp++;
       system.out.Print(ch);
     }
   }
   system.out.Print("\n Number of special characters:"+sp);
}
}
```

output
linebfte: hello
Characters #*
Spical: 2

17 Composite number between a and b

```
import java.util.Scanner;
Public class compositeNumbers{
Public static 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++){
      if(isComposite(i)){
        system.out.print(i+" ");
}
}
 }
Public static boolean isComposite(int num){
    if(num<4) return false;
    for(int i=2; i<=Math.sqrt(num); i++){
    if(num%i==0) return true;
    }
    return false;
 }
}
```

input: 12 19

output: 14 15 16 18

18. Program to print the inverted full Pyramid Pattern?

```
import java.util.Scanner;
Public class inverted Pyramid {
  Public static void main (string[] args){
     int n= new Scanner (system.in).nextInt();
     for (int i=n; i>=1; i--){
        System.out.Print(" ".repeat(n-i));
        System.out.Print("* ".repeat(i));
  }
  }
}
```

input:5

Output:

```
* * * * *
 * * * *
  * * *
   * *
    *
```

Find the factorial of n?

```
import java.util.Scanner;
Public class factorial{
   Public static void main (string[] args ){
    Scanner .input =new Scanner(system.in);
    int n = input.nextInt();
    int fact = 1;
    for (int i=1; i<=n; fact*= i++);
    system.out.Print (n + "factorial = "+fact);
  }
}
```

input: 4
output: 4 factorial = 24