11. Matrix Addition

26/7/24

```
public class Addition {
    public static void main(String[] args) {
        int mat1[][] = {{1,2},{3,4}};
        int mat2[][] = {{5,6},{7,8}};
        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.print(mat3[i][j] + " ");
            }
        }
    }
}
```

12. Alphabet sorting

```
public class Alphabet {
    public static void main(String[] args){
        Scanner input = new Scanner(System.in);
        String arr[] = {"Banana", "Apple", "Carrot", "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<len; j++){
                    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));
}
```

13. Matrix Multiplication

```
public class Mul {
    public static void main(String[] args) {
        int mat1[][] = {{1,2}, {3,4}};
        int mat2[][] = {{5,6}, {7,8}};
        int mat3[][] = new int[2][2];
        int len = mat1.length;
        for(int i=0; i<len; i++) {
            for(int j=0; j<len; j++) {
                sum mat[i][j] = 0;
                for(int k=0; k<len; k++) {
                    mat3[i][j] = mat2[i][j] + mat1[i][k] *
                                 mat2[k][j];
                }
            }
        }
        System.out.println(mat3);
    }
}
```

14. public class pattern{

```
public static void main(String[] args){
    int x = 1
    int n = 3
    for(int i=1 ; i<=n ; i++){
        for(int j=1 ; j<=i ; j++){
            System.out.print(x);
        }
        System.out.println();
    }
    for ( int j=1 ; j<=n ; j++){
        for(int j=1 ; j<=i ; j++){
            System.out.print(x);
        }
        System.out.println();
    }
}
}
```

15 Special characters

```
pubic class Special{
    pubic static 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]>=95 &&
                a[i]<=122||
                a[i]>=48 && a[i]<=57)
{
}
```

```
        else {
            sp++;
            System.out.print(a[i]);
        }
    }
    System.out.println("\n"+sp);
  }
}
```

16. Composite Numbers

```
public class Composite {
    pubic static void main (String[], args) {
        int a=12, b=19;
        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+" ");
            }
        }
    }
}
```

17 Inverted pyramid

```
public class pyramid {
    public static void main(String[] args) {
        int n=5;
        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( " a " ) ;
            }
            System.out.println( ) ;
        }
    }
}
```

18 Mean, median, mode

```
public class statistics {
    pubic static void main (String[] args) {
        int a[] = {16, 18, 27, 16, 23, 21, 19} ;
        int len = a.length, 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 (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
        }
    }
}
}
}
```

19 Factorial

```
pubic class Factoria{
    public static void main{
        int n = 5;
        int fact=1;
        for (int i=1 ; i<=n; i++){
            fact = fact* i ;
        }
        System.out.print(fact);
    }
}
```