Assignment - 6

S. Aswinn suriya
192524017
CSA0993

1. matrix addition

```
import java.util.scanner;
class Matrixaddition
class Hello world{
Public static void main (string[]args){
        scanner input = new
        scanner (system.in);
int matrix[][]={{1, 2},{5,3}};
int mate[][]={{2,3},{4,1}};
int mat_sum[][]= new int[2][2];
int len=mat.length;
for(int i=0;i<len;i++)
{
  for(int j=0;j<len;j++)
{
   mat_sum[i][j] = matrix[i][j]+mat2[i][j];
   System.out.Println(mat sum[i][j]+"\t");
 }
   sy stem.out.println();
}
}
```

2. 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));
}
}
```

(12) 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 j=0; i<2; i++){
  for(int j=0; j<2; j++){
    for(int k=0; j<2; k++){
    result[i][j] += mat1[i][x]*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

(5.) 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

output
1
11
111

(5) Print special characters separately and print number of special characters 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

linetext: hello

Character #*

Special: 2

(15) Program to print the inverted half Pyramid Pattern?

```
import java.util.Scanner;
Public class invertedPyramid {
  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));
    }
  }
}
```

Output

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

Input:5

(16) 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

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