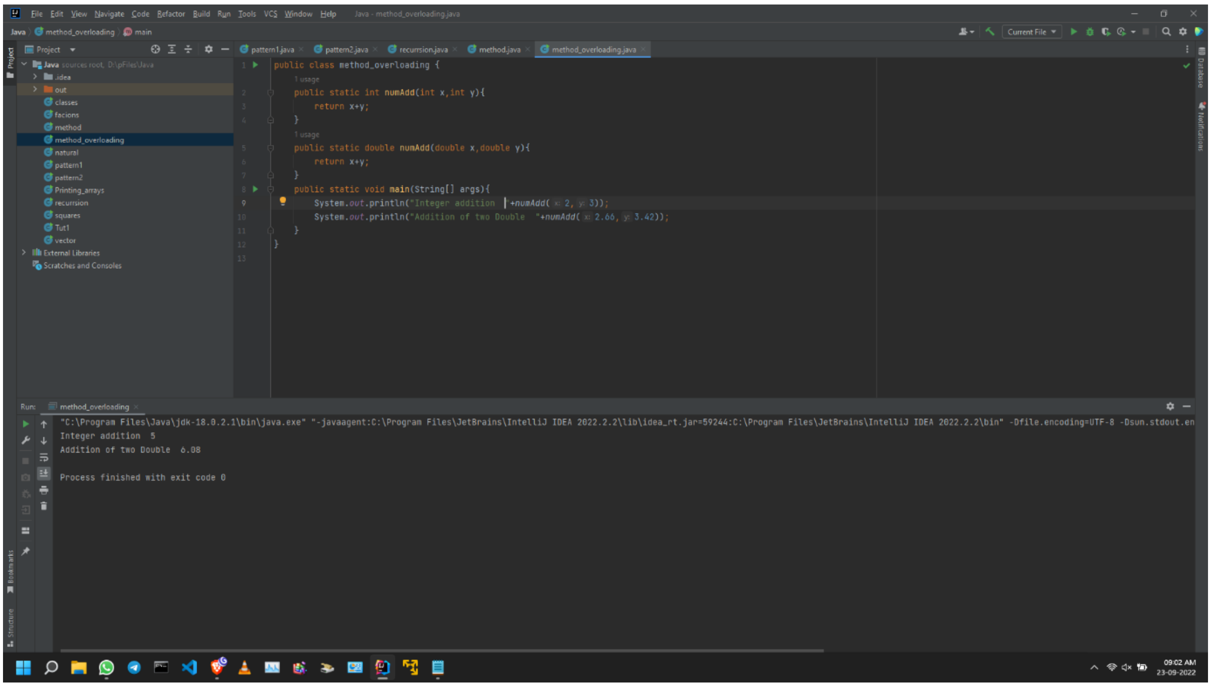
Methods and Pattern Printing

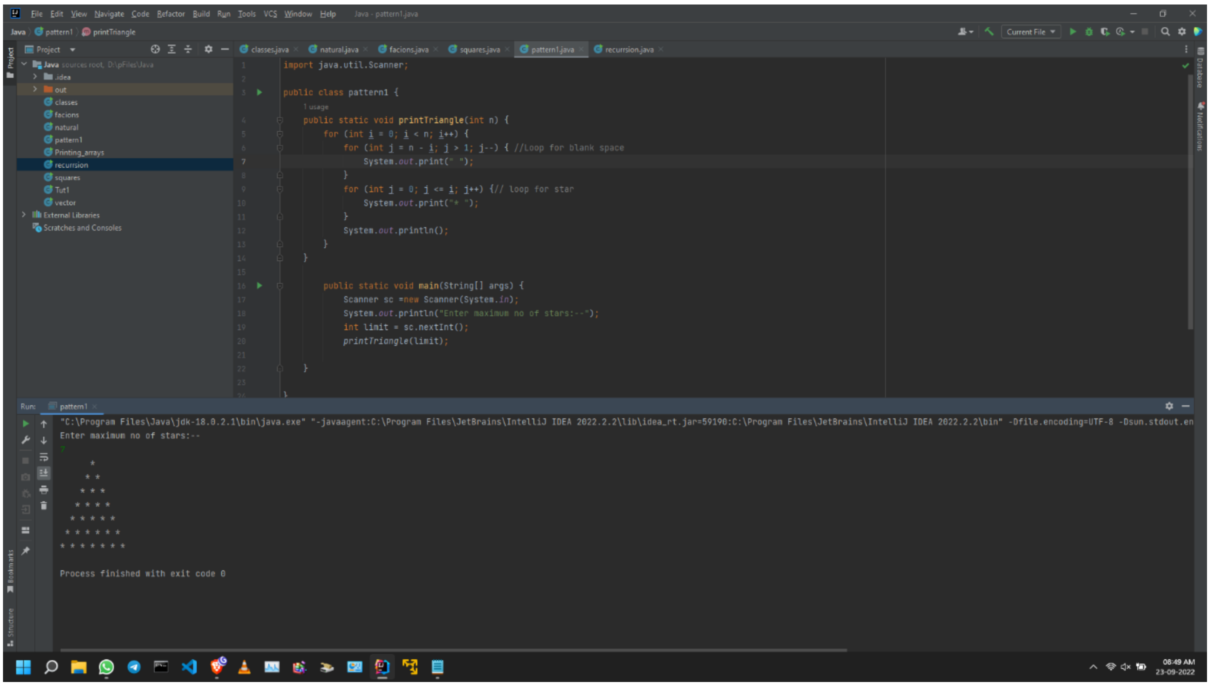
1. Programs on Basic Method calling, Passing Different Parameters, Method Overloading



```java
public class method_overloading {
    public static int numAdd(int x,int y){
        return x+y;
    }
    public static double numAdd(double x,double y){
        return x+y;
    }
    public static void main(String[] args){
        System.out.println("Integer addition  "+numAdd(2, 3));
        System.out.println("Addition of two Double  "+numAdd(2.66, 3.42));
    }
}
```

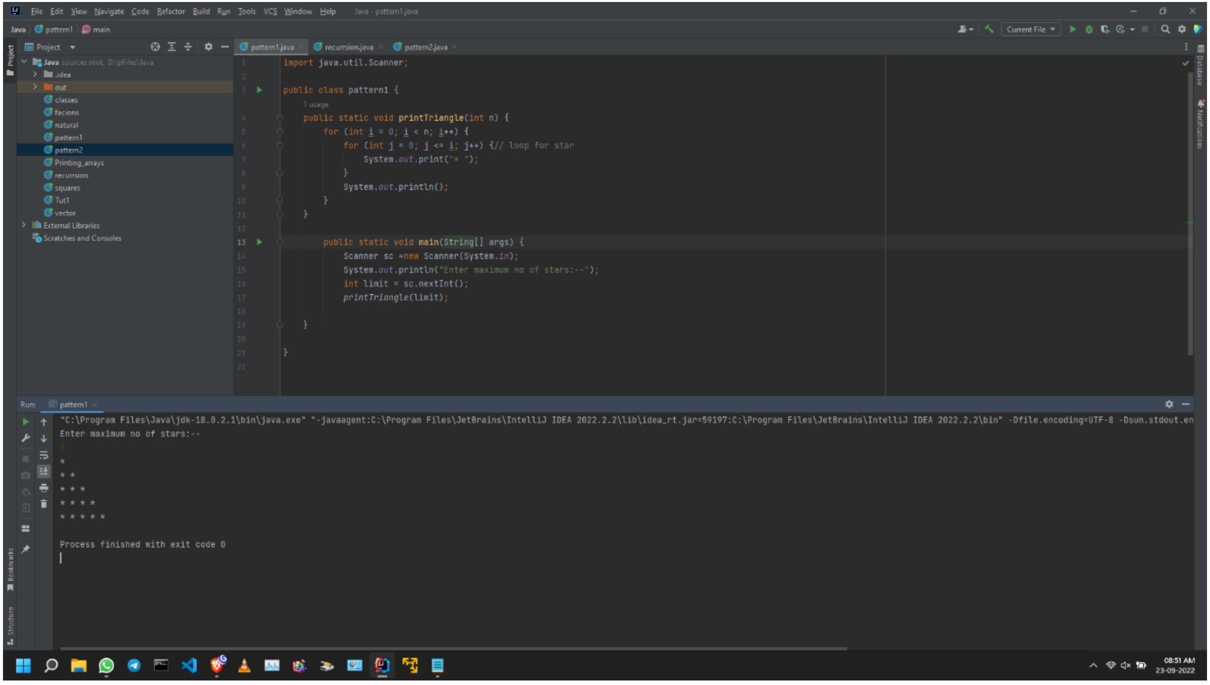
```
"C:\Program Files\Java\jdk-18.0.2.1\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA 2022.2.2\lib\idea_rt.jar=59244:C:\Program Files\JetBrains\IntelliJ IDEA 2022.2.2\bin" -Dfile.encoding=UTF-8 -Dsun.stdout.en
Integer addition  5
Addition of two Double  6.08

Process finished with exit code 0
```

2. Programs to print 8 different patterns.



```java
import java.util.Scanner;

public class pattern1 {
    1 usage
    public static void printTriangle(int n) {
        for (int i = 0; i < n; i++) {
            for (int j = n - i; j > 1; j--) { //Loop for blank space
                System.out.print(" ");
            }
            for (int j = 0; j <= i; j++) {// loop for star
                System.out.print("* ");
            }
            System.out.println();
        }
    }

        public static void main(String[] args) {
            Scanner sc =new Scanner(System.in);
            System.out.println("Enter maximum no of stars:--");
            int limit = sc.nextInt();
            printTriangle(limit);

    }

}
```

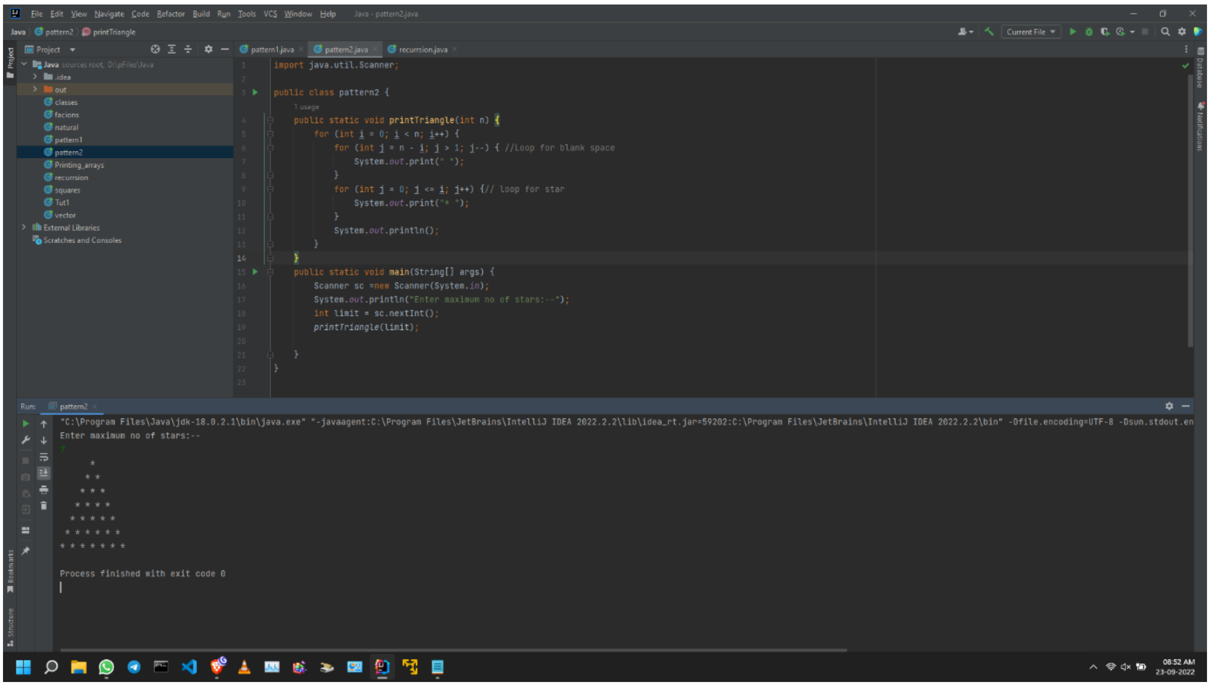
```
"C:\Program Files\Java\jdk-18.0.2.1\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA 2022.2.2\lib\idea_rt.jar=59190:C:\Program Files\JetBrains\IntelliJ IDEA 2022.2.2\bin" -Dfile.encoding=UTF-8 -Dsun.stdout.en
Enter maximum no of stars:--
7
      * 
     * * 
    * * * 
   * * * * 
  * * * * * 
 * * * * * * 
* * * * * * * 

Process finished with exit code 0
```



```java
import java.util.Scanner;

public class pattern1 {
    1 usage
    public static void printTriangle(int n) {
        for (int i = 0; i < n; i++) {
            for (int j = 0; j <= i; j++) {// loop for star
                System.out.print("* ");
            }
            System.out.println();
        }
    }

        public static void main(String[] args) {
            Scanner sc =new Scanner(System.in);
            System.out.println("Enter maximum no of stars:--");
            int limit = sc.nextInt();
            printTriangle(limit);

    }

}
```

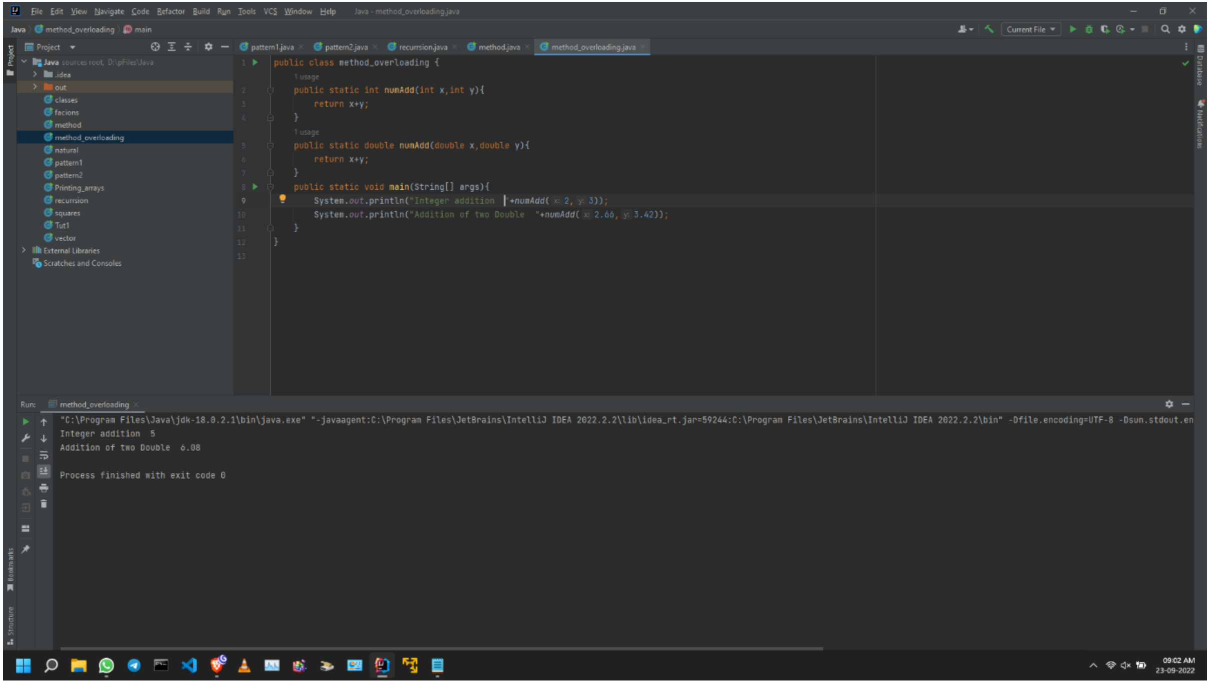
```
"C:\Program Files\Java\jdk-18.0.2.1\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA 2022.2.2\lib\idea_rt.jar=59197:C:\Program Files\JetBrains\IntelliJ IDEA 2022.2.2\bin" -Dfile.encoding=UTF-8 -Dsun.stdout.en
Enter maximum no of stars:--
5
* 
* * 
* * * 
* * * * 
* * * * * 

Process finished with exit code 0
```

PONNURI ANIRUDDHA
RA2112704010015



```java
import java.util.Scanner;

public class pattern2 {
    public static void printTriangle(int n) {
        for (int i = 0; i < n; i++) {
            for (int j = n - i; j > 1; j--) { //Loop for blank space
                System.out.print(" ");
            }
            for (int j = 0; j <= i; j++) {// loop for star
                System.out.print("* ");
            }
            System.out.println();
        }
    }
    public static void main(String[] args) {
        Scanner sc =new Scanner(System.in);
        System.out.println("Enter maximum no of stars:--");
        int limit = sc.nextInt();
        printTriangle(limit);

    }
}
```

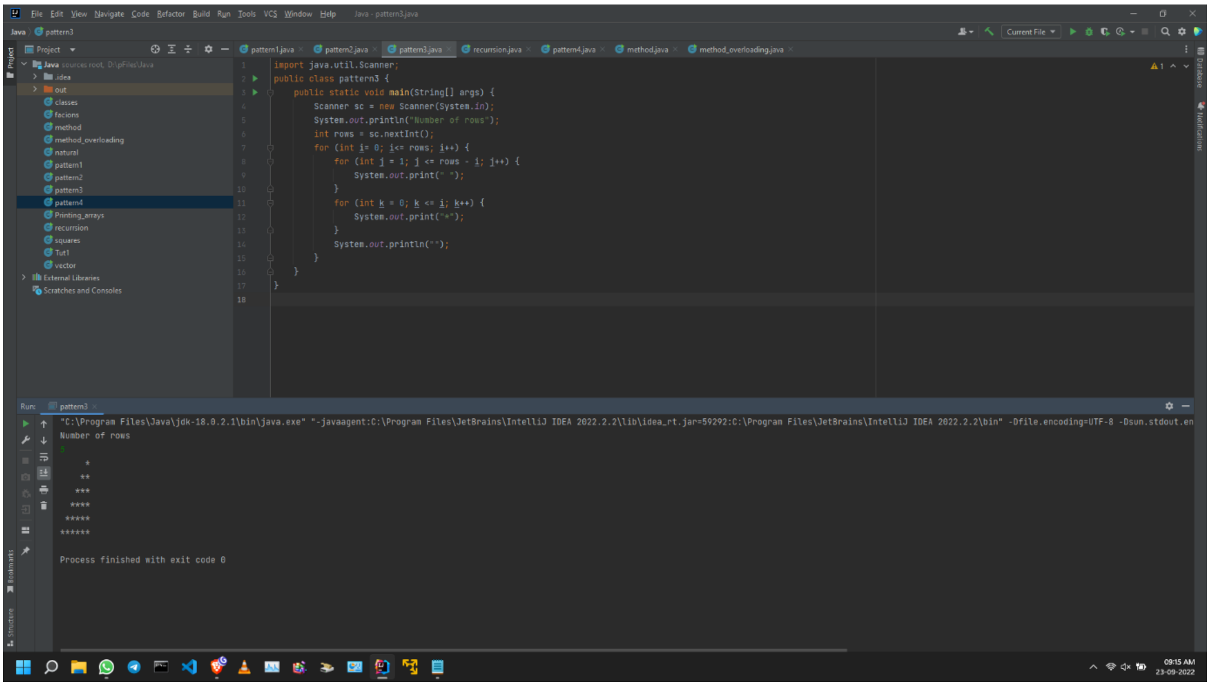
```
"C:\Program Files\Java\jdk-18.0.2.1\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA 2022.2.2\lib\idea_rt.jar=59202:C:\Program Files\JetBrains\IntelliJ IDEA 2022.2.2\bin" -Dfile.encoding=UTF-8 -Dsun.stdout.en
Enter maximum no of stars:--
7
      * 
     * * 
    * * * 
   * * * * 
  * * * * * 
 * * * * * * 
* * * * * * * 

Process finished with exit code 0
```



```java
public class method_overloading {
    public static int numAdd(int x,int y){
        return x+y;
    }
    public static double numAdd(double x,double y){
        return x+y;
    }
    public static void main(String[] args){
        System.out.println("Integer addition  "+numAdd(2, 3));
        System.out.println("Addition of two Double  "+numAdd(2.66, 3.42));
    }
}
```

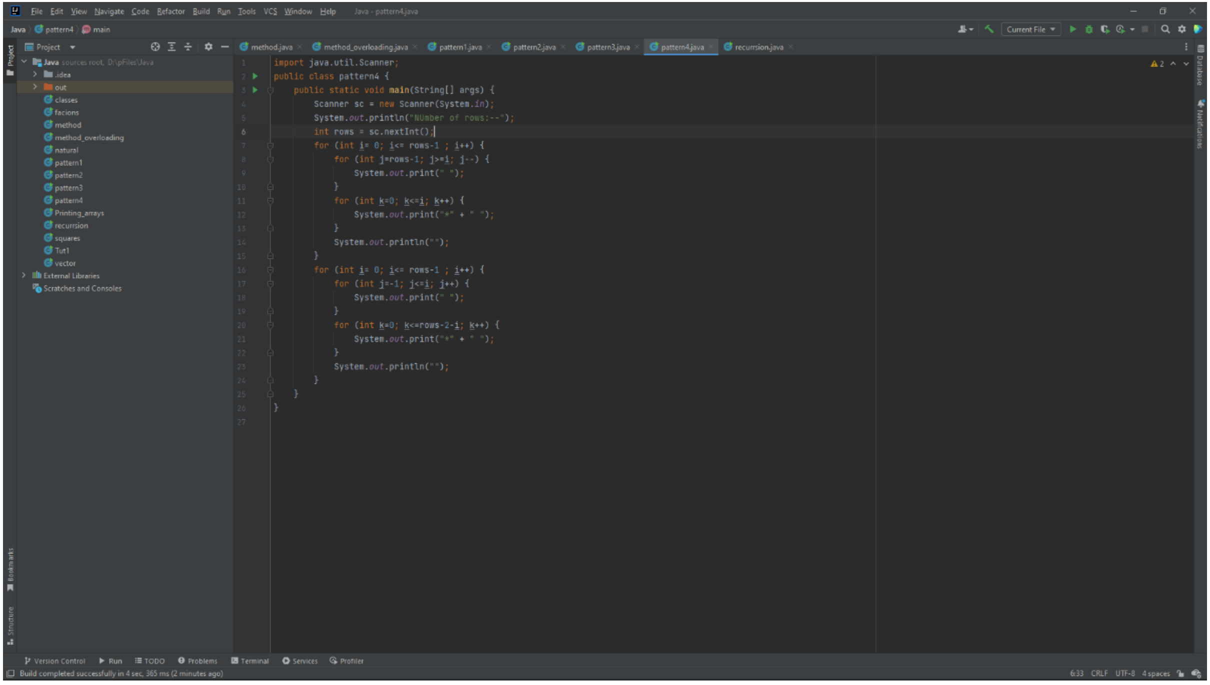
```
"C:\Program Files\Java\jdk-18.0.2.1\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA 2022.2.2\lib\idea_rt.jar=59244:C:\Program Files\JetBrains\IntelliJ IDEA 2022.2.2\bin" -Dfile.encoding=UTF-8 -Dsun.stdout.en
Integer addition  5
Addition of two Double  6.08

Process finished with exit code 0
```

PONNURI ANIRUDDHA
RA2112704010015



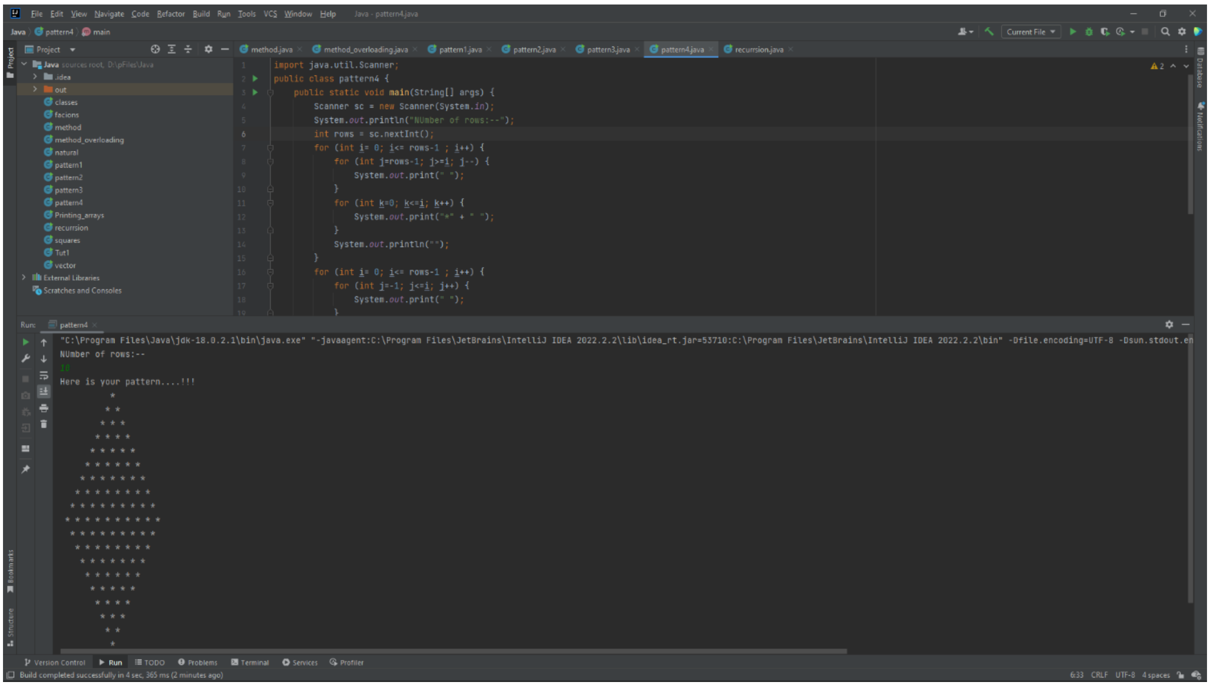
```java
import java.util.Scanner;
public class pattern3 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Number of rows");
        int rows = sc.nextInt();
        for (int i= 0; i<= rows; i++) {
            for (int j = 1; j <= rows - i; j++) {
                System.out.print(" ");
            }
            for (int k = 0; k <= i; k++) {
                System.out.print("*");
            }
            System.out.println("");
        }
    }
}
```

```
"C:\Program Files\Java\jdk-18.0.2.1\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA 2022.2.2\lib\idea_rt.jar=59292:C:\Program Files\JetBrains\IntelliJ IDEA 2022.2.2\bin" -Dfile.encoding=UTF-8 -Dsun.stdout.en
Number of rows
5
     *
    **
   ***
  ****
 *****
******

Process finished with exit code 0
```



```java
import java.util.Scanner;
public class pattern4 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("NUmber of rows:--");
        int rows = sc.nextInt();
        for (int i= 0; i<= rows-1 ; i++) {
            for (int j=rows-1; j>=i; j--) {
                System.out.print(" ");
            }
            for (int k=0; k<=i; k++) {
                System.out.print("*" + " ");
            }
            System.out.println("");
        }
        for (int i= 0; i<= rows-1 ; i++) {
            for (int j=-1; j<=i; j++) {
                System.out.print(" ");
            }
            for (int k=0; k<=rows-2-i; k++) {
                System.out.print("*" + " ");
            }
            System.out.println("");
        }
    }
}
```

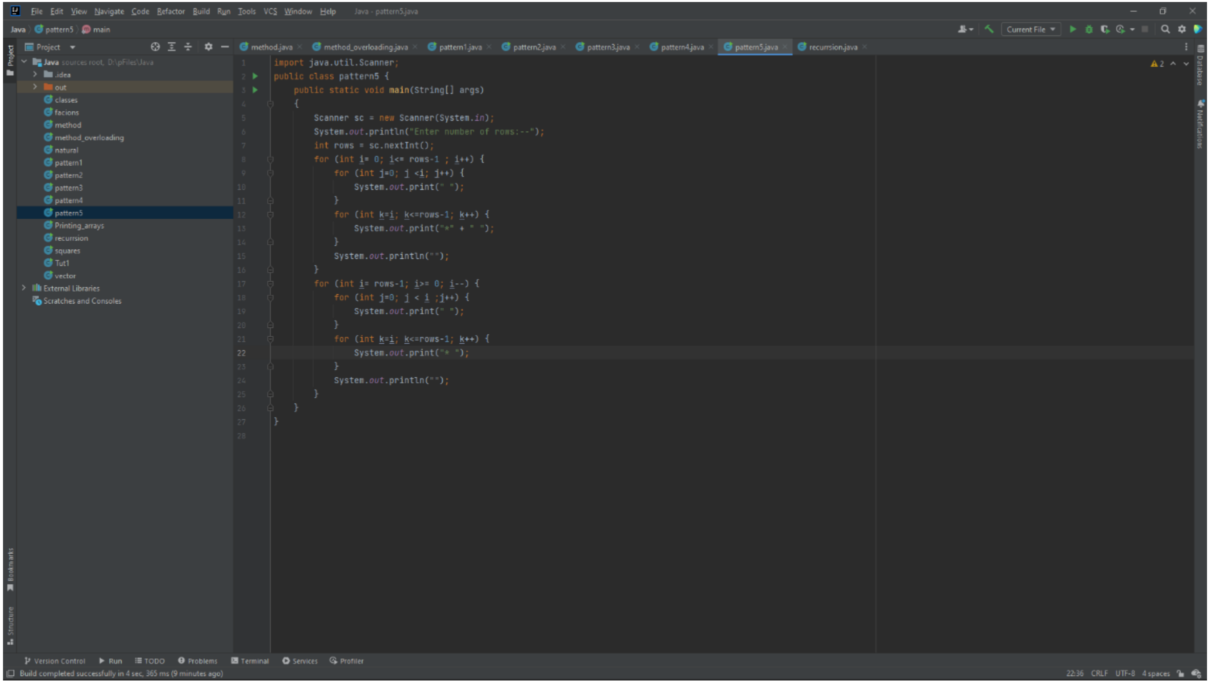
PONNURI ANIRUDDHA
RA2112704010015



```java
import java.util.Scanner;
public class pattern4 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("NUmber of rows:--");
        int rows = sc.nextInt();
        for (int i= 0; i<= rows-1 ; i++) {
            for (int j=rows-1; j>=i; j--) {
                System.out.print(" ");
            }
            for (int k=0; k<=i; k++) {
                System.out.print("*" + " ");
            }
            System.out.println("");
        }
        for (int i= 0; i<= rows-1 ; i++) {
            for (int j=-1; j<=i; j++) {
                System.out.print(" ");
            }
```

```
"C:\Program Files\Java\jdk-18.0.2.1\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA 2022.2.2\lib\idea_rt.jar=53710:C:\Program Files\JetBrains\IntelliJ IDEA 2022.2.2\bin" -Dfile.encoding=UTF-8 -Dsun.stdout.en
NUmber of rows:--
10
Here is your pattern....!!!
          * 
         * * 
        * * * 
       * * * * 
      * * * * * 
     * * * * * * 
    * * * * * * * 
   * * * * * * * * 
  * * * * * * * * * 
 * * * * * * * * * * 
  * * * * * * * * * 
   * * * * * * * * 
    * * * * * * * 
     * * * * * * 
      * * * * * 
       * * * * 
        * * * 
         * * 
          * 
```

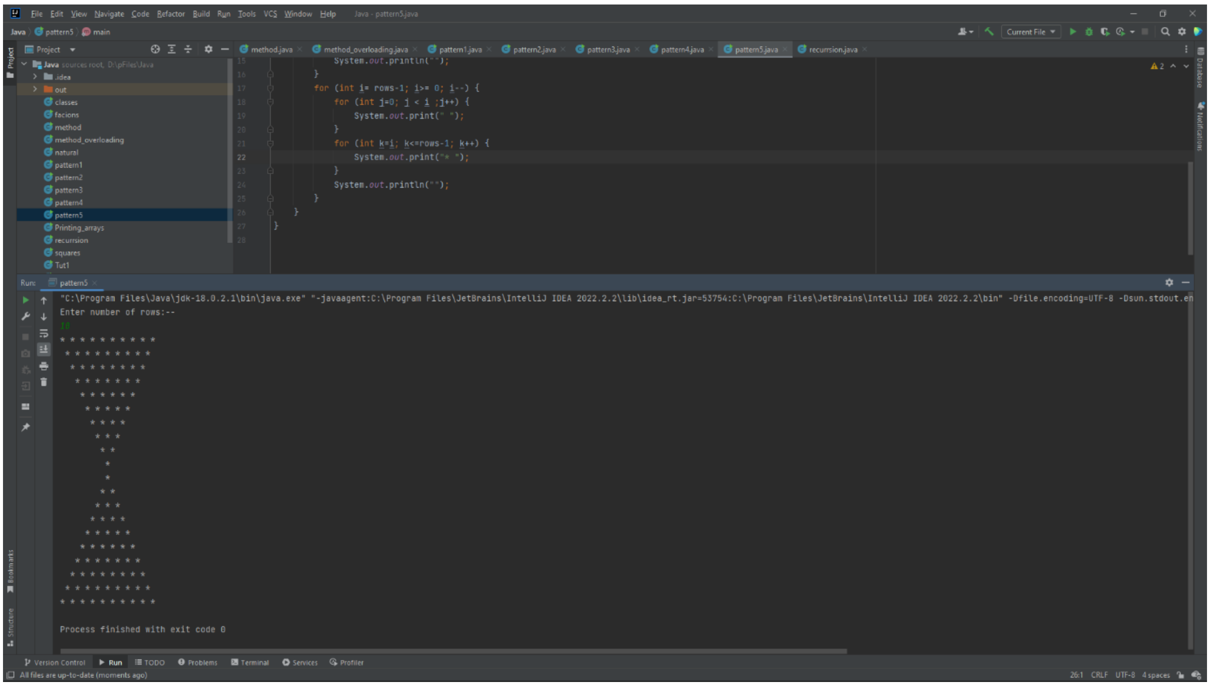
Build completed successfully in 4 sec, 365 ms (2 minutes ago)



```java
import java.util.Scanner;
public class pattern5 {
    public static void main(String[] args)
    {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter number of rows:--");
        int rows = sc.nextInt();
        for (int i= 0; i<= rows-1 ; i++) {
            for (int j=0; j <i; j++) {
                System.out.print(" ");
            }
            for (int k=i; k<=rows-1; k++) {
                System.out.print("*" + " ");
            }
            System.out.println("");
        }
        for (int i= rows-1; i>= 0; i--) {
            for (int j=0; j < i ;j++) {
                System.out.print(" ");
            }
            for (int k=i; k<=rows-1; k++) {
                System.out.print("* ");
            }
            System.out.println("");
        }
    }
}
```

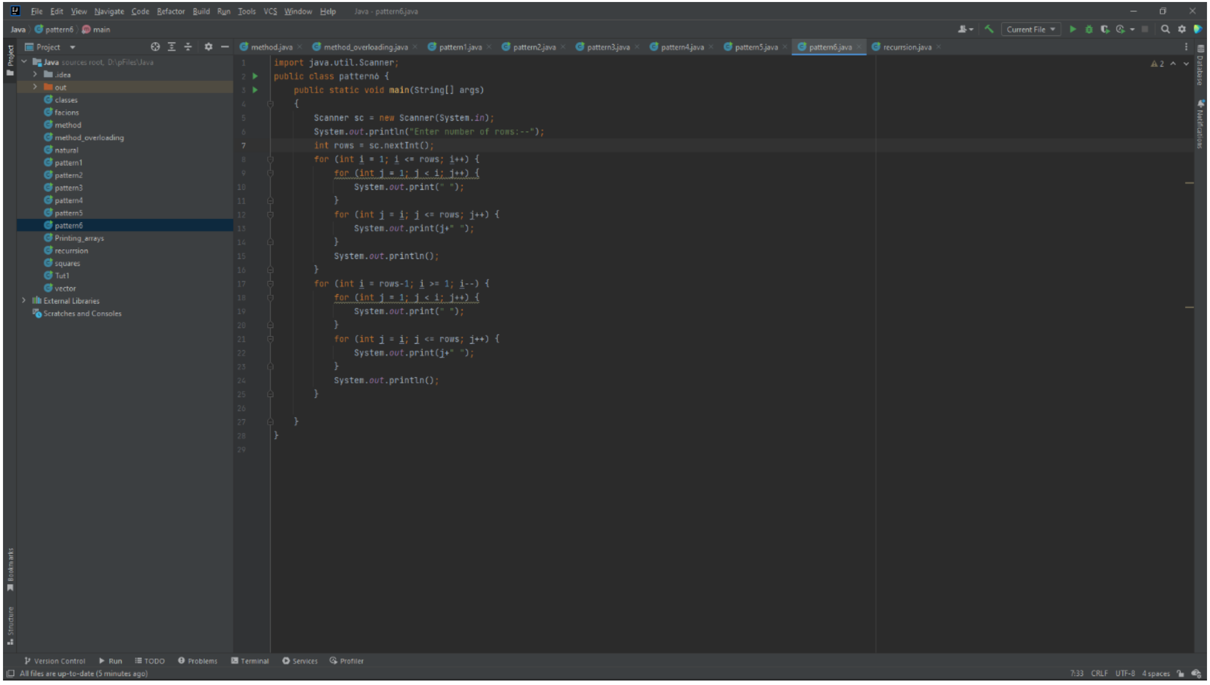
Build completed successfully in 4 sec, 365 ms (9 minutes ago)

PONNURI ANIRUDDHA
RA2112704010015



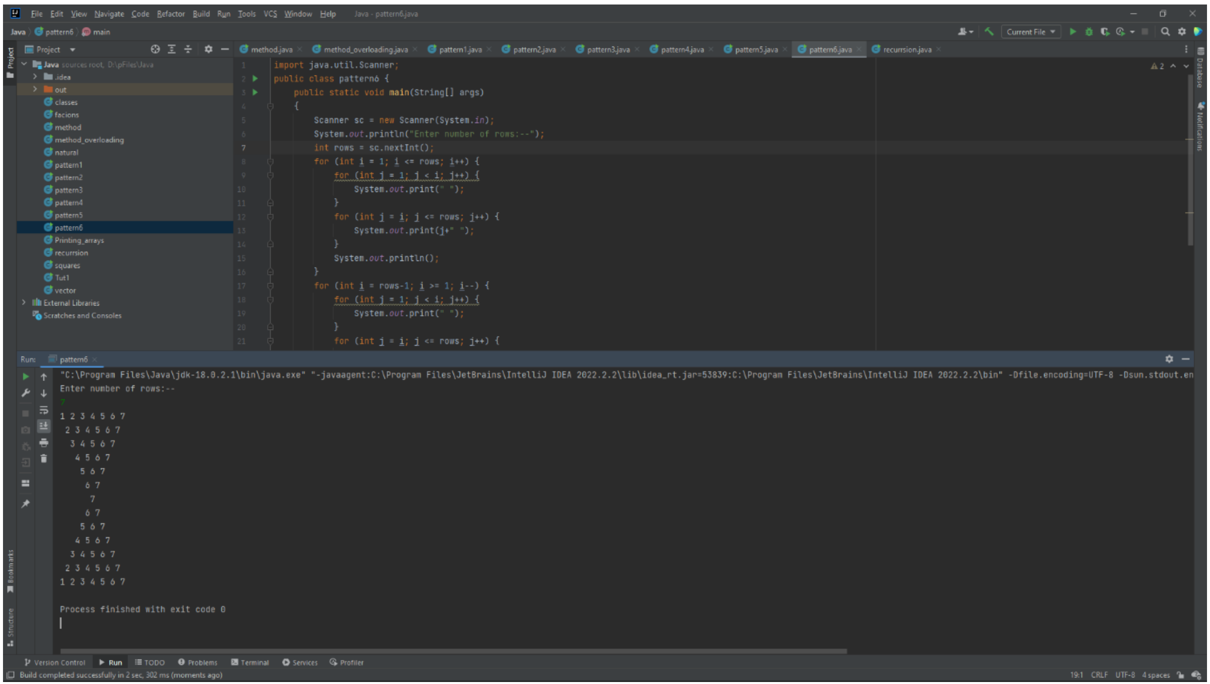
```java
            System.out.println("");
        }
        for (int i= rows-1; i>= 0; i--) {
            for (int j=0; j < i ;j++) {
                System.out.print(" ");
            }
            for (int k=i; k<=rows-1; k++) {
                System.out.print("* ");
            }
            System.out.println("");
        }
    }
}
```

```
"C:\Program Files\Java\jdk-18.0.2.1\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA 2022.2.2\lib\idea_rt.jar=53754:C:\Program Files\JetBrains\IntelliJ IDEA 2022.2.2\bin" -Dfile.encoding=UTF-8 -Dsun.stdout.en
Enter number of rows:--
10
* * * * * * * * * * 
 * * * * * * * * * 
  * * * * * * * * 
   * * * * * * * 
    * * * * * * 
     * * * * * 
      * * * * 
       * * * 
        * * 
         * 
         * 
        * * 
       * * * 
      * * * * 
     * * * * * 
    * * * * * * 
   * * * * * * * 
  * * * * * * * * 
 * * * * * * * * * 
* * * * * * * * * * 

Process finished with exit code 0
```



```java
import java.util.Scanner;
public class pattern6 {
    public static void main(String[] args)
    {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter number of rows:--");
        int rows = sc.nextInt();
        for (int i = 1; i <= rows; i++) {
            for (int j = 1; j < i; j++) {
                System.out.print(" ");
            }
            for (int j = i; j <= rows; j++) {
                System.out.print(j+" ");
            }
            System.out.println();
        }
        for (int i = rows-1; i >= 1; i--) {
            for (int j = 1; j < i; j++) {
                System.out.print(" ");
            }
            for (int j = i; j <= rows; j++) {
                System.out.print(j+" ");
            }
            System.out.println();
        }

    }
}
```

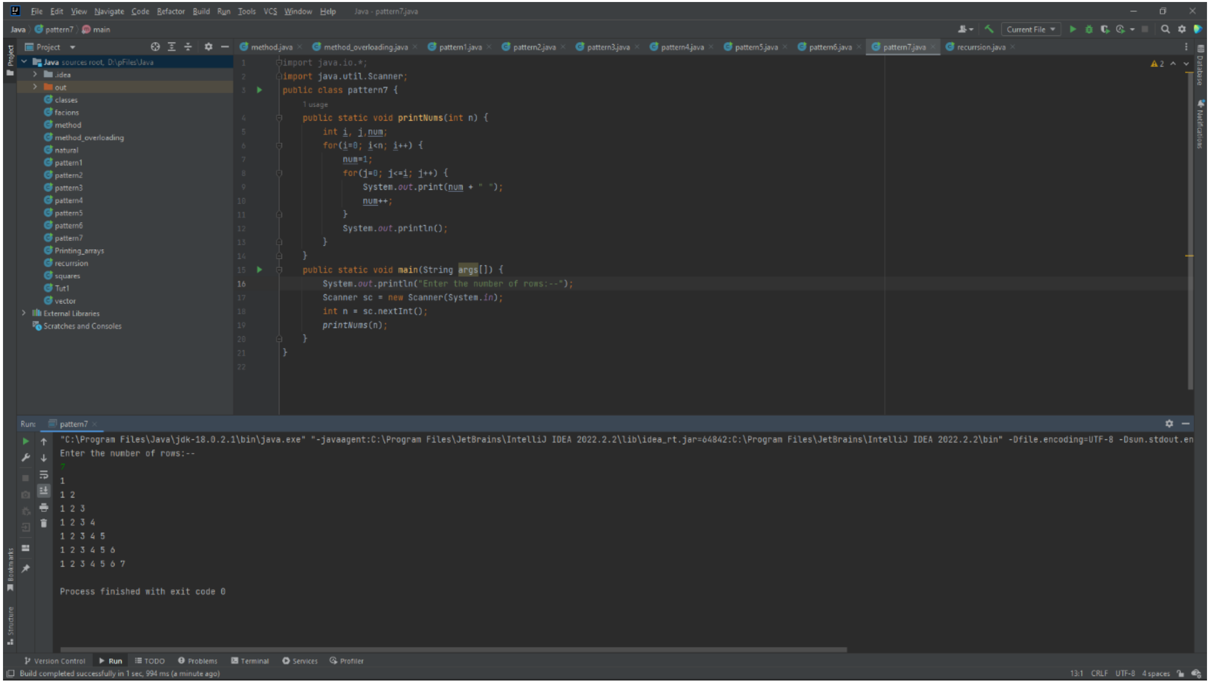
PONNURI ANIRUDDHA
RA2112704010015



```java
import java.util.Scanner;
public class pattern6 {
    public static void main(String[] args)
    {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter number of rows:--");
        int rows = sc.nextInt();
        for (int i = 1; i <= rows; i++) {
            for (int j = 1; j < i; j++) {
                System.out.print(" ");
            }
            for (int j = i; j <= rows; j++) {
                System.out.print(j+" ");
            }
            System.out.println();
        }
        for (int i = rows-1; i >= 1; i--) {
            for (int j = 1; j < i; j++) {
                System.out.print(" ");
            }
            for (int j = i; j <= rows; j++) {
```

```
"C:\Program Files\Java\jdk-18.0.2.1\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA 2022.2.2\lib\idea_rt.jar=53839:C:\Program Files\JetBrains\IntelliJ IDEA 2022.2.2\bin" -Dfile.encoding=UTF-8 -Dsun.stdout.en
Enter number of rows:--
7
1 2 3 4 5 6 7
 2 3 4 5 6 7
  3 4 5 6 7
   4 5 6 7
    5 6 7
     6 7
      7
     6 7
    5 6 7
   4 5 6 7
  3 4 5 6 7
 2 3 4 5 6 7
1 2 3 4 5 6 7

Process finished with exit code 0
```

Build completed successfully in 2 sec, 302 ms (moments ago)

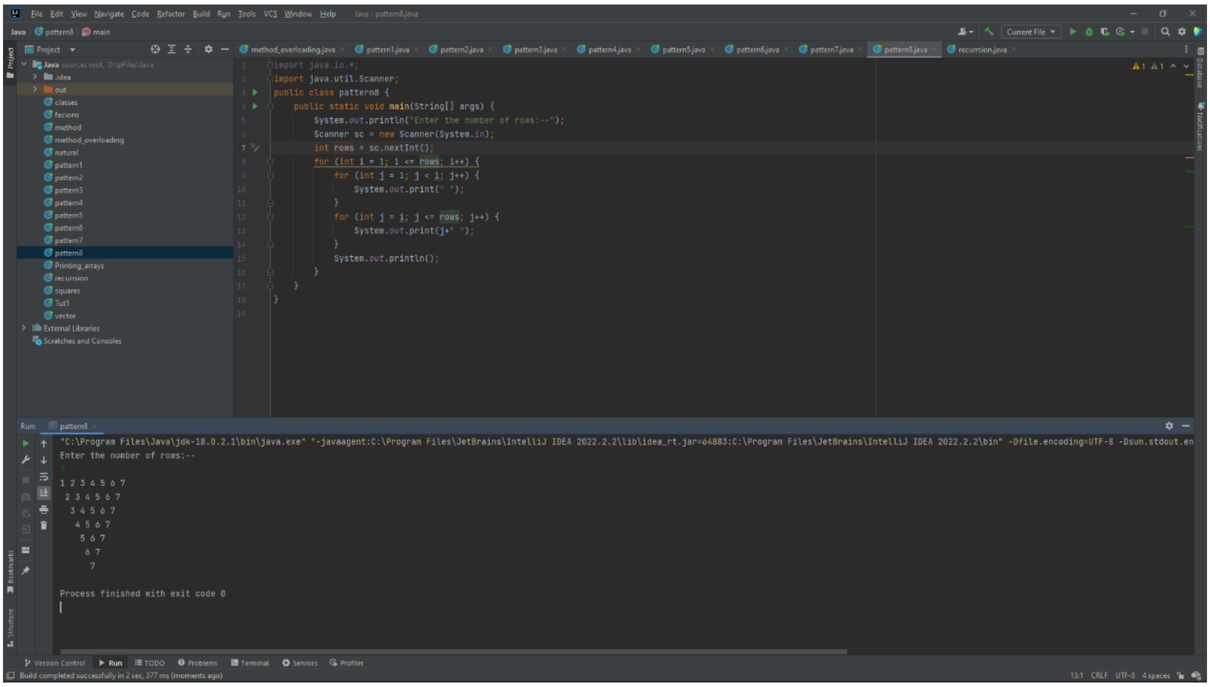


```java
import java.io.*;
import java.util.Scanner;
public class pattern7 {
    public static void printNums(int n) {
        int i, j,num;
        for(i=0; i<n; i++) {
            num=1;
            for(j=0; j<=i; j++) {
                System.out.print(num + " ");
                num++;
            }
            System.out.println();
        }
    }
    public static void main(String args[]) {
        System.out.println("Enter the number of rows:--");
        Scanner sc = new Scanner(System.in);
        int n = sc.nextInt();
        printNums(n);
    }
}
```

```
"C:\Program Files\Java\jdk-18.0.2.1\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA 2022.2.2\lib\idea_rt.jar=64842:C:\Program Files\JetBrains\IntelliJ IDEA 2022.2.2\bin" -Dfile.encoding=UTF-8 -Dsun.stdout.en
Enter the number of rows:--
7
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5
1 2 3 4 5 6
1 2 3 4 5 6 7

Process finished with exit code 0
```

Build completed successfully in 1 sec, 994 ms (a minute ago)

PONNURI ANIRUDDHA
RA2112704010015

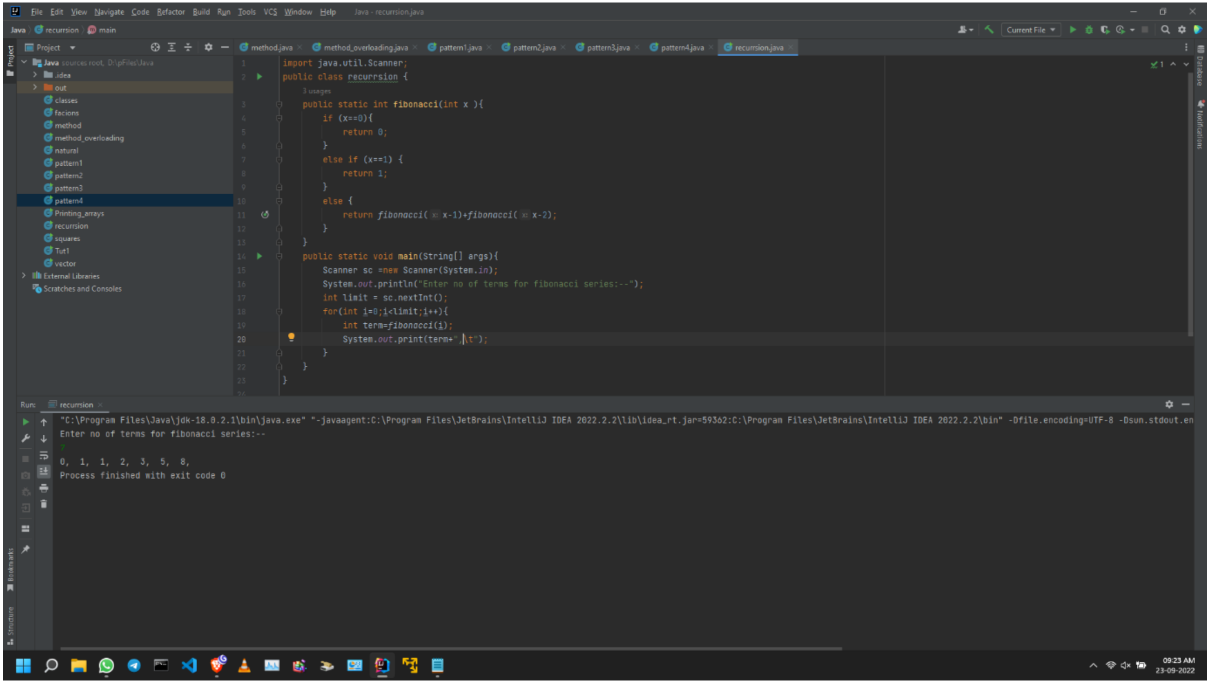


```java
import java.io.*;
import java.util.Scanner;
public class pattern8 {
    public static void main(String[] args) {
        System.out.println("Enter the number of rows:--");
        Scanner sc = new Scanner(System.in);
        int rows = sc.nextInt();
        for (int i = 1; i <= rows; i++) {
            for (int j = 1; j < i; j++) {
                System.out.print(" ");
            }
            for (int j = i; j <= rows; j++) {
                System.out.print(j+" ");
            }
            System.out.println();
        }
    }
}
```

```
"C:\Program Files\Java\jdk-18.0.2.1\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA 2022.2.2\lib\idea_rt.jar=64883:C:\Program Files\JetBrains\IntelliJ IDEA 2022.2.2\bin" -Dfile.encoding=UTF-8 -Dsun.stdout.en
Enter the number of rows:--
7
1 2 3 4 5 6 7 
 2 3 4 5 6 7 
  3 4 5 6 7 
   4 5 6 7 
    5 6 7 
     6 7 
      7 

Process finished with exit code 0
```

Build completed successfully in 2 sec, 377 ms (moments ago)

3. Program that works with Recursion



```java
import java.util.Scanner;
public class recurrsion {
    public static int fibonacci(int x ){
        if (x==0){
            return 0;
        }
        else if (x==1) {
            return 1;
        }
        else {
            return fibonacci( x: x-1)+fibonacci( x: x-2);
        }
    }
    public static void main(String[] args){
        Scanner sc =new Scanner(System.in);
        System.out.println("Enter no of terms for fibonacci series:--");
        int limit = sc.nextInt();
        for(int i=0;i<limit;i++){
            int term=fibonacci(i);
            System.out.print(term+",\t");
        }
    }
}
```

```
"C:\Program Files\Java\jdk-18.0.2.1\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA 2022.2.2\lib\idea_rt.jar=59362:C:\Program Files\JetBrains\IntelliJ IDEA 2022.2.2\bin" -Dfile.encoding=UTF-8 -Dsun.stdout.en
Enter no of terms for fibonacci series:--
7
0,	1,	1,	2,	3,	5,	8,	
Process finished with exit code 0
```