

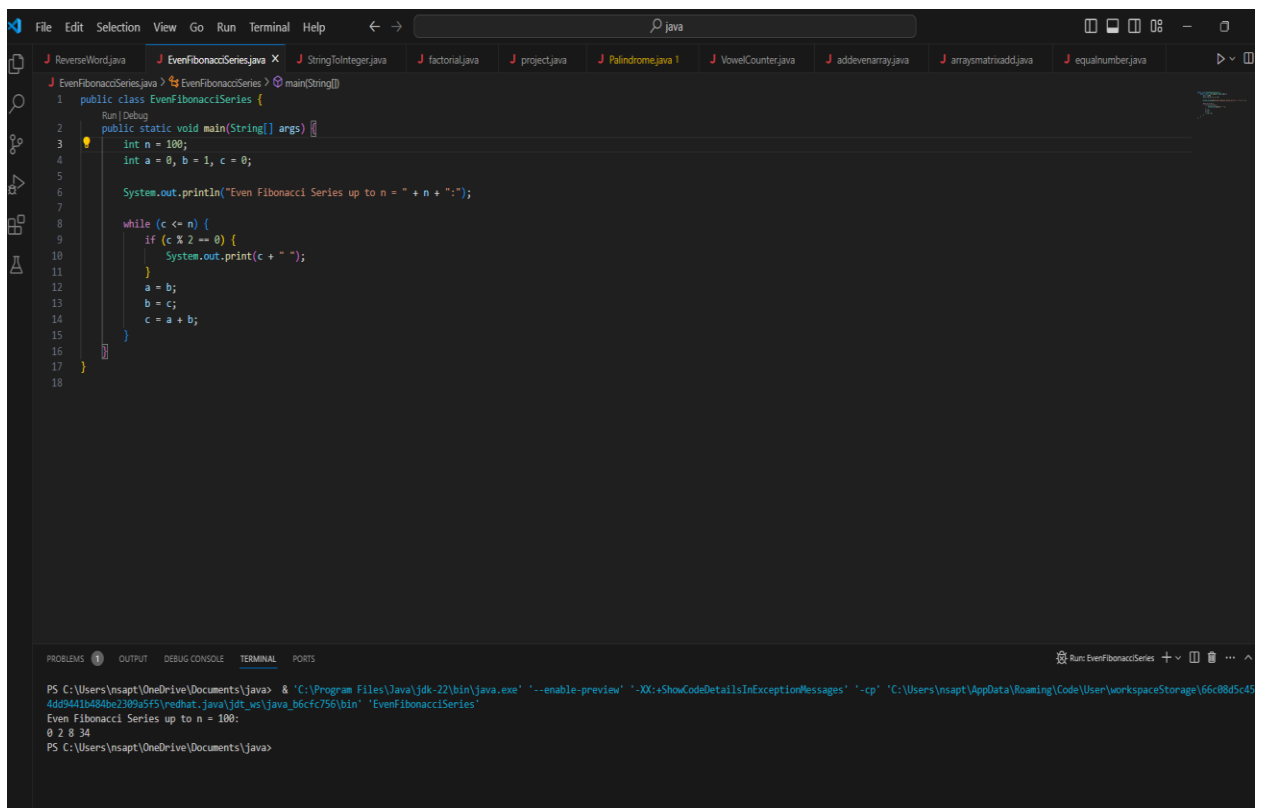
LEVEL TEST – 1

CSA0987-JAVA PROGRAMING FOR PROBLEM SOLVING

NAME - N . SAPTHA NAGESWAR

REG NO - 192372001

1) WRITE A PROGRAM FOR EVEN FIBNOCCI SERIES UPTO N.



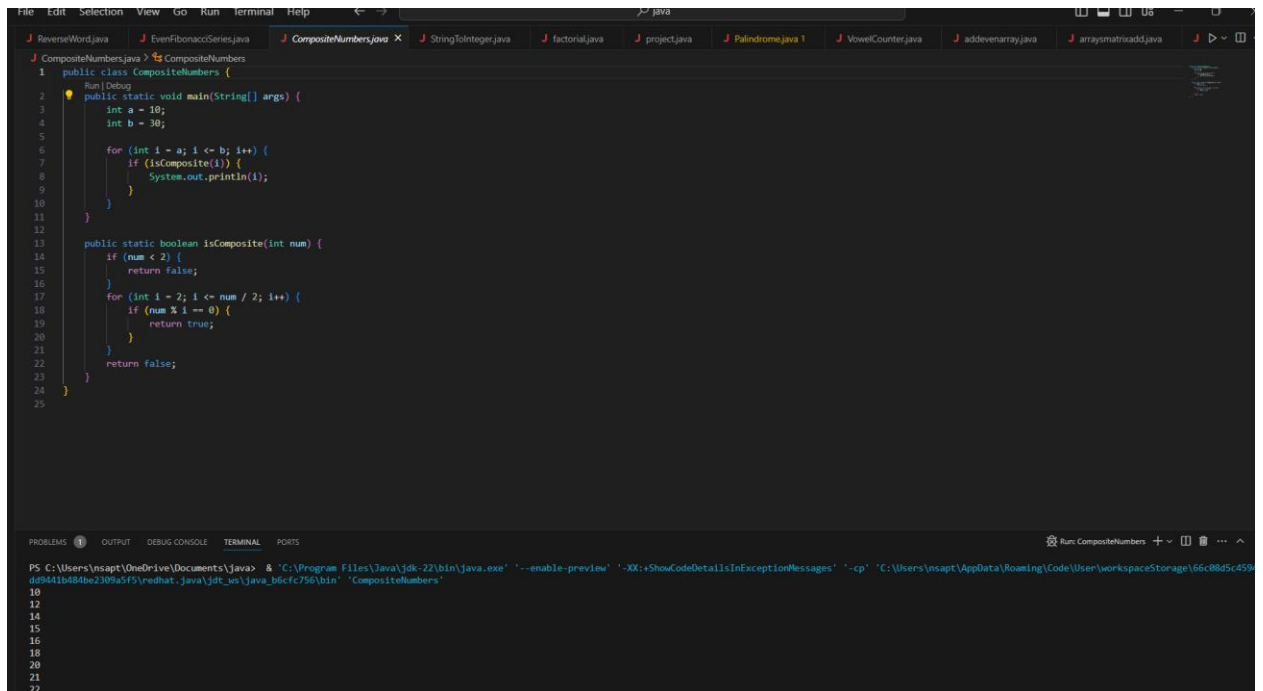
```
File Edit Selection View Go Run Terminal Help
J ReverseWord.java J EvenFibonacciSeries.java X J StringToInteger.java J factorial.java J project.java J Palindrome.java 1 J VowelCounter.java J addEvenArray.java J arrayMatrixAdd.java J equalNumber.java
J EvenFibonacciSeries.java > EvenFibonacciSeries > main(String[])
1 public class EvenFibonacciSeries {
2     public static void main(String[] args) {
3         int n = 100;
4         int a = 0, b = 1, c = 0;
5
6         System.out.println("Even Fibonacci Series up to n = " + n + ":");
7
8         while (c <= n) {
9             if (c % 2 == 0) {
10                 System.out.print(c + " ");
11             }
12             a = b;
13             b = c;
14             c = a + b;
15         }
16     }
17 }
18

PROBLEMS 1 OUTPUT DEBUG CONSOLE TERMINAL PORTS
PS C:\Users\nsapth\OneDrive\Documents\java> & 'C:\Program Files\Java\jdk-22\bin\java.exe' '-enable-preview' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\nsapth\AppData\Roaming\Code\User\workspaceStorage\66c88d5c4544094418404be2309a5f5\redhat_java\jdk_us\java_b6cfc756\bin' 'EvenFibonacciSeries'
Even Fibonacci Series up to n = 100:
0 2 8 34
PS C:\Users\nsapth\OneDrive\Documents\java>
```

INPUT : - 100

OUTPUT: - 0 2 8 34

2) WRITE A PROGRAM FOR COMPOSITE NUMBERS B/W A AND B.



```
File Edit Selection View Go Run Terminal Help
CompositeNumbers.java X StringToInteger.java factorial.java project.java Palindrome.java 1 VowelCounter.java addevenarray.java arraymatrixadd.java

J CompositeNumbers.java > CompositeNumbers
1 public class CompositeNumbers {
2     public static void main(String[] args) {
3         int a = 10;
4         int b = 20;
5
6         for (int i = a; i <= b; i++) {
7             if (isComposite(i)) {
8                 System.out.println(i);
9             }
10        }
11
12        public static boolean isComposite(int num) {
13            if (num < 2) {
14                return false;
15            }
16            for (int i = 2; i <= num / 2; i++) {
17                if (num % i == 0) {
18                    return true;
19                }
20            }
21            return false;
22        }
23    }
24 }
25

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
Run CompositeNumbers + - - - -
PS C:\Users\nsapt\OneDrive\Documents\Java> & 'C:\Program Files\Java\jdk-22\bin\java.exe' '-enable-preview' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\nsapt\AppData\Roaming\Code\User\workspaceStorage\66c88d5c4594d49441b484be2309a5f9\redhat_java\jdk_wsl\java_bin\bin' 'CompositeNumbers'
10
12
14
15
16
18
20
21
22
```

INPUT : - A=10

B=20

OUTPUT: 10,12,14,16,18,20

3) WRITE A PROGRAM FOR NO.OF FACTORS IN GIVEN NUMBER.

```
FactorCounter.java > FactorCounter
1 public class FactorCounter {
2     public static int countFactors(int number) {
3         int count = 0;
4         for (int i = 1; i <= number; i++) {
5             if (number % i == 0) {
6                 count++;
7             }
8         }
9         return count;
10    }
11    Run | Debug
12    public static void main(String[] args) {
13        int number = 24;
14        int factors = countFactors(number);
15        System.out.println("Number of factors in " + number + " is: " + factors);
16    }
17 }
```

PROBLEMS 1 OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS C:\Users\nsapt\OneDrive\Documents\java> & 'C:\Program Files\Java\jdk-22\bin\java.exe'
age\66c08d5c4594dd9441b484be2309a5f5\redhat.java\jdt_ws\java_b6cfc756\bin' 'FactorCounter'
Number of factors in 24 is: 8
PS C:\Users\nsapt\OneDrive\Documents\java>
```

INPUT : - 24

OUTPUT: - 8

4) WRITE A PROGRAM FOR REVERSE A NUMBER USING LOOPS.

```
reverse number.java > reverse
1 class reverse{
2     public static void main(String[] args) {
3         int n=123;
4         int rev=0;
5         while(n!=0){
6             int rem=n%10;
7             rev=rev*10 + rem ;
8             n=n/10;
9         }
10        System.out.print(rev);
11    }
12 }
```

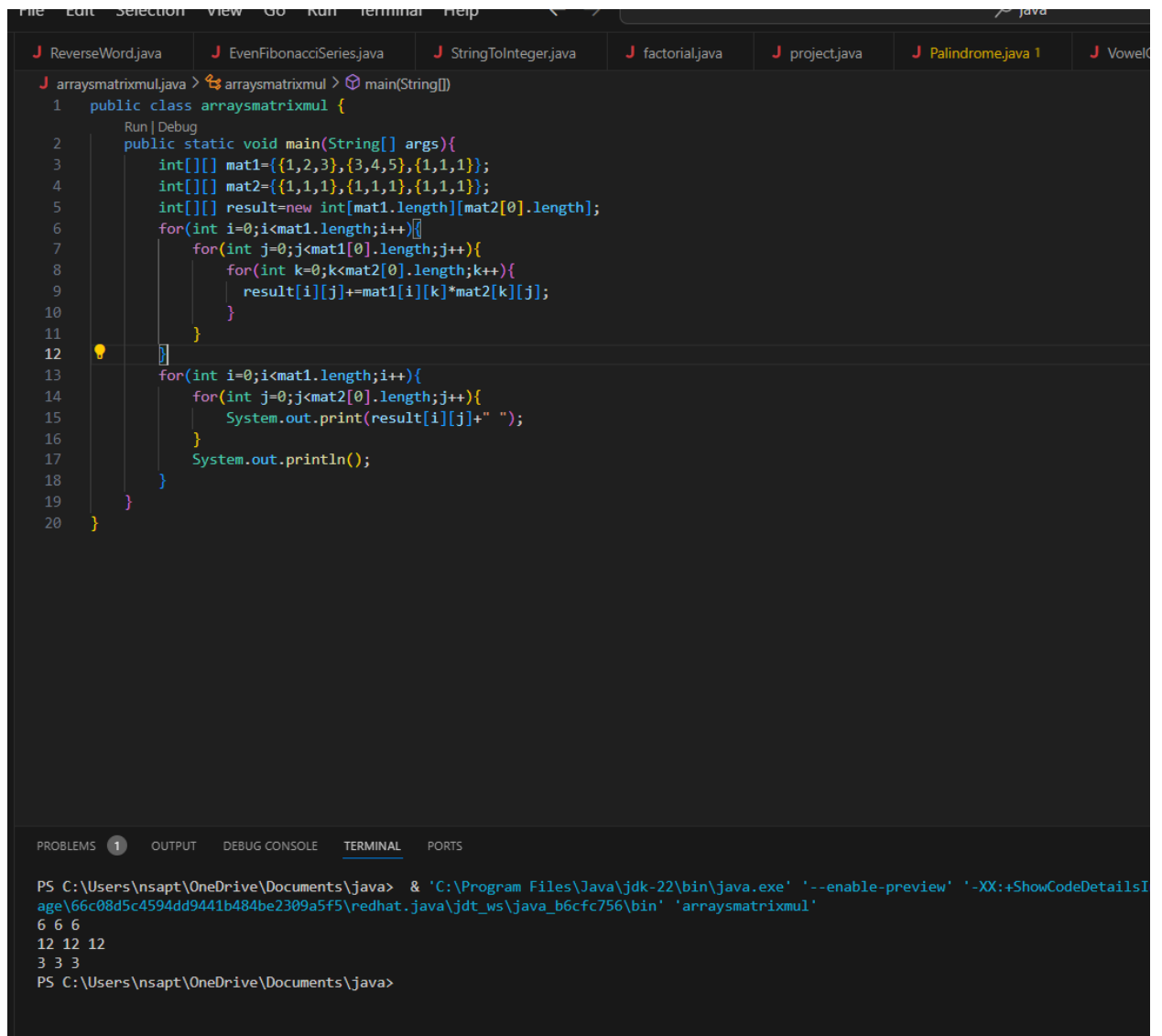
PROBLEMS 1 OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS C:\Users\nsapt\OneDrive\Documents\java> & 'C:\Program Files\Java\jdk-11.0.2\bin\java.exe' -cp 'C:\Program Files\Java\jdk-11.0.2\bin\java' 321
PS C:\Users\nsapt\OneDrive\Documents\java>
```

INPUT : - 123

OUTPUT: 321

5) WRITE A PROGRAM FOR MARTIX MULTIPLICATIONS(3*3)



The screenshot shows an IDE with a Java file named `arraysmatrixmul.java`. The code defines a class `arraysmatrixmul` with a `main` method. It initializes two 3x3 matrices, `mat1` and `mat2`, and calculates their product into a `result` matrix. The output is printed row by row.

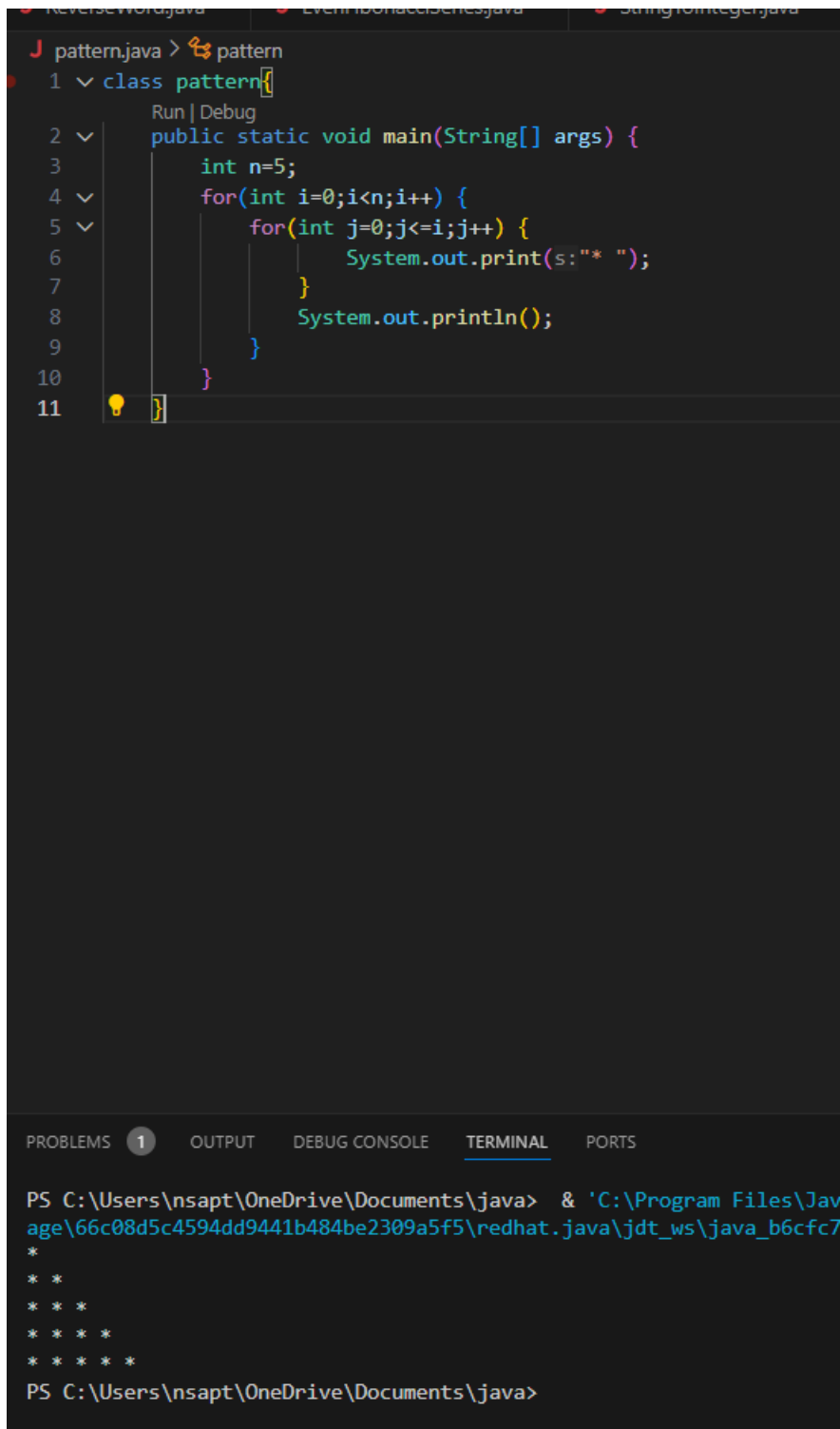
```
1 public class arraysmatrixmul {
2     public static void main(String[] args){
3         int[][] mat1={{1,2,3},{3,4,5},{1,1,1}};
4         int[][] mat2={{1,1,1},{1,1,1},{1,1,1}};
5         int[][] result=new int[mat1.length][mat2[0].length];
6         for(int i=0;i<mat1.length;i++){
7             for(int j=0;j<mat1[0].length;j++){
8                 for(int k=0;k<mat2[0].length;k++){
9                     result[i][j]+=mat1[i][k]*mat2[k][j];
10                }
11            }
12        }
13        for(int i=0;i<mat1.length;i++){
14            for(int j=0;j<mat2[0].length;j++){
15                System.out.print(result[i][j]+" ");
16            }
17            System.out.println();
18        }
19    }
20 }
```

The terminal output shows the execution of the program:

```
PS C:\Users\nsapt\OneDrive\Documents\java> & 'C:\Program Files\Java\jdk-22\bin\java.exe' '-enable-preview' '-XX:+ShowCodeDetailsI
age\66c08d5c4594dd9441b484be2309a5f5\redhat.java\jdt_ws\java_b6cfc756\bin' 'arraysmatrixmul'
6 6 6
12 12 12
3 3 3
PS C:\Users\nsapt\OneDrive\Documents\java>
```

INPUT : - A=[1,2,3	B = [1,1,1	OUTPUT: - [6,6,6
3,4,5	1,1,1	12,12,12
1,1,1]	1,1,1]	3,3,3]

6) WRITE A PROGRAM FOR RIGHT ANGLED TRIANGLED IN PATTERN.



The image shows a screenshot of an IDE with a Java file named `pattern.java`. The code defines a class `pattern` with a `main` method. Inside `main`, a variable `n` is set to 5. Two nested `for` loops are used: the outer loop iterates `i` from 0 to 4, and the inner loop iterates `j` from 0 to `i`. The inner loop prints an asterisk followed by a space for each iteration. After the inner loop completes, a `println` statement is executed to move to the next line. The IDE's terminal window at the bottom shows the output of the program, which is a right-angled triangle of asterisks with 5 rows. The first row has 1 asterisk, the second has 2, the third has 3, the fourth has 4, and the fifth has 5.

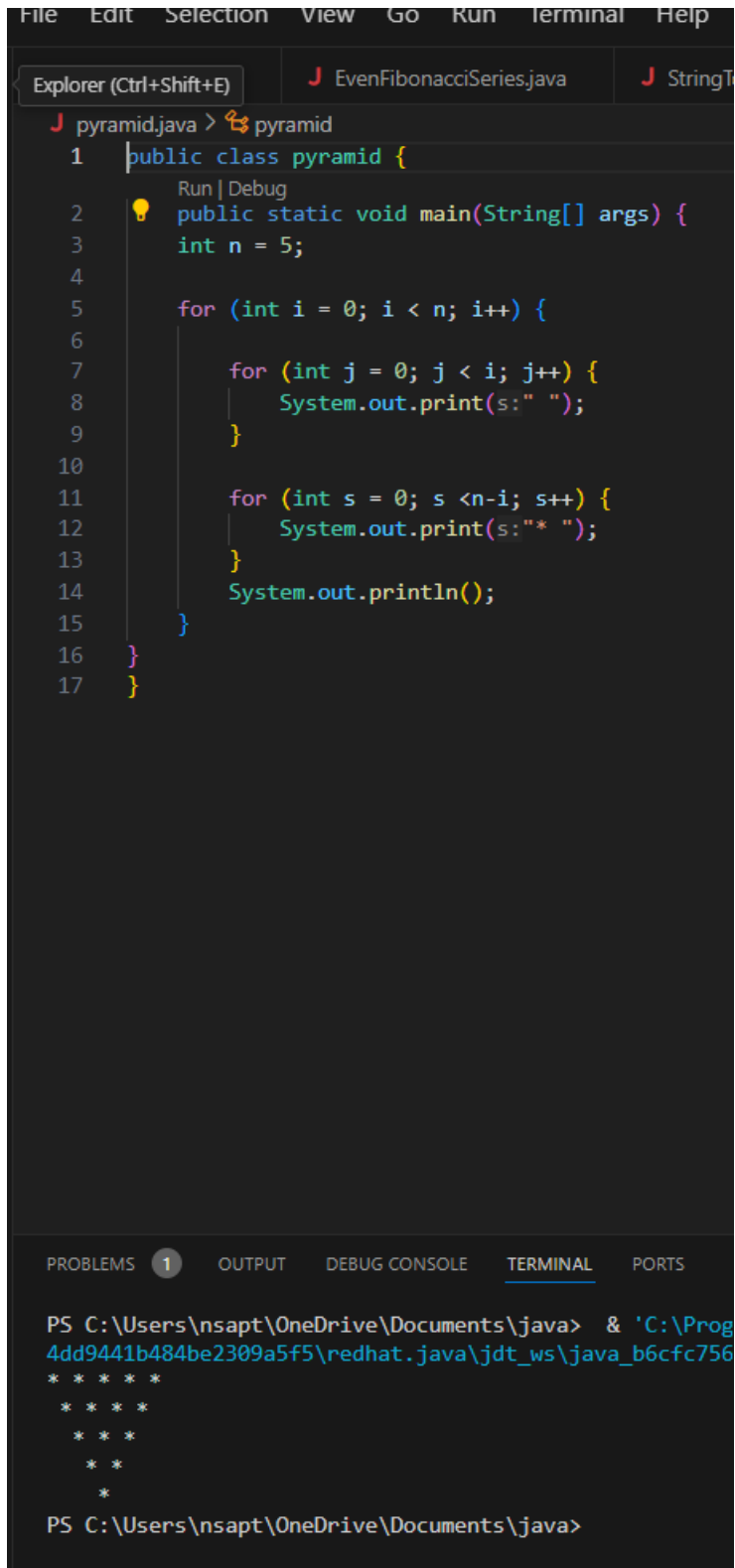
```
pattern.java > pattern
1 class pattern {
2     public static void main(String[] args) {
3         int n=5;
4         for(int i=0;i<n;i++) {
5             for(int j=0;j<=i;j++) {
6                 System.out.print(s:"* ");
7             }
8             System.out.println();
9         }
10    }
11 }
```

PROBLEMS 1 OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS C:\Users\nsapt\OneDrive\Documents\java> & 'C:\Program Files\Java\
age\66c08d5c4594dd9441b484be2309a5f5\redhat.java\jdt_ws\java_b6cfc7
*
* *
* * *
* * * *
* * * * *
```

PS C:\Users\nsapt\OneDrive\Documents\java>

7) WRITE A PROGRAM FOR INVERTED PYRAMID IN PATTERN



The screenshot shows an IDE with a Java file named `pyramid.java`. The code defines a class `pyramid` with a `main` method. Inside `main`, a variable `n` is set to 5. A loop iterates from `i = 0` to `i < n`. For each `i`, there are two nested loops: the first prints spaces (5 - `i` times) and the second prints asterisks (`i` times). The output in the terminal shows an inverted pyramid pattern for `n = 5`.

```
File Edit Selection View Go Run Terminal Help
pyramid.java > pyramid
1 public class pyramid {
2     public static void main(String[] args) {
3         int n = 5;
4
5         for (int i = 0; i < n; i++) {
6
7             for (int j = 0; j < i; j++) {
8                 System.out.print(" ");
9             }
10
11             for (int s = 0; s < n-i; s++) {
12                 System.out.print("* ");
13             }
14             System.out.println();
15         }
16     }
17 }
```

PROBLEMS 1 OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS C:\Users\nsapt\OneDrive\Documents\java> & 'C:\Prog
4dd9441b484be2309a5f5\redhat.java\jdt_ws\java_b6cfc756
* * * * *
* * * *
* * *
* *
*
PS C:\Users\nsapt\OneDrive\Documents\java>
```