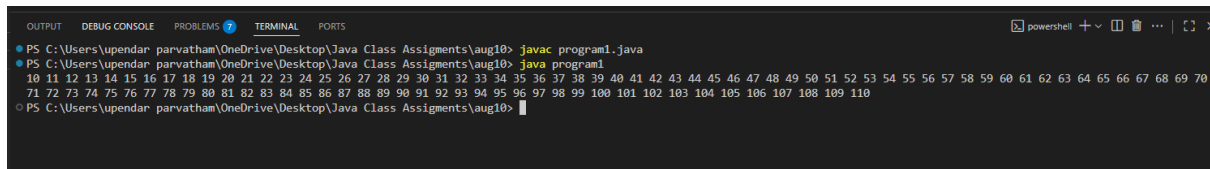


Parvatham Ram Charan

1. Write a program to print numbers from 10 to 110.

```
public class program1 {  
    public static void main(String[] args) {  
        for(int i = 10; i <= 110; i++){  
            System.out.print(i+" ");  
        }  
    }  
}
```

Output:

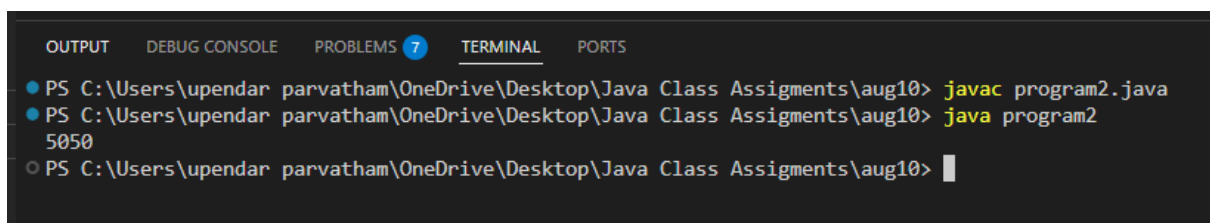


```
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> javac program1.java  
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program1  
10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70  
71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110  
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10>
```

2. Write a program to calculate the sum of all numbers from 1 to 100.

```
public class program2 {  
    public static void main(String[] args) {  
        int sum = 0;  
        for(int i = 1 ; i <= 100 ; i++){  
            sum += i;  
        }  
        System.out.println(sum);  
    }  
}
```

Output:

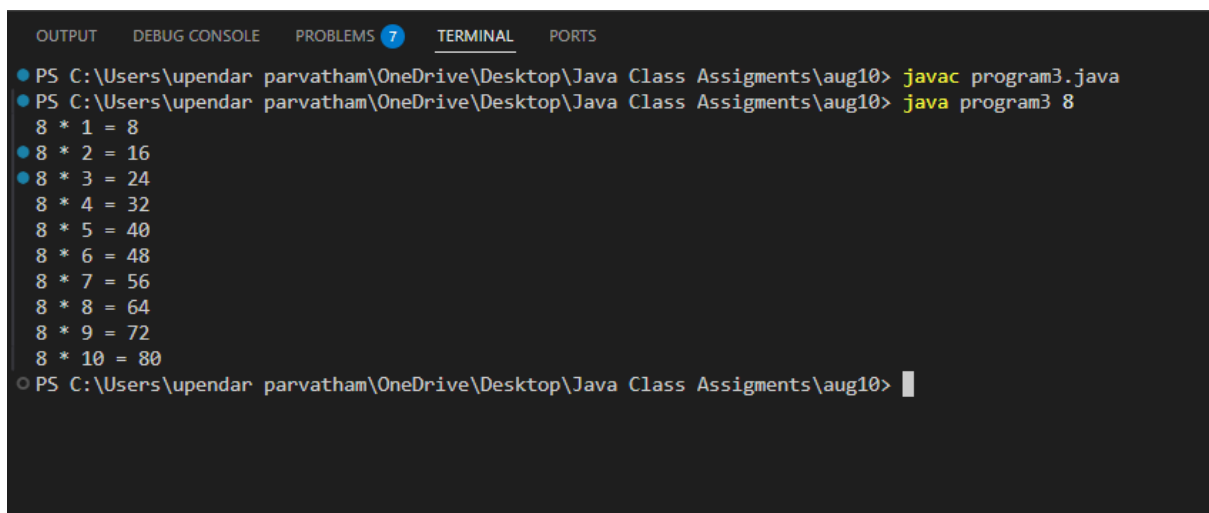


```
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> javac program2.java  
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program2  
5050  
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10>
```

3. //Write a program to print the multiplication table of a given number.

```
public class program3 {  
  
    public static void main(String[] args) {  
  
        int num = Integer.parseInt(args[0]);  
  
        for(int i = 1; i <=10 ;i++){  
  
            System.out.println(num+" * "+i+" = "+(num*i));  
  
        }  
  
    }  
  
}
```

Output:



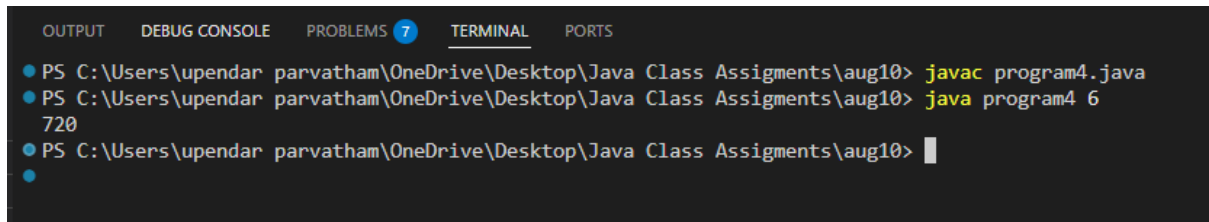
```
OUTPUT  DEBUG CONSOLE  PROBLEMS 7  TERMINAL  PORTS  
● PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> javac program3.java  
● PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program3 8  
8 * 1 = 8  
8 * 2 = 16  
8 * 3 = 24  
8 * 4 = 32  
8 * 5 = 40  
8 * 6 = 48  
8 * 7 = 56  
8 * 8 = 64  
8 * 9 = 72  
8 * 10 = 80  
○ PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> |
```

4.//Write a program to find the factorial of a given number.

```
public class program4 {  
  
    public static void main(String[] args) {  
  
        int num = Integer.parseInt(args[0]);  
  
        int fact=1;  
  
        for(int i = num ;i >=1;i--){  
  
            fact *= i;  
  
        }  
  
        System.out.println(fact);  
  
    }  
  
}
```

```
}  
}
```

Output:



```
OUTPUT  DEBUG CONSOLE  PROBLEMS 7  TERMINAL  PORTS  
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> javac program4.java  
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program4 6  
720  
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> 
```

5. //Write a program to check if a given number is prime.

```
public class program5 {  
    public static boolean isPrime(int num){  
        if(num <=1){  
            return false;  
        }  
        if(num<=3){  
            return true;  
        }  
        if(num%2==0 || num%3==0){  
            return false;  
        }  
        for(int i = 5 ; i< Math.sqrt(num);i=i+6){  
            if(num%i==0 || num%(i+2)==0){  
                return false;  
            }  
        }  
        return true;  
    }  
    public static void main(String[] args) {
```

```

int num = Integer.parseInt(args[0]);

if(isPrime(num)){

    System.err.println(num+" is a prime");

}else{

    System.out.println(num +" is not a prime");

}

}

}

```

Output:

```

OUTPUT  DEBUG CONSOLE  PROBLEMS 7  TERMINAL  PORTS
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> javac program5.java
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program5 89
89 is a prime
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program5 51
51 is not a prime
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program5 45
45 is not a prime
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program5 29
29 is a prime
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> 

```

6. //Write a program to print the Fibonacci series up to a given number of terms.

```

import java.util.*;

public class program6 {

    public static ArrayList<Integer> result(int num){

        ArrayList<Integer> arr = new ArrayList<>();

        int num1 = 0;

        int num2=1;

        int num3;

        arr.add(num1);

        arr.add(num2);

        num = num-2;

        while(num-- > 0){

            num3=num1+num2;

            arr.add(num3);

```

```

        num1 = num2;
        num2 = num3;
    }
    return arr;
}

public static void main(String[] args) {
    //int num = Integer.parseInt(args[0]);
    Scanner sc = new Scanner(System.in);
    int num = sc.nextInt();
    ArrayList<Integer> res = result(num);
    for(int i : res){
        System.out.print(i+" ");
    }
    sc.close();
}
}

```

Output:

```

25    ...for(int i : res){
OUTPUT  DEBUG CONSOLE  PROBLEMS 7  TERMINAL  PORTS
PS Focus folder in explorer (ctrl + click) eDrive\Desktop\Java Class Assignments\aug10> javac program6.java
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program6
5
0 1 1 2 3
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program6
30
0 1 1 2 3 5 8 13 21 34 55 89 144 233 377 610 987 1597 2584 4181 6765 10946 17711 28657 46368 75025 121393 196418 317811 514229
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> 

```

7. //Write a program to calculate the sum of digits of a given number

```

public class program7 {
    public static void main(String[] args) {
        int num = Integer.parseInt(args[0]);
        int digit, sum=0;

```

```

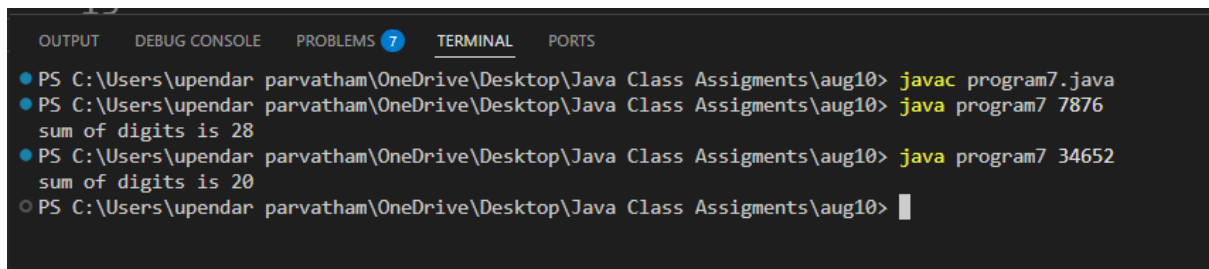
while(num > 0){
    digit = num%10;
    sum += digit;
    num = num/10;
}

System.out.println("sum of digits is "+sum);

}
}

```

Output:



```

OUTPUT  DEBUG CONSOLE  PROBLEMS 7  TERMINAL  PORTS
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assigments\aug10> javac program7.java
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assigments\aug10> java program7 7876
sum of digits is 28
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assigments\aug10> java program7 34652
sum of digits is 20
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assigments\aug10> 

```

8.//Write a program to check if a given number is a palindrome.

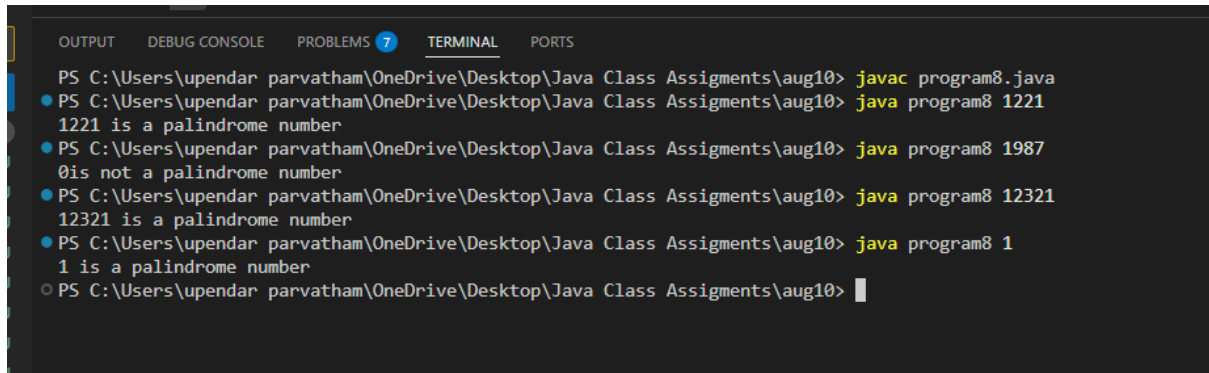
```

public class program8 {
    public static void main(String[] args) {
        int num = Integer.parseInt(args[0]);
        int rev = 0, digit, original = num;
        while(num > 0){
            digit = num%10;
            rev = rev*10 + digit;
            num = num/10;
        }
        if(rev == original){
            System.out.println(rev+" is a palindrome number");
        }else{
            System.out.println(num+"is not a palindrome number");
        }
    }
}

```

```
}  
}  
}
```

Output:



```
OUTPUT  DEBUG CONSOLE  PROBLEMS 7  TERMINAL  PORTS  
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> javac program8.java  
● PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program8 1221  
1221 is a palindrome number  
● PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program8 1987  
0is not a palindrome number  
● PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program8 12321  
12321 is a palindrome number  
● PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program8 1  
1 is a palindrome number  
○ PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> 
```

Program9:

//Write a program to find the sum of all odd numbers between 1 and 50

```
public class program9 {  
    public static void main(String[] args) {  
        int sum =0;  
        for(int i =1 ; i<=50;i++){  
            if(i%2==1){  
                sum += i;  
            }  
        }  
        System.out.println(sum);  
    }  
}
```

Output:

```
OUTPUT  DEBUG CONSOLE  PROBLEMS 7  TERMINAL  PORTS
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> javac program9.java
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program9
625
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> 
```

10.//Write a program to find the sum of all even numbers between 1 and 50

```
public class program10 {

    public static void main(String[] args) {

        int sum= 0;

        for(int i= 1 ; i <= 100;i++){

            if(i%2==0){

                sum += i;

            }

        }

        System.out.println(sum);

    }

}
```

Output:

```
OUTPUT  DEBUG CONSOLE  PROBLEMS 7  TERMINAL  PORTS
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> javac program10.java
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program10
2550
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> 
```

11. //Write a program to check if a given number is Armstrong.

// armstrong number is that equal to sum of its digits , each digit powerd to total numbers of digits

```
public class program11 {

    public static void main(String[] args) {

        int num = Integer.parseInt(args[0]);

        int digit,original=num,nod=0;

        while(num > 0){

            nod++;

        }

    }

}
```

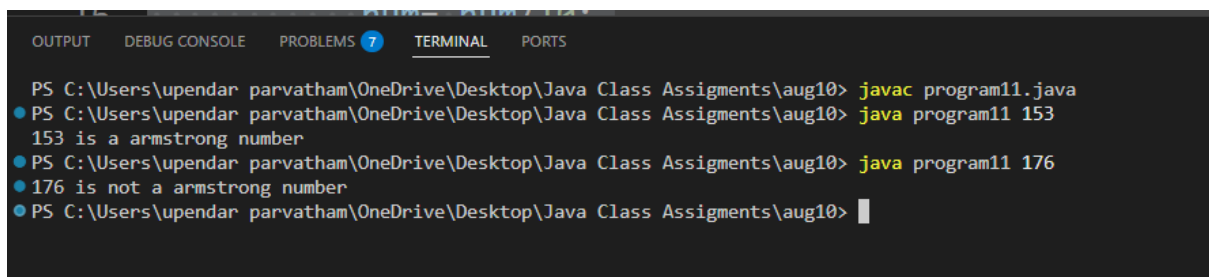


```

        num =num/10;
    }
    int sum=0;
    num = original;
    while(num > 0){
        digit = num%10;
        sum = sum+ (int)Math.pow(digit,nod);
        num= num/10;
    }
    if(sum== original){
        System.out.println(original +" is a armstrong number");
    }
    else{
        System.out.println(original+" is not a armstrong number");
    }
}
}

```

Output:



The screenshot shows a terminal window with the following commands and output:

```

PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> javac program11.java
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program11 153
153 is a armstrong number
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program11 176
176 is not a armstrong number
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> 

```

12.//Write a program to reverse a given number.

```

public class program12 {
    public static void main(String[] args) {
        int num = Integer.parseInt(args[0]);
        int digit,rev=0;
        while(num > 0){

```

```

        digit = num%10;

        rev = rev*10 + digit;

        num = num/10;
    }

    System.out.println("reverse of number is "+ rev);
}
}

```

Output:

```

PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> javac program12.java
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program12 8646
reverse of number is 6468
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program12 8646
reverse of number is 6468
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program12 87546
reverse of number is 64578
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10>

```

13.//Write a program to calculate the power of a number using a loop.

```

public class program13 {

    public static void main(String[] args) {

        int num = Integer.parseInt(args[0]);

        int exp = Integer.parseInt(args[1]);

        int result=1 ; //anything power is one

        for(int i =1 ; i <=exp ;i++){

            result = result*num;

        }

        System.out.println(result);

    }

}

```

Output:

```
OUTPUT  DEBUG CONSOLE  PROBLEMS 7  TERMINAL  PORTS

PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> javac program13.java
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program13 3 4
81
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program13 5 4
625
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> 
```

//14. Write a program to find the greatest common divisor (GCD) of two numbers.

```
public class program14 {
    public static void main(String[] args) {
        int num1 = Integer.parseInt(args[0]); // 5 15
        int num2 = Integer.parseInt(args[1]);
        if(num1==0){
            System.out.println(num2);
        }else if(num2==0){
            System.out.println(num1);
        }
        else{
            while( num1!=num2){
                if(num1 > num2){
                    num1 = num1-num2;
                }
                else{
                    num2= num2-num1;
                }
            }
            System.out.println(num1); // num1 and num2 are equal
        }
    }
}
```

Output:

```
OUTPUT  DEBUG CONSOLE  PROBLEMS 7  TERMINAL  PORTS

PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> javac program14.java
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program14 5 15
5
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program14 45 60
15
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> 
```

15. //Write a program to check if a given string is a palindrome.

```
public class program15 {

    public static boolean palindrome(String s){

        int n = s.length();

        int t = n >> 1;

        for(int i =0; i < t;i++){

            if(s.charAt(i)!=s.charAt(n-i-1)){

                return false;

            }

        }

        return true;

    }

    public static void main(String[] args) {

        String s = args[0];

        if(palindrome(s)){

            System.out.println(s+" is a palindrome");

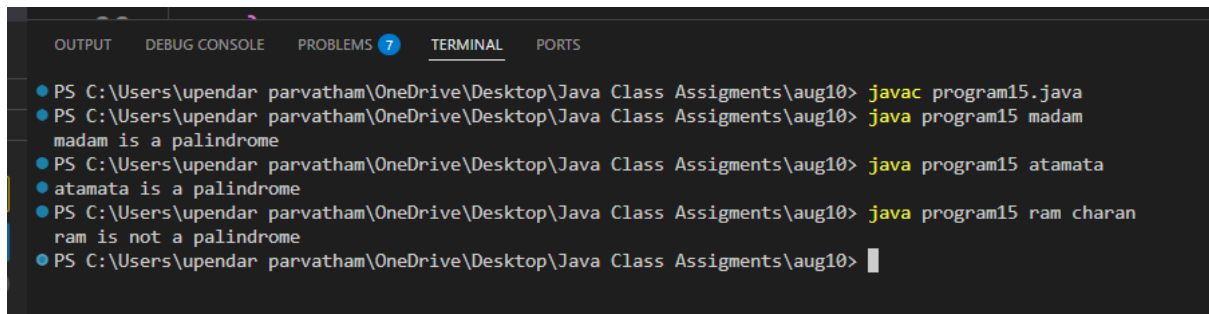
        }else{

            System.out.println(s+" is not a palindrome");

        }

    }

}
```



The screenshot shows an IDE terminal window with the following content:

```
OUTPUT  DEBUG CONSOLE  PROBLEMS 7  TERMINAL  PORTS

• PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> javac program15.java
• PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program15 madam
madam is a palindrome
• PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program15 atamata
atamata is a palindrome
• PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program15 ram charan
ram is not a palindrome
• PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> 
```

16. //Write a program to print the ASCII values of all lowercase alphabets.

```
public class program16 {

    public static void main(String[] args) {

        // char ch = 'a';

        // for(int i=0; i< 26;i++){

        //     System.out.println(ch+" => "+(int)ch);

        //     ch++;

        // }

        char ch ='A';

        for(int i=0 ; i < 26;i++){

            System.out.println(ch+" = > "+(int)ch);

            ch++;

        }

    }

}
```

Output:

```
OUTPUT  DEBUG CONSOLE  PROBLEMS 7  TERMINAL  PORTS

PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program16
A = > 65
B = > 66
C = > 67
D = > 68
E = > 69
F = > 70
G = > 71
H = > 72
I = > 73
J = > 74
K = > 75
L = > 76
M = > 77
N = > 78
O = > 79
P = > 80
Q = > 81
R = > 82
S = > 83
T = > 84
U = > 85
V = > 86
W = > 87
X = > 88
Y = > 89
Z = > 90
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> 
```

17. //Write a program to calculate the average of a list of numbers.

```
public class program17 {
    public static void main(String[] args) {
        Double sum=0.0;
        for(int i = 0; i < args.length;i++){
            Double num = Double.parseDouble(args[i]);
            sum +=num;
        }
        System.out.println(sum/args.length);
    }
}
```

```
OUTPUT  DEBUG CONSOLE  PROBLEMS 7  TERMINAL  PORTS
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> javac program17.java
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program17 89 76 45 100 87 56
75.5
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program17 78 45 23 78 09 87 56 45
52.625
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> 
```

18.

//Write a program to check if a given year is a leap year.

```
public class program18 {
    public static void main(String[] args) {
        int year = Integer.parseInt(args[0]);
        if ((year % 400 == 0) || (year % 4 == 0 && year % 100 != 0)) {
            System.out.println("leap year");
        } else {
            System.out.println("not a leap year");
        }
    }
}
```

Output:

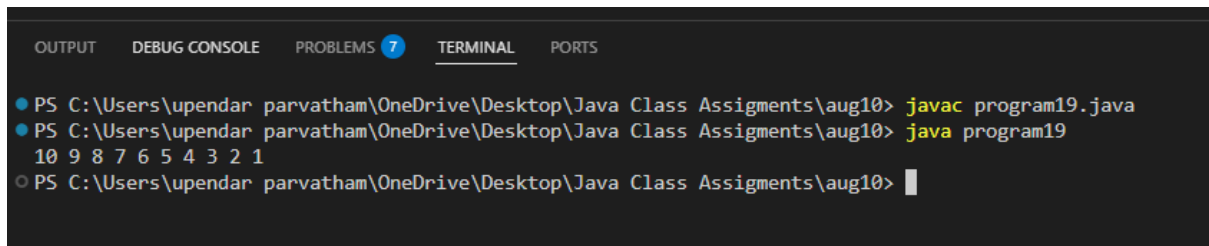
```
OUTPUT  DEBUG CONSOLE  PROBLEMS 7  TERMINAL  PORTS
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> javac program18.java
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program18 2000
leap year
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program18 1990
not a leap year
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program18 2016
leap year
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> 
```

19. //Write a program to print the first 10 natural numbers in reverse order.

```
public class program19 {
    public static void main(String[] args) {
        for(int i=10 ; i>=1;i--){
            System.out.print(i+" ");
        }
    }
}
```

```
    }  
  }  
}
```

Output:

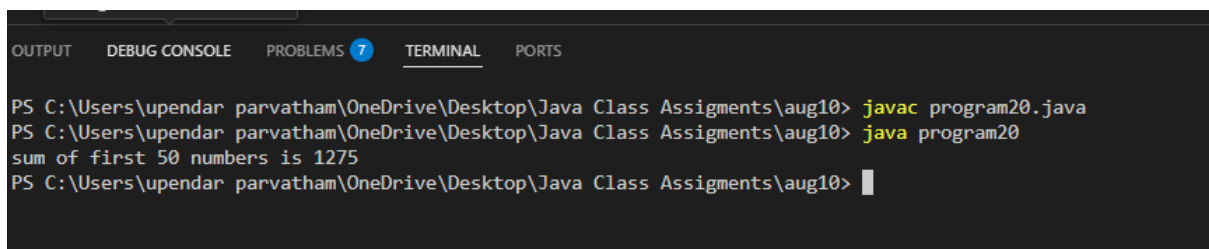


```
OUTPUT  DEBUG CONSOLE  PROBLEMS 7  TERMINAL  PORTS  
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assigments\aug10> javac program19.java  
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assigments\aug10> java program19  
10 9 8 7 6 5 4 3 2 1  
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assigments\aug10> |
```

20. //Write a program to find the sum of the first 50 natural numbers.

```
public class program20 {  
    public static void main(String[] args) {  
        int sum =0;  
        for(int i =1 ; i <=50;i++){  
            sum += i;  
        }  
        System.out.println("sum of first 50 numbers is "+sum);  
    }  
}
```

Output:



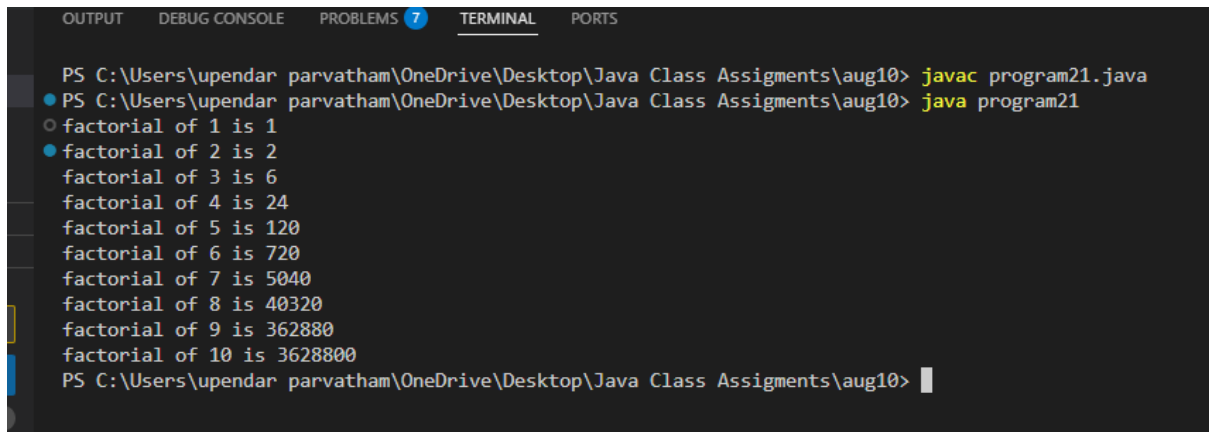
```
OUTPUT  DEBUG CONSOLE  PROBLEMS 7  TERMINAL  PORTS  
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assigments\aug10> javac program20.java  
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assigments\aug10> java program20  
sum of first 50 numbers is 1275  
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assigments\aug10> |
```


21.

//Write a program to print the factorial of numbers from 1 to 10.

```
public class program21 {  
    public static int fact(int num){  
        if(num==0) return 1;  
        return num*fact(num-1);  
    }  
    public static void main(String[] args) {  
        for(int i =1 ; i <= 10 ;i++){  
            System.out.println("factorial of "+ i +" is "+fact(i));  
        }  
    }  
}
```

Output:



The screenshot shows a terminal window with the following content:

```
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> javac program21.java  
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program21  
factorial of 1 is 1  
factorial of 2 is 2  
factorial of 3 is 6  
factorial of 4 is 24  
factorial of 5 is 120  
factorial of 6 is 720  
factorial of 7 is 5040  
factorial of 8 is 40320  
factorial of 9 is 362880  
factorial of 10 is 3628800  
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10>
```

22. //Write a program to check if a given string is a palindrome using a loop.

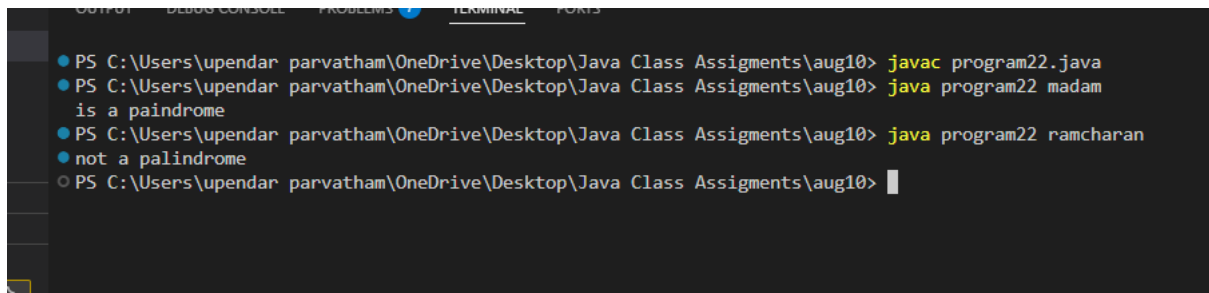
```
public class program22 {  
    public static void main(String[] args) {  
        String s = args[0];  
        int n = s.length();
```

```

int t = n >> 1;
for(int i = 0 ; i < t; i++){
    if(s.charAt(i) != s.charAt(n-i-1)){
        System.err.println("not a palindrome");
    }
}
System.err.println("is a palindrome");
}
}

```

Output:



```

PS C:\Users\upendar\parvatham\OneDrive\Desktop\Java Class Assignments\aug10> javac program22.java
PS C:\Users\upendar\parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program22 madam
is a palindrome
PS C:\Users\upendar\parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program22 ramcharan
not a palindrome
PS C:\Users\upendar\parvatham\OneDrive\Desktop\Java Class Assignments\aug10>

```

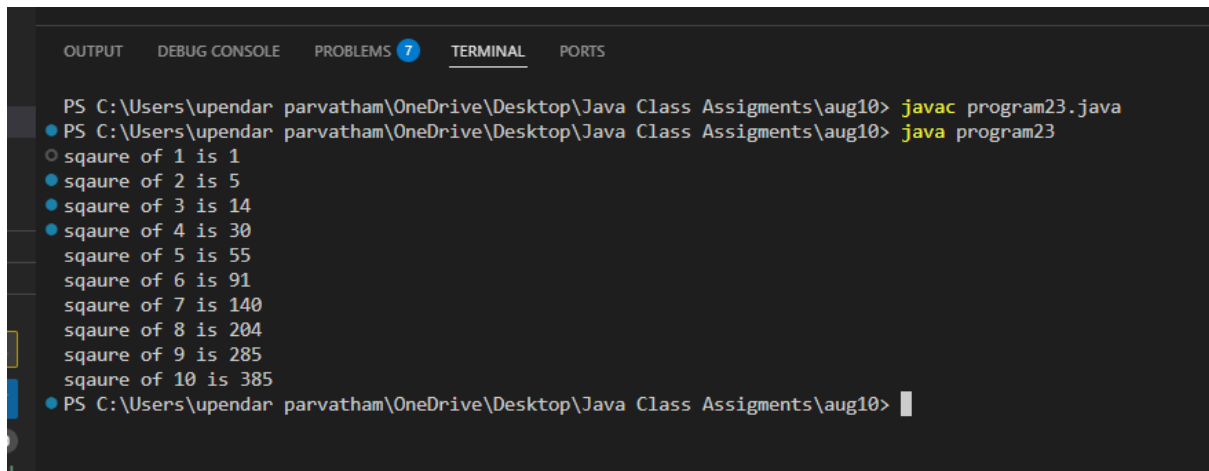
23. //Write a program to calculate the sum of the squares of numbers from 1 to 10.

```

public class program23 {
    public static void main(String[] args) {
        for(int i = 1 ; i <= 10; i++){
            int res = i*i;
            System.out.println("square of "+i+" is "+res);
        }
    }
}

```

Output;



```
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> javac program23.java
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program23
square of 1 is 1
square of 2 is 5
square of 3 is 14
square of 4 is 30
square of 5 is 55
square of 6 is 91
square of 7 is 140
square of 8 is 204
square of 9 is 285
square of 10 is 385
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10>
```

24. //Write a program to print the even numbers between 1 and 100.

```
public class program24 {

    public static void main(String[] args) {

        for(int i=1; i <=100;i++){

            if(i%2==0){

                System.out.println(i);

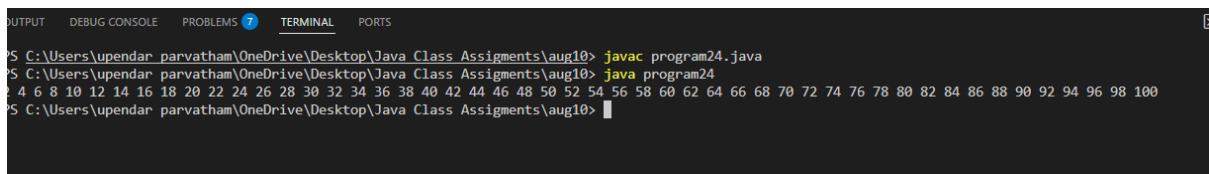
            }

        }

    }

}
```

Output:



```
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> javac program24.java
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program24
2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96 98 100
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10>
```

25. //Write a program to find the sum of all odd numbers between 1 and 50.

```
public class program25 {

    public static void main(String[] args) {

        int sum=0;
```

```

    for(int i =1; i <=50;i=i+2){
        sum= sum+i;
    }
    System.out.println(sum);
}
}

```

Output:

```

PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> javac program25.java
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program25
625
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> 

```

26. //Write a program to check if a given number is a perfect number.

//a perfect number is a number equal to sum of its positive divisors excluding itself

```

public class program26 {
    public static void main(String[] args) {
        int num = Integer.parseInt(args[0]);
        int sum=0;
        for(int i = 1; i < num;i++){
            if(num%i==0){
                sum += i;
            }
        }
        if(num==sum){
            System.out.println(num+" is a perfect number");
        }
        else{
            System.out.println(num+" is not a perfect number");
        }
    }
}

```

```
}  
}
```

Output:



```
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> javac program26.java  
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program26 28  
28 is a perfect number  
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program26 45  
45 is not a perfect number  
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> 
```

27. //Write a program to print the ASCII values of all uppercase alphabets.

```
public class program27 {  
    public static void main(String[] args) {  
        char ch = 'A';  
        for(int i =0 ; i < 26 ;i++){  
            System.out.println(ch+" => "+(int)ch);  
            ch++;  
        }  
    }  
}
```

Output:

```
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> javac program27.java
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program27
A => 65
B => 66
C => 67
D => 68
E => 69
F => 70
G => 71
H => 72
I => 73
J => 74
K => 75
L => 76
M => 77
N => 78
O => 79
P => 80
Q => 81
R => 82
S => 83
T => 84
U => 85
V => 86
W => 87
X => 88
Y => 89
Z => 90
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> 
```

28.//Write a program to calculate the product of the digits of a given number.

```
public class program28 {

    public static void main(String[] args) {

        int num = Integer.parseInt(args[0]);

        int product =1,digit;

        while(num > 0){

            digit= num%10;

            product = product * digit;

            num =num/10;

        }

        System.out.println("product is "+ product);

    }

}
```

Output:

```

PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> javac program28.java
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program28 675
product is 210
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program28 78434
product is 2688
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> 

```

29. //Write a program to check if a given number is a strong number.

//A Strong number is a number which is equal to sum of its each digit factorial

```

public class program29 {

    public static int fact(int num){

        if(num == 0) return 1;

        return num*fact(num-1);

    }

    public static void main(String[] args) {

        int num = Integer.parseInt(args[0]);

        int original = num,sum=0,digit;

        while(num > 0){

            digit = num%10;

            sum = sum + fact(digit);

            num= num/10;

        }

        if(sum== original){

            System.out.println(original+" is a strong number");

        }else{

            System.out.println(original+" is not a strong number");

        }

    }

}

```

Output:

```
OUTPUT  DEBUG CONSOLE  PROBLEMS 7  TERMINAL  PORTS

• PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> javac program29.java
• PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program29 145
145 is a strong number
• PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program29 456
456 is not a strong number
• PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> 
```

30. //Write a program to calculate the sum of the cubes of numbers from 1 to 10.

```
public class program30 {
    public static void main(String[] args) {
        int sum =0,cubes=0;
        for(int i = 1; i <= 10; i++){
            cubes=i*i*i;
            sum= sum+cubes;
        }
        System.out.println(sum);
    }
}
```

Output:

```
OUTPUT  DEBUG CONSOLE  PROBLEMS 7  TERMINAL  PORTS

PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> javac program30.java
• PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program30
3025
• PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> 
```

31. //Write a program to find the sum of all prime numbers between 1 and 100.

```
public class program31 {
    public static boolean isPrime(int num){
        if(num <= 1) return false;
        if(num <= 3) return true;
        if( num%2== 0 || num%3==0){
            return false;
        }
    }
}
```



```

    }

    for(int i = 5 ; i <= Math.sqrt(num);i=i+6){

        if(num%i==0 || num%(i+2)==0){

            return false;

        }

    }

    return true;

}

public static void main(String[] args) {

    int sum=0;

    for(int i = 1; i <= 100;i++){

        if(isPrime(i)){

            sum = sum+i;

        }

    }

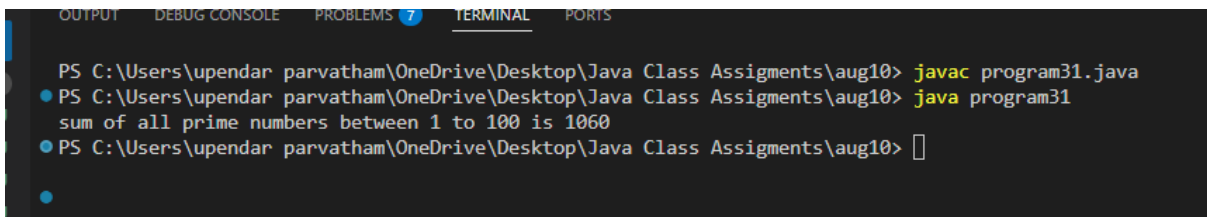
    System.out.print("sum of all prime numbers between 1 to 100 is "+sum);

}

}

```

Output:



```

PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> javac program31.java
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program31
sum of all prime numbers between 1 to 100 is 1060
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> 

```

32. //32. Write a program to check if a given string is a pangram.

//a pangram is string that contains all alphabets atleast once

```
import java.util.*;
```

```
public class program32 {
```

```

public static void main(String[] args) {

    Scanner scanner = new Scanner(System.in);

    String sentence = scanner.nextLine().toLowerCase();

    int count = 0;

    boolean[] letters = new boolean[26];

    for (char ch : sentence.toCharArray()) {

        if (ch >= 'a' && ch <= 'z') {

            int index = ch - 'a';

            if (!letters[index]) {

                letters[index] = true;

                count++;

            }

        }

    }

    if (count == 26) {

        System.out.println("The sentence is pangram");

    } else {

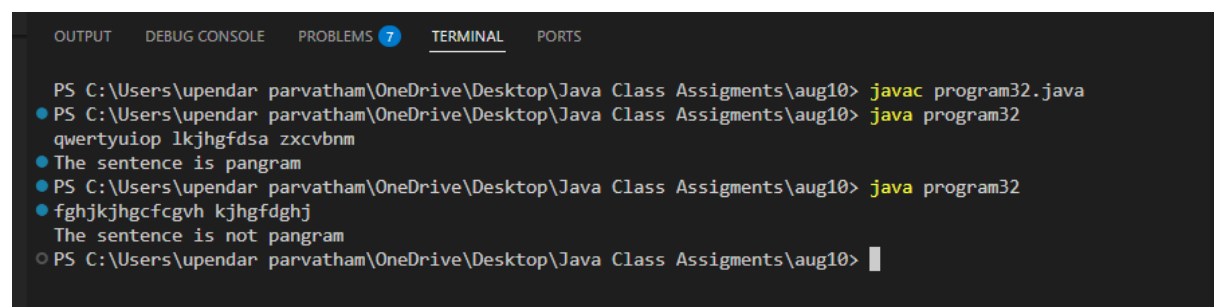
        System.out.println("The sentence is not pangram");

    }

}

```

Output:



The screenshot shows a terminal window with the following commands and output:

```

PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> javac program32.java
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program32
qwertyuiop lkjhgfdsa zxcvbnm
The sentence is pangram
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program32
fghjkhgfcgvh kjhgfghj
The sentence is not pangram
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10>

```

33. //Write a program to find the factorial of numbers from 1 to 10.

```

public class program33 {

    public static int fact(int num){

        if(num==0) return 1;

        return num*fact(num-1);

    }

    public static void main(String[] args) {

        for(int i =1; i <=10;i++){

            int fact = fact(i);

            System.out.println("fact of "+i+" is "+fact);

        }

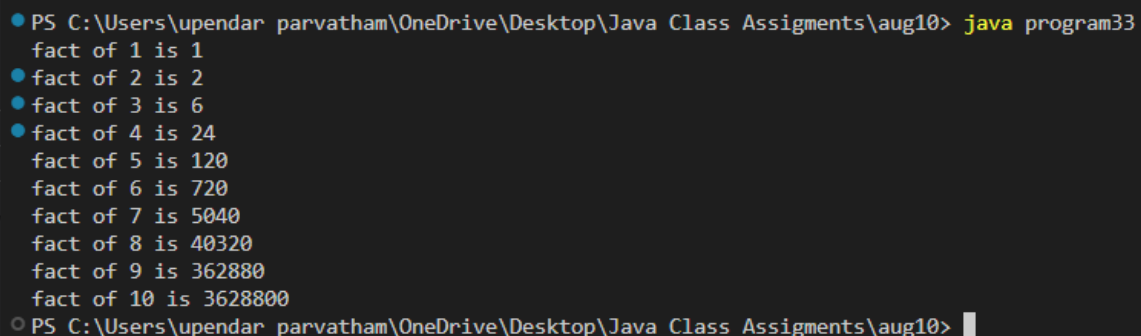
    }

}

```

Output:

=



```

PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assigments\aug10> java program33
fact of 1 is 1
fact of 2 is 2
fact of 3 is 6
fact of 4 is 24
fact of 5 is 120
fact of 6 is 720
fact of 7 is 5040
fact of 8 is 40320
fact of 9 is 362880
fact of 10 is 3628800
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assigments\aug10>

```

34. //Write a program to print the odd numbers between 1 and 100.

```

public class program34 {

    public static void main(String[] args) {

        for (int i = 1; i <= 100; i = i + 2) {

            System.out.println(i);

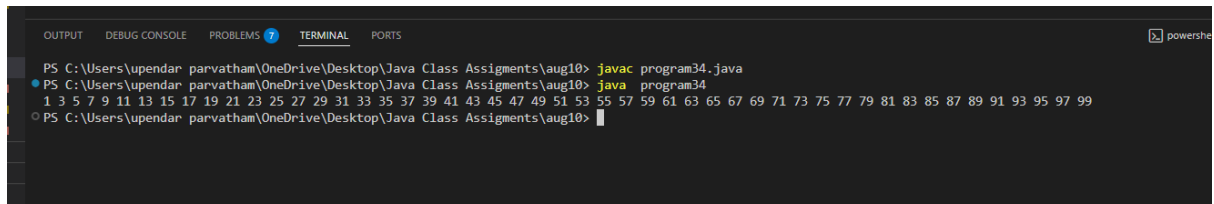
        }

    }

}

```

}



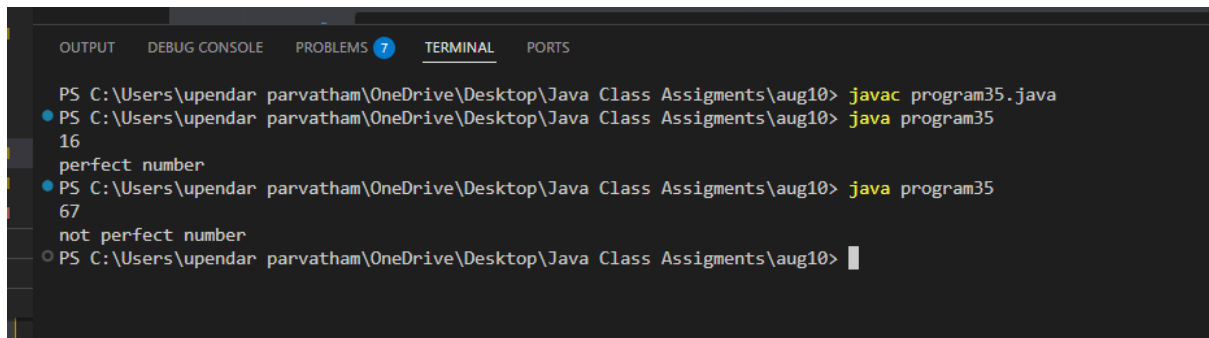
A screenshot of a Windows command prompt terminal window. The title bar shows 'powerShell'. The terminal has tabs for 'OUTPUT', 'DEBUG CONSOLE', 'PROBLEMS' (with a blue icon and the number 7), 'TERMINAL' (selected), and 'PORTS'. The command history shows: 'PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> javac program34.java', 'PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program34', and '1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45 47 49 51 53 55 57 59 61 63 65 67 69 71 73 75 77 79 81 83 85 87 89 91 93 95 97 99'. The current prompt is 'PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10>'.

35. //perfect square //4 9 16 25 64...

```
import java.util.*;
```

```
public class program35 {  
    public static void main(String[] args) {  
        Scanner scanner = new Scanner(System.in);  
        int num = scanner.nextInt();  
        if (num < 0) {  
            System.out.println("Negative numbers cannot ");  
        }  
        int sqrt = (int) Math.sqrt(num);  
        if (sqrt * sqrt == num) {  
            System.out.println("perfect number");  
        } else {  
            System.out.println("not perfect number");  
        }  
    }  
}
```

Output:



```
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> javac program35.java
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program35
16
perfect number
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program35
67
not perfect number
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> 
```

//36. write a program to find the sum of digits of a given number until the sum its single digit

```
import java.util.*;
```

```
public class program36 {
    public static int sigleDigit(int num) {
        if (num % 9 == 0)
            return 9;
        return (num % 9);
    }

    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        int num = scanner.nextInt();
        System.out.print(sigleDigit(num));
    }
}
```

Output:

```
OUTPUT  DEBUG CONSOLE  PROBLEMS 7  TERMINAL  PORTS

PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> javac program36.java
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program36
456
6
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> java program36
90
9
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\aug10> 
```

.....

Patterns

NumberPatterns:

Problem 1;

// n = 5

// 1

// 1 2

// 1 2 3

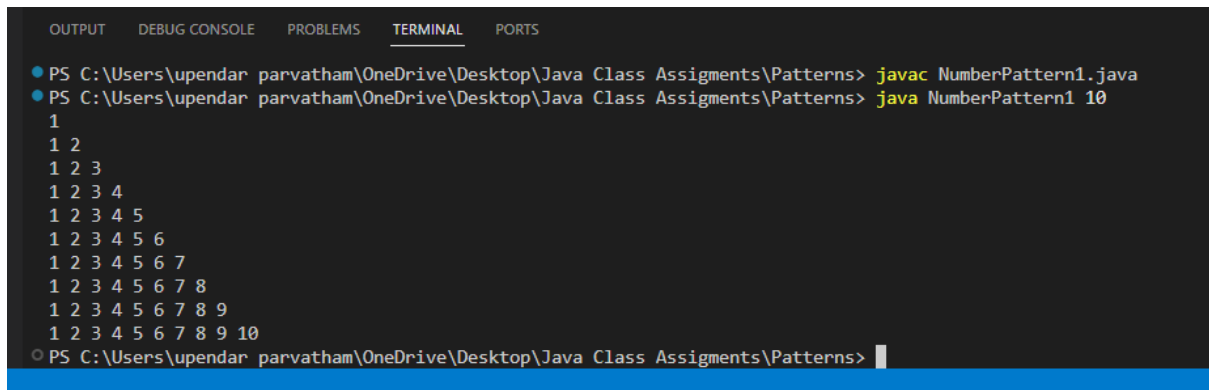
// 1 2 3 4

// 1 2 3 4 5

```
public class NumberPattern1 {
    public static void main(String[] args) {
        int n = Integer.parseInt(args[0]);
        int count=1;
        for(int i =1 ;i <= n ;i++){
            for(int j =1 ; j <= i ;j++){
                System.out.print(count+" ");
                count++;
            }
            count=1;
            System.out.println();
        }
    }
}
```

```
}  
}
```

Output:



```
OUTPUT  DEBUG CONSOLE  PROBLEMS  TERMINAL  PORTS  
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\Patterns> javac NumberPattern1.java  
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\Patterns> java NumberPattern1 10  
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  
1 2 3 4 5 6 7 8  
1 2 3 4 5 6 7 8 9  
1 2 3 4 5 6 7 8 9 10  
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\Patterns>
```

Problem2:

```
// n = 5
```

```
// 1
```

```
// 2 2
```

```
// 3 3 3
```

```
// 4 4 4 4
```

```
// 5 5 5 5 5
```

```
public class NumberPattern2 {  
    public static void main(String[] args) {  
        int n = Integer.parseInt(args[0]);  
        int count;  
        for(int i = 1 ; i <= n ;i++){  
            count = i;  
            for(int j =1 ; j <= i; j++){  
                System.out.print(count+" ");  
            }  
            System.out.println();  
        }  
    }  
}
```

```
}
```

Output:

```
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\Patterns> java NumberPattern2 10
1
2 2
3 3 3
4 4 4 4
5 5 5 5 5
6 6 6 6 6 6
7 7 7 7 7 7 7
8 8 8 8 8 8 8 8
9 9 9 9 9 9 9 9 9
10 10 10 10 10 10 10 10 10 10
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\Patterns>
```

Problem 3:

```
// n = 5
```

```
//    1
```

```
//   1 2
```

```
//  1 2 3
```

```
// 1 2 3 4
```

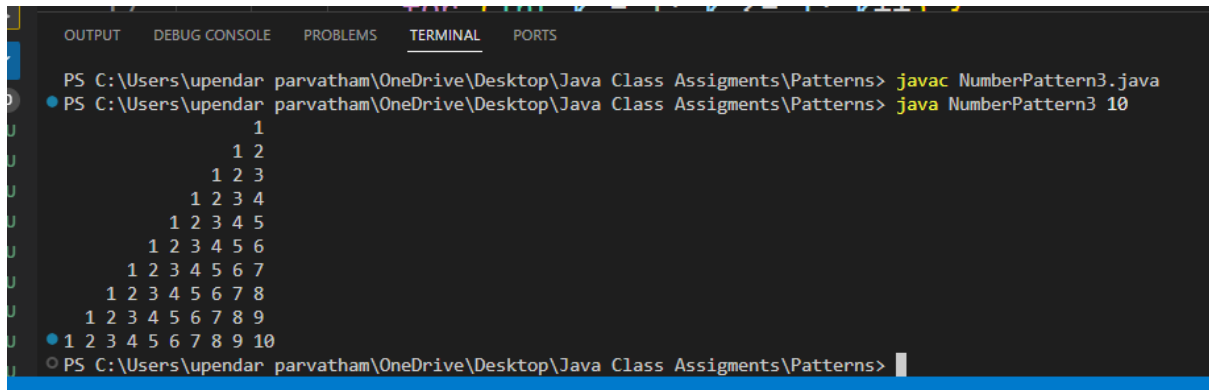
```
// 1 2 3 4 5
```

```
public class NumberPattern3 {
    public static void main(String[] args) {
        int n = Integer.parseInt(args[0]);
        int count;
        for(int i = 1; i <= n ;i++){
            for(int j = 1; j <= n-i;j++){
                System.out.print(" ");
            }
            count=1;
            for(int k = 1 ; k <=i ;k++){
                System.out.print(count+" ");
                count++;
            }
            System.out.println();
        }
    }
}
```



```
}
```

Output:



```
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\Patterns> javac NumberPattern3.java
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\Patterns> java NumberPattern3 10
    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
1 2 3 4 5 6 7 8
1 2 3 4 5 6 7 8 9
1 2 3 4 5 6 7 8 9 10
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\Patterns>
```

Problem 4:

```
// n = 5
```

```
// 1 2 3 4 5
```

```
// 1 2 3 4
```

```
// 1 2 3
```

```
// 1 2
```

```
// 1
```

```
public class NumberPattern4 {
    public static void main(String[] args) {
        int n = Integer.parseInt(args[0]);
        int count=1;
        for(int i = n; i >= 1 ;i--){
            for(int j = 1; j <= n-i;j++){
                System.out.print(" ");
            }

            for(int k = 1; k <= i;k++){
                System.out.print(count+" ");
                count++;
            }

            count=1;
        }
    }
}
```

```

        System.out.println();
    }
}
}

```

Output:

```

PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\Patterns> javac NumberPattern4.java
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\Patterns> java NumberPattern4 10
1 2 3 4 5 6 7 8 9 10
 1 2 3 4 5 6 7 8 9
   1 2 3 4 5 6 7 8
    1 2 3 4 5 6 7
     1 2 3 4 5 6
      1 2 3 4 5
       1 2 3 4
        1 2 3
         1 2
          1
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\Patterns>

```

Problem 5

//pattern 5

// n = 5

// 1 2 3 4 5

// 1 2 3 4

// 1 2 3

// 1 2

// 1

```

public class NumberPattern5 {
    public static void main(String[] args) {
        int n = Integer.parseInt(args[0]);
        int count=1;
        for(int i =n ; i >=1;i--){
            for(int j = 1 ;j <= i ;j++){
                System.out.print(count+" ");
                count++;
            }
        }
    }
}

```

```

        count=1;

        System.out.println();

    }

}

}

```

Output:

```

count=1
OUTPUT  DEBUG CONSOLE  PROBLEMS  TERMINAL  PORTS
PS C:\Users\upendar\parvatham\OneDrive\Desktop\Java Class Assignments\Patterns> javac NumberPattern5.java
PS C:\Users\upendar\parvatham\OneDrive\Desktop\Java Class Assignments\Patterns> java NumberPattern5 10
1 2 3 4 5 6 7 8 9 10
1 2 3 4 5 6 7 8 9
1 2 3 4 5 6 7 8
1 2 3 4 5 6 7
1 2 3 4 5 6
1 2 3 4 5
1 2 3 4
1 2 3
1 2
1
PS C:\Users\upendar\parvatham\OneDrive\Desktop\Java Class Assignments\Patterns>

```

//pattern 6

// n= 7

// 1 2 3 4 5 6 7

// 1 2 3 4 5 6

// 1 2 3 4 5

// 1 2 3 4

// 1 2 3

// 1 2

// 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

public class NumberPattern6 {

```

public static void main(String[] args) {
    int n = Integer.parseInt(args[0]);
    int count=1;
    for(int i = n ; i >= 1; i--){
        for(int j = 1; j <= i ;j++){
            System.out.print(count+" ");
            count++;
        }
        count=1;
        System.out.println();
    }
    count=1;
    for(int i =2 ; i<=n;i++){
        for(int j = 1 ; j <= i;j++){
            System.out.print(count+" ");
            count++;
        }
        count=1;
        System.out.println();
    }
}

```

Output:

```
OUTPUT  DEBUG CONSOLE  PROBLEMS  TERMINAL  PORTS

PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\Patterns> javac NumberPattern5.java
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\Patterns> javac NumberPattern6.java
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\Patterns> java NumberPattern6 10
1 2 3 4 5 6 7 8 9 10
1 2 3 4 5 6 7 8 9
1 2 3 4 5 6 7 8
1 2 3 4 5 6 7
1 2 3 4 5 6
1 2 3 4 5
1 2 3 4
1 2 3
1 2
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
1 2 3 4 5 6 7 8
1 2 3 4 5 6 7 8 9
1 2 3 4 5 6 7 8 9 10
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\Patterns> 
```

//pattern 7

// n = 7

// 1 2 3 4 5 6 7

// 1 2 3 4 5 6

// 1 2 3 4 5

// 1 2 3 4

// 1 2 3

// 1 2

// 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

public class NumberPattern7 {

public static void main(String[] args) {

int n = Integer.parseInt(args[0]);

int spaces = 0, count = 1;

for (int i = n; i >= 1; i--) {

```

        for (int j = 1; j <= spaces; j++) {
            System.out.print(" ");
        }
        spaces++;
        count = 1;
        for (int k = 1; k <= i; k++) {
            System.out.print(count + " ");
            count++;
        }
        System.out.println();
    }
    spaces = n - 2;
    for (int i = 2; i <= n; i++) {
        for (int j = 1; j <= spaces; j++) {
            System.out.print(" ");
        }
        spaces--;
        count = 1;
        for (int k = 1; k <= i; k++) {
            System.out.print(count + " ");
            count++;
        }
        System.out.println();
    }
}

```

Output:

```
OUTPUT  DEBUG CONSOLE  PROBLEMS  TERMINAL  PORTS

● PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\Patterns> javac NumberPattern7.java
● PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\Patterns> java NumberPattern7 10
 1 2 3 4 5 6 7 8 9 10
 1 2 3 4 5 6 7 8 9
 1 2 3 4 5 6 7 8
 1 2 3 4 5 6 7
 1 2 3 4 5 6
 1 2 3 4 5
 1 2 3 4
 1 2 3
 1 2
 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
 1 2 3 4 5 6 7 8
 1 2 3 4 5 6 7 8 9
 1 2 3 4 5 6 7 8 9 10
○ PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\Patterns> 
```

.....

Star Patterns

//1.pattern

// * n==5

// ***

// *****

// *****

// *****

public class StarPattern1{

public static void main(String[] args){

int n = Integer.parseInt(args[0]);

for(int i=1; i <= n;i++){

for(int j = 1; j <= n-i;j++){

System.out.print(" ");

}

for(int k = 1 ; k <=i ;k++){

System.out.print("* ");

}

```

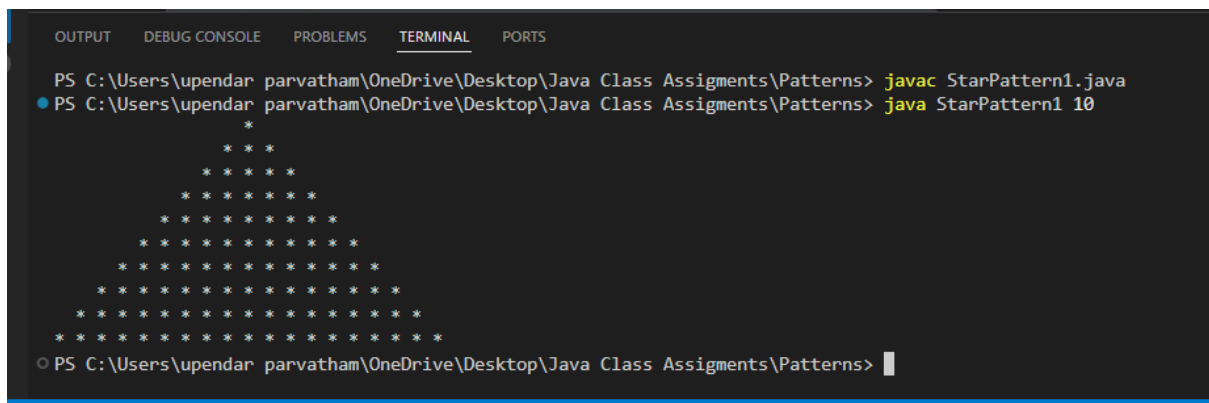
        for(int m = 1 ; m < i-0;m++){
            System.out.print("* ");
        }

        System.out.println();
    }

}
}

```

Output:



The screenshot shows a terminal window with the following content:

```

PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\Patterns> javac StarPattern1.java
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\Patterns> java StarPattern1 10

```

The output of the program is a star pattern with 10 rows:

```

      *
     * *
    * * *
   * * * *
  * * * * *
 * * * * * *
* * * * * * *
 * * * * * * *
  * * * * * * *
   * * * * * * *
    * * * * * * *
     * * * * * *
      * * * * *
       * * * *
        * * *
         * *
          *

```

The terminal prompt is now ready for the next command.

```

//pattern 2
// n = 5
// *
// * *
// * * *
// * * * *
// * * * * *

public class StarPattern2 {
    public static void main(String[] args) {
        int n = Integer.parseInt(args[0]);
        for(int i = 1; i <= n ;i++){
            for(int j = 1 ; j<= i ;j++){

```



```

        System.out.print("* ");
    }

    System.out.println();
}
}
}

```

Output:

```

PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\Patterns> javac StarPattern2.java
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\Patterns> java StarPattern2 10
*
* *
* * *
* * * *
* * * * *
* * * * *
* * * * *
* * * * *
* * * * *
* * * * *

```

3. //pattern 3

```

// n = 5;
//      *
//      * *
//      * * *
//      * * * *
//      * * * * *

```

```

public class StarPattern3 {
    public static void main(String[] args) {
        int n = Integer.parseInt(args[0]);
        for(int i=1 ; i <= n ; i++){
            for(int j = 1 ; j <= n-i ;j++){
                System.out.print(" ");
            }
        }
    }
}

```

```

    }

    for(int k = 1 ; k <= i; k++){

        System.out.print("* ");

    }

    System.out.println();

}

}

}

```

Output:

```

OUTPUT  DEBUG CONSOLE  PROBLEMS  TERMINAL  PORTS
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\Patterns> javac StarPattern3.java
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\Patterns> java StarPattern3 10
      *
     * *
    * * *
   * * * *
  * * * * *
 * * * * * *
* * * * * * *
* * * * * * * *
* * * * * * * * *
* * * * * * * * * *
* * * * * * * * * * *
* * * * * * * * * * * *
* * * * * * * * * * * * *
* * * * * * * * * * * * * *
* * * * * * * * * * * * * * *
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\Patterns>

```

//pattern 4

// n == 5

// * * * * *

// * * * *

// * * *

// * *

// *

public class StarPattern4 {

public static void main(String[] args) {

int n = Integer.parseInt(args[0]);

for (int i = n; i >= 1; i--) {

```

        for (int j = 1; j <= n - i; j++) {

            System.out.print(" ");

        }

        for (int k = i; k >= 1; k--) {

            System.out.print("* ");

        }

        System.out.println();

    }

}
}

```

Output:

```

PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\Patterns> javac StarPattern4.java
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\Patterns> java StarPattern4 10
      * * * * *
     * * * * *
    * * * * *
   * * * * *
  * * * * *
 * * * * *
* * * * *
 * * *
  * *
   *
    *
     *
      *
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\Patterns>

```

//pattern 5

// n = 5

// * * * * *

// * * * *

// * * *

// * *

// *

```
public class StarPattern5 {
```

```
    public static void main(String[] args) {
```

```

int n = Integer.parseInt(args[0]);

for (int i = n; i >= 1; i--) {
    for (int j = 1; j <= i; j++) {
        System.out.print("* ");
    }
    System.out.println();
}
}
}

```

Output:

```

OUTPUT  DEBUG CONSOLE  PROBLEMS  TERMINAL  PORTS

PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\Patterns> javac StarPattern5.java
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\Patterns> java StarPattern5 10
 * * * * *
  * * * * *
   * * * *
    * * *
     * *
      *
       *
        *
         *
          *
           *

```

//pattern 6

// diamond

// n = 5

```

//      *
//     * *
//    * * *
//   * * * *
//  * * * * *
// * * * * *
// * * * *
//  * * *
//   * *
//    *

```

```

public class StarPattern6 {
    public static void main(String[] args) {
        int n = Integer.parseInt(args[0]);
        int spaces = n - 1;
        for (int i = 1; i <= n; i++) {
            for (int j = 1; j <= spaces; j++) {
                System.out.print(" ");
            }
            spaces--;
            for (int k = 1; k <= i; k++) {
                System.out.print("* ");
            }
            System.out.println();
        }
        spaces = 1;
        for (int i = n - 1; i >= 1; i--) {
            for (int j = 1; j <= spaces; j++) {
                System.out.print(" ");
            }
            spaces++;
            for (int k = 1; k <= i; k++) {
                System.out.print("* ");
            }
            System.out.println();
        }
    }
}

```

Output:


```

        System.out.println();
    }
}
}

```

Output:

```

OUTPUT  DEBUG CONSOLE  PROBLEMS  TERMINAL  PORTS
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\Patterns> javac StarPattern7.java
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\Patterns> java StarPattern7 10
* * * * *
*   *   *
*   *   *
*   *   *
*   *   *
*   *   *
*   *   *
*   *   *
* * * * *
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\Patterns>

```

//pattern 8

//hallow diamond

// n= 5;

// *

// * *

// * *

// * *

// * *

// * *

// * *

// * *

// *

```
public class StarPattern8 {
```

```
    public static void main(String[] args) {
```

```
        int n = Integer.parseInt(args[0]);
```

```
        int spaces = n - 1;
```

```

int spaces2 = 0;
for (int i = 1; i <= n; i++) {
    for (int j = 1; j <= spaces; j++) {
        System.out.print(" ");
    }
    spaces--;
    System.out.print("*");
    for (int k = 1; k <= spaces2; k++) {
        System.out.print(" ");
    }
    spaces2 += 2;
    if (i != 1) {
        System.out.print("* ");
    }
    System.out.println();
}

spaces = 1;
spaces2 = (n - 2) * 2;
for (int i = 1; i <= n - 1; i++) {
    for (int j = 1; j <= spaces; j++) {
        System.out.print(" ");
    }
    spaces++;
    System.out.print("*");
    for (int k = 1; k <= spaces2; k++) {
        System.out.print(" ");
    }
    spaces2 -= 2;
    if (i != n - 1) {
        System.out.print("*");
    }
}

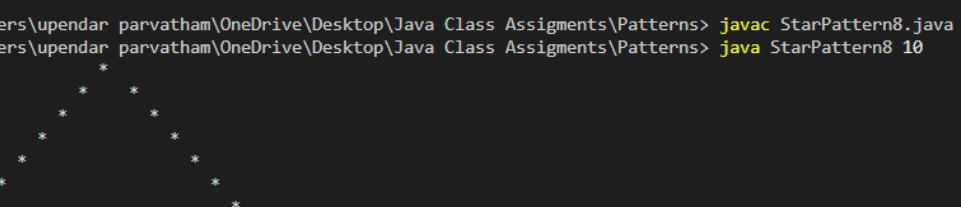
```



```
        System.out.println();
    }
}
}
```

Output:

```
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\Patterns> javac StarPattern8.java
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\Patterns> java StarPattern8 10
```



A large circle of asterisks is displayed on a dark background. The circle is composed of many small white asterisks arranged in a circular pattern. The circle is centered in the middle of the terminal window. The asterisks are arranged in a way that they form a solid, circular shape. The circle is approximately 100 units in diameter. The asterisks are arranged in a way that they form a solid, circular shape. The circle is centered in the middle of the terminal window. The asterisks are arranged in a way that they form a solid, circular shape. The circle is centered in the middle of the terminal window.

```
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\Patterns>
```