

1. write a program to print the following pattern.

```
import java.util.Scanner;
public class patternPrinter {
    public static void main(String[] args) {
        Scanner input = new Scanner(System.in);
        char c = input.next().charAt(0);
        int n = input.nextInt();
        for (int i = 1; i <= n; i++) {
            System.out.println(String.valueOf(c + " ").repeat(i).trim());
        }
    }
}
```

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30/7/2024

Input: *

3

Output: *

**

2. find the year of the given data is leap year or not

```
import java.util.Scanner;
public class leapYearChecker {
    public static void main(String[] args) {
        Scanner input = new Scanner(System.in);
        int year = Integer.parseInt(input.next().split("/")[2]);
    }
}
```

if ($(\text{year} \% 4 == 0 \& \& \text{year} \% 100 \neq 0) \text{ || } (\text{year} \% 400 == 0)$)

System.out.print("Given year is a leap year");

else

```
system.out.print ("Given year is no leap year");
```

```
3  
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```

3. find the number of factors for the given number

```
import java.util.Scanner;
```

```
public class FactorCounter <
```

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

```
int n = new Scanner (System.in).nextInt(); int factors  
= 0;
```

```
for (int i = 1; i <= n; i++) if (n % i == 0) factors++;
```

```
System.out.println ("Number of factors = " + factors);
```

```
3  
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```

4. write a program to print the given number is perfect number or not?

```
import java.util.Scanner;
```

```
public class PerfectNumberCounter <
```

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

```
int int n = new Scanner (System.in).nextInt();
```

```
num = 0;
```

```
for (int i = 1; i < n; i++) if (n % i == 0) num += i;
```

```
for  
4 if (n == sum) {
```

```
    system.out.print ("it's a perfect number");
```

```
5 } else {
```

```
    system.out.print ("it's not a perfect number");
```

```
6 }
```

```
7 }
```

```
8 } write a program to print the number of vowels  
in the given statement?
```

```
import java.util.Scanner;
```

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

```
    int vow = 0;
```

```
    for (char c : new Scanner (System.in).nextLine()  
        .toCharArray ())
```

```
        if ("AEIOUaeiou".indexOf (c) == 1) vow++;
```

```
        system.out.print ("number of vowels = " + vow);
```

```
    }
```

```
8 }
```

```
9 . write a program to print consonants and vowels  
separately in the given word.
```

```
import java.util.Scanner;  
public class consonant_vowelseparator {  
    public static void main(String[] args) {  
        Scanner input = new Scanner(System.in);  
        String name = input.nextLine();  
        vowels = "";  
        consonants = "";  
        for (char c : name.toCharArray())  
            if ("AEIOUaeiou".indexOf(c) == -1) vowels += c + " ";  
            else consonants += c + " ";  
        System.out.println("consonants: " + consonants.trim());  
        System.out.println("vowels: " + vowels.trim());  
    }  
}
```

→ write a program to print the fibonacci series.

```
import java.util.Scanner;  
public static void main(String[] args) {  
    Scanner input = new Scanner(System.in);  
    int n = input.nextInt(), a1 = 0, a2 = 1;  
    for (int i = 0; i < n; i++) {  
        System.out.print(a1 + " ");  
        a1 = a1 + a2;  
        a2 = a1 - a2;  
    }  
}
```

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* write a program to find the square cube of the given decimal number.

```
import java.util.Scanner;
public class squareCube {
    public static void main (String [] args) {
        float n = new Scanner (System.in).nextfloat ();
        System.out.print ("square number : " + (n * n));
        System.out.print ("cube number : " + (n * n * n));
    }
}
```

* program to find the frequency of each element in the array.

```
import java.util.HashMap;
import java.util.Map;
public class frequencyCounter {
    public static void main (String [] args) {
        int [] arr = {1, 2, 8, 3, 2, 3, 2, 5, 1};
    }
}
```

```
map = integer; integer > freq = new hashmap >> ();
for (int num : a) freq.put (num, freq.get (or
default (num, 0)) + 1);
freq.forEach (key, value) : system.out.print (key + " "
+ value);
```

3.
3.

ie write a program to print the given number is perfect number or not?

```
import java.util.Scanner;
public class perfectNumberChecker {
public static void main (String [] args) {
int n = new Scanner (System.in).nextInt (), sum = 0;
for (int i = 1; i < n; i++)
if (n % i == 0) sum += i;
if (n == sum)
System.out.print ("It is a perfect number");
else
System.out.print ("It is not a perfect number");
}
```

3.