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JAVA
PROGRAMMING

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.nextln();
        For (int i = 1 ; i <= n ; i++)
        {
            system.out.Println(string.value of c + " ").repeat (i)
                                                    .trim());
        }
    }
}
```

2) Find the year of the given data is leap year or not.

```
import java.util.scanner;
Public class leapyear checker {
    Public static void main (String [] args) {
        scanner input = new scanner (system.in);
        int year = integer.parseln(input.next().split ("/") [2]);
        If (year % 4 == 0 && year % 100 != 0) || (year % 400 == 0)) {
        system.out.Println(" Given year is leap year");
        } else {
            system.out.Println(" Given is not leap year");
        }
    }
}
```

3) Find the number of factors for the given number.

```java
import java.util.Scanner;
public class factorcounter {
    public static void main(String [] args) {
        int n = new Scanner(System.in).nextInt(), factors = 0;
        for(int i = 1; i <= n; i++) if (n%i == 0) factors++;
        System.out.println("Number of factors =" + factors);
    }
}
```

4) Perfect number or not

```java
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.println("Its a perfect number");
        } else {
            System.out.println("Its not a perfect number");
        }
    }
}
```

5) Print the num of vowels of given statement

```java
import java.util.scanner;
public class Vowelcounter {
    Public static void main (string [] args) {
        int vows = 0;
        For (char c : new scanner (system.in).nextLine ().tochar Array ())]
        If ("AEIOU aeiou". Index OF (c) ! = -1) vow ++;
        system.out.println (" Number of vowels = " + vow);
    }
}
```

6) Write a program to print consonants & vowels seperately in the given word.

```java
import java.util.scanner;
Public class Consonant Vowel Separator {
    Public static void main (string [] args) {
        scanner input = new scanner (system.in);
        string name = input.nextLine(), vowels = "", consonants = "";
        For (char c : name.tocharArray ())
            IF ("AEIOU aeiou" index OF (c) ! = -1) vowels += c + " ";
            else consonants += c + " ";
        system.out.Println ("consonants : " + consonants.trim ());
        system.out.Println ("vowels : " + vowels.trim ());
    }
}
```

7) Fibonacci series

```java
impart Java.util.scanner;
Public class fibonacciSeries{
    Public static Vaid 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.println (a1 + "");
            a2 = a1 + (a1 = a2);
        }
    }
}
```

8) write a program to find the square, cube of the given decimal number.

```java
import java.util.scanner;
Public class square cube {
    Public static vaid main(string [] args) {
        float n = new scanner (system.in).nextFloat();
        system.out.Println ("Square number:" + (n *n));
        system.out.Println (" cube Number:" + (n *n * n));
    }
}
```

29) Find the frequency of each element in the array.

```java
import java.util.scanner;
Public class FrequencyCounter {
    Public static void main(String [] args) {
        int [] a = {1,2,8,3,2,2,2,5,1};
        map < integer; integer> Freq = new Hashmap<>();
        For(int num :a) Freq.put(num, freq.getOrdefault(num,0)
                                            +1);
        Freq.for.Each((key,value) -> system.out.Println
                                    (key + "|" + value));
    }
}
```

30) Perfect number or not.

```java
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.Println("It is a perfect number");
        else
            system.out.Println("It is not a perfect number:");
    }
}
```