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1. Sum of Natural number till n.

```java
Public class SumofNaturalnum {
    Public static void main (String [] args)
    {
        int i , num =10, Sum = 0;
        for (i =1; i<= num ; ++i) {
            Sum = Sum +i ; }
        System. out. println ("Sum of natural number ="+Sum);
    }}
```

Output:-

Sum of natural number = 55

2 Prime number

```java
Public class Prime {
    Public static void main (String [] args) {
        int i, m =0, flag =0;
        int n =3;
        m = n/2;
        if (n == 0 || n==1) {(n +" is not Prime number")
    } else {
            for (i=2; i<= m; i++) {
                if (n%. i== 0) {
        System. out. println (n +"is not Prime number");
                flag =1;
                break; }}
        if (flag == 0) { System. out. println (n +" is Prime
            number "); } } }
```

Output:-

3 is Prime number.

3) Factorial of number.

```java
class Factorial {
    Public static void main (String [] args) {
        int i, fact =1;
        int num = 5;
        for (i =1, i<= num ; i++) {
            fact = fact * i; }
        System. out. println (" Factorial = " + fact); }}
```

Output -

Factorial= 120

4) Reverse the number

```java
class Reverse {
    Public static void main (String [] args) {
        int number = 987654 , reverse =0;
        while (num! =0) {
            int rem = num %10;
            rev = rev * 10 + rem;
            num = num /10; }
        System. out. println (" Reversed = " + rev); }}
```

Output -

Reversed = 456789

5) Armstrong number.

```java
class Armstrong {
    Public static boolean isArm (int num) {
        int temp, digit, Sum = 0;
        temp = num;
        while (temp! = 0) {
            digit = temp %10;
            Sum += Math. pow (digit, String. valueof
(num). length ());
            temp /=10; }
        return num == Sum; }
    Public static void main (String [] args) {
        int num =153;
        if (isarm (num)) {
        System. out. println (sum +" is Armstrong number ");
        } else {
        System. out. println (num +" is not Armstrong number");
    }}}
```

Output :-

153 is Armstrong number.

6) happy number

```java
class Happy {
    Public static int isHappy (int num) {
        int rem = 0, Sum =0;
        while (num >0) {
            rem = num %. 10;
            Sum = Sum +(rem * rem);
            num = num /10; }
```

```java
        return sum; }
    public static void main (String[] args){
        int num = 82;
        int result = num;
        while (result != 1 && result != 4){
            result = isHappy (result); }
        if (result == 1)
    System.out.println (num +" is happy number");
    else if (result == 4)
        System.out.println (num +" is not happy
    number "); }}
```

output:-
82 is a happy number.

7) Palindrome

```java
class Palindrome {
    public static void main (String[] args){
        int r, sum = 0, temp;
        int n = 454;
        temp = n;
        while (n > 0){
            r = n % 10;
            sum = (sum * 10) + r;
            n = n / 10; }
        if (temp == sum)
    System.out.println ("palindrome number");
    else
    System.out.println ("not palindrome "); }}
```

output
Palindrome number.

8) Sum of digit.

```java
import java.util.Scanner;
class Sum of Digit {
    public static void main (String[] args){
        int num, digit, sum = 0;
        Scanner sc = new Scanner (System.in);
        System.out.println ("Enter the number:");
        num = sc.nextInt ();
        while (num > 0){
            digit = num % 10;
            sum = sum + digit;
            num = num / 10; }
        System.out.println (" Sum of digits :" + sum); }}
```

output:-
Enter the number = 876
Sum of digits = 21

9) all the numbers divisible by 5 or 7 for a given number.

```java
import java.util.*;
class main {
    static int num (int n){
        for (int j = 1; j < n+1; j++){
            if (j % 5 == 0 || j % 7 == 0)
        System.out.print (j +" ");
        return n; }
    public static void main (String args[]){
        int N = 50;
        num (N); }}
```

output.
5, 7, 10, 14, 15, 20, 21, 25, 28, 30, 35, 40,
42, 45, 49, 50

10) Perfect number.

```java
import java.util.Scanner;
class Perfect {
    public static void main (String args[]){
        long n, sum = 0;
        Scanner sc = new Scanner (System in);
        System.out.print (" Enter the number : ");
        n = sc.next long ();
        int i = 1;
        while (i <= n/2){
            if (n % i == 0){
                sum = sum + i; }
                i++; }
        if (sum == n){
        System.out.println (n + " is Perfect number"); }
        else
            System.out.println (n + " is not perfect number "); }}
```

output:-
Enter the number = 28
28 is a perfect number.

11) Fibonacci series.

```java
class Fibonacci {
    public static void main (String[] args){
        int n1 = 0, n2 = 1, n3, i, count = 10;
        System.out.print (n1 + " " + n2);
        for (i = 2; i < count; i++){
            n3 = n1 + n2;
            System.out.print (" " + n3);
            n1 = n2;
            n2 = n3; }}}
```

and GCD

```java
import java.io.*;
class main {
    public static int gcd(int a, int b){
        if (b==0)
            return a;
        else
            return gcd(b, a % b); }

    static int lcm (int a, int b, int gcd value){
        return Math.abs (a* b) / gcd value ; }

    public static void main (String[] args){
        int a = 20, b=30, gcd value;
        gcd value = gcd (a,b);
        System.out.println (" GCD = " + gcd value );
        System.out.println ("LCM =" + lcm(a, b ,gcd-value)); }}
```

output -
GCD = 10
LCM = 60

13 Decimal to binary

```java
import java.io.*;
class main {
    static void dectobin (int n){
        int[] binnum = new int [1000];
        int i = 0;
        while (n>0){
            binnum [i] = n % 2;
            n = n /2;
            i++;
```

```java
        for (int j = i-1; j >= 0; j--)
            System.out.print (binnum [j]); }

    public static void main (String[] args){
        int n =17;
        System.out.println ("Decimal-" +n);
        System.out.print ("Binary-");
        dec To bin (n);}}
```

output -
Decimal – 17
Binary – 10001

14 Binary to Decimal

```java
public class Bintodec {
    public static void main (String[] args){
        System.out.println (integer. parseInt ("1010", 2));
}
```

output -
10

15 Celsius To Jahbenheit

```java
class temperature {
    public static void main (String args[])
    { float Jahrenheit, Celsius;
        Celsius =13;
        Jahrenheit = (( Celsius +9)/5) + 32;
    System.out.println ("Temperature in Jahrenheit"
    + Jahrenheit ); }}
```

output:-
Temperature in Jahrenheit = 55.4.

16 Jahrenheit to Celsius

```java
public class Celsius {
    public static void main (String [] args){
        float J, c ;
        J=43;
        c = ((J -32)* 5)/9;
    System.out.println ("Temperature=" + c );}}
```

output:-
Temperature = 6.1111

17 Sum of odd and even number

```java
import java.io.*;
public class main {
    public static void main (String[] args){
        int n = 8;
        int even sum =0;
        int odd sum =0;
        for (int i = 1; i <= 2* n; i++){
            if ((i % 1) == 0)
                even sum + =i; }
            System.out.println ("Sum of even number"
            + even sum );
        System.out.println (" Sum of odd number ="+ odd sum);
}}
```

output:-
Sum of even number = 72
Sum of odd number =64.

(18) Leep year

```
import java.io.*;
import java.util.Scanner;
Public class main {
Public static void main (String[] args) {
int year = 2012
Scanner scn = new Scanner (System.in);
year = scn.nextInt ();
if ((year % 400 == 0) || ((year % 4 == 0) &&
(year % 100 ! = 0))) {
System.out.println (year + " leap year"); }
else {
System.out.println (year + " non-leap year");}}}
```

Output :-
2012
2012 : leap year.

4) Eligible to vote

```
import java.util.Scanner;
Public class voting {
Public static void main (String[] args) {
int age;
Scanner sc = new Scanner (System.in);
System.out.print ("Enter your age =");
age = sc.nextInt ();
if (age >= 18) {
System.out.println ("you are eligible for vote");}
else {
System.out.println ("you are not eligible for vote");
}}
```

Output :-
Enter your age = 19
you are eligible for vote.

20. Sum of square root & cubic root of number.

```
import java.lang.Math;
Class main {
Public static void main (String[] args) {
double num = 64.0;
double square = Math.sqrt (num);
double cubic = Math.cbrt (num);
double sum = square + cubic;
System.out.println (" sum = " + sum);}}
```

Output :-
Sum = 12.0

21. vowels and consonant

```
Class vowel {
Public static void main (String[] args) {
char ch = 'i';
if (ch == 'a' || ch == 'e' || ch == 'i' ||
ch == 'o' || ch == 'u')
System.out.println (ch + " is a vowel");
else
System.out.println (ch + " is a consonant");
}
```

Output :-
i is a vowel.

(5) armstrong number

```
Class Armstrong {
Public static void main (String[] args) {
int num = 153;
int temp = num;
int sum = 0;
int sem;
while (temp != 0) {
sem = temp % 10;
sum += Math.pow (sem, 3);
temp /= 10; }
if (num == sum) {
System.out.println (num + " is an armstrong
number");
else {
System.out.println (num + " is not armstrong
number"); }}
```

Output :-
153 is armstrong number.

(9) Divisible by 5 and 7.

```
Class main {
Public static void main (String[] args) {
int n = 50;
for (int i = 1; i <= n; i++) {
if (i % 5 == 0 && i % 7 == 0) {
System.out.println (i); }}}
```

Output :-
5, 7, 16, 14, 15, 20, 21, 25, 28, 30, 35, 40,
42, 45, 49, 50.