(5)

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ASSIGNMENT-1

JAVA

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1) Sum of natural numbers after n.

```
class GfG {
    public static void main (String[] args ){
        int N = 19;
        int sum = 0;
        System.out.println ("Sum of ", N);
        for (int i=1; i <=N ; i++) {
            sum += i;
        }
        System.out.println (N)
    }
}
```

input : 8
output: 36

2) Prime number

```
class GfG {
    static boolean isprime (int n) {
        if (n <= 1)
            return false;
        for (int i = 0; i < n; i++)
            if (n % i == 0)
                return false;
        return true;
    }
    public static void main (String args[]) {
        System.out.println( isprime (11) ) } }
```

Input : 3
output: Prime number

3) Factorial

```
class Test {
    static int fact (int n) {
```

Input: 5
Output: 120

```
    int res = 1, i;
    for (i=2; i<=n; i++)
        res *= i
    return res
}
public static void main (String[] args) {
    int num = 5
    System.out.println(factorial(5));
}
}
```

4.) Reverse a number :-

Input: 12345
Output: 54321

```
class GFG {
    static int reverse (int n) {
        int rev = 0;
        int rem;
        while (n > 0) {
            rem = n % 10;
            rev = (rev * 10) + rem;
            n = n / 10; }
        return rev; }
    public static void main (String[] args
        int n = 4526;
        System.out.println (reverse (n)); } }
```

5.) Armstrong Number :

```
public class Armstrong {
    public static void main (String[] args) {
        if (args.length != 1) {
            System.out.println("provide one number");
```

```
        return; }.
int number = Integer.parseInt(args[0]);
 int on = number;
 int r = 0;
 int n = 0;
 int t = number;
    while (t != 0) {
        t /= 10;
        n++;
    }.
    while (on != 0) {.
        int rem = on % 10;
        r += Math.pow(rem, n);
        on /= 10; }.
    if (r == number) {.
        System.out.println("It is armstrong no"); }.
    else {
        System.out.println("It is not an armstrong no");
        }.
    }.
}.
```

Input: 153
Output - It is an armstrong number.

6) Happy number:

```
public class Happy number {.
    public static void main (String [] args) {.
        if (args.length != 1) {.
            System.out.println("Provide a number");
        return;
```

```
}
int number = Integer.Integer.parseInt(args[0]);
System.out.println(number + (isHappy(number)); }
public static boolean isHappy(int n){
    int s = n, f = n;
    while(f != 1 && getNext(f) != 1){
        s = getNext(s);
        f = getNext(getNext(f));
        if (s == f) return false;
    }
return true;
}
private static int getNext(int n){
    int s=0
    while(n > 0){
    int d = n % 10;
    s += d*d;
    n /= 10; }
    return s; }
}
```

Input: 19

Output: It is an happy number.

7.) palindrome:

```
public class Palindrome{
    public static void main(String[] args){
        int number = Integer.parseInt(args[0]);
        System.out.println("number. (ispalindrome(number));
}
public static boolean ispalindrome(int n){
    int r=0; o=n;
```

```
while (n != 0){
    r = r*10+n%10;
    n /= 10; }.
return o == r; }
}.
```

Input : 101
Output: 101 It is an Palidrom number.

8) Sum of digits :-

```
public class Sum of digits {
    public static void main (String[] args) {
        int n = Integer.parseInt (args[0]);
        int s = 0;
        while (number != 0) {
            s = n % 10;
            n /= 10; }
        System.out.println (s);
    }
}.
```

Input : 1 2 3 4 5
Output : 15

9.) Perfect Number :

```
Public class perfectnumbers {
    public static void main (String[] args) {
        int n = Integer.parseInt (args[0]);
        for (int i = 1; i <= n; i++) {
            int s = 0
            for (int j = 1; j <= i/2; j++) {
                s += j; } }
        if (s == i) {
            System.out.println (i); } } }
```

Input : 6
Output : It is a perfect number

10) Numbers divisible by 5 and 7 upto n.

Input: 50
Output: 35

```
public class DivisibleBy5and7 {
    public static main (String[] args) {
        int n = Integer.parseInt(args[0]);
        System.out.println("divisible by 5 & 7");
        for (int i = 1; i < n; i++) {
            if (i % 5 == 0 && i % 7 == 0) {
                System.out.println(i);
            }
        }
    }
}
```

11) Fibonacci Series

Input: 5
Output: 0, 1, 1, 2, 3

```
public class Fibonacci {
    public static void main (String[] args) {
        int n = 100;
        int a = 0, b = 1, c;
        System.out.println(a + " " + b + " ");
        while ((c = a + b) <= n) {
            System.out.println(c + " ");
            a = b;
            b = c;
        }
    }
}
```

12) GCD and LCM:-

Input: 36, 120
Output: 12, 360.

```
public class GCDandLCM {
    public static void main (String[] args) {
        int x1 = 24, x2 = 36;
```

```
int gcd = GcD(n1, n2);
int lcm = LCM(n1, n2, gcd);
System.out.println("GcD = " + gcd);
System.out.println("LCM = " + lcm); }
public static int GcD (int n, int b){
while (b != 0){
int t = b;
b = a % b;
a = temp; } return n; }
public static int LCM (int n, int b, int GcD){
return (a*b)/gcd; } }
```

12) Celsius to fahrenheit and fahrenheit to Celsius

```
public class Temperature {
public static void main(String[] args) {
double c = 25.0;
double f = 77.0;
System.out.println(c to f(c) + f to c(f));
}
public static double c to f(c){
return (c * 9/5) + 32; }
public static double f to c(c){
return (f - 32) * 5/9; }
```

Input : C : 22C.
output : F : 77F.

output : F : 71.6
C : 25°C

14) Decimal to Binary and Binary to Decimal

```
public class Decimalbinary {
public static void main (String[] args) {
int d = 25;
```

```
String b= "11001";
System.out.println (d+to b(d) + b+ d (b)); }.
public static string d to B (int d){
    return Integer to Binary string (d);
}.
public static int b to d (int b){
    return Integer. parse Int (b,2);
}.
```

Input: d= 25
b = 11001
output: b = 11001
d = 25

}.

15) Sum of odd and Even for a number:

```
Public class oddeven{
    public static void main (String[] args){
        int n=10;
        int o=0, l=0
        for (int i=1; i<n; i++){
            if (i%2==0){
                l+=i; }.
            else{
                o+=i;
            }
        }.
        System.out. println ("Sum of odd" +o + "Sum of even"
                + l ); }.
```

Input: 10
output: odd = 25
even = 20

16) Leap year:

```
public class Leapyear{
    public static void main (String[] args ){
        int y = 2024
        if (isleap(y)){
            System.out.println ("It is a leap year"); }.
        else{
```

Input: 2024
output: It is a leap year.

```
        System.out.println("It is not an leap year"); }.
public static boolean isleap (int j){
    return (j%.4 == 0 && j%.100 != 0) || (j%.400 == 0);
    }
}.
```

17) Voting :-

Input: 20.
Output: You are eligible to vote.

```
public class Voting {.
    public static void main (String[], args){
        int age = 20.
        if (age >= 18) {.
            System.out.println(" You are eligible to vote "); }.
        else {
            System.out.println (" You are not eligible to Vote "); }.
        }.
```

18) Sum of square root and Cubic root :-

Input: ~~Square~~ = ~~Cubic~~ = 625
Output: Square = 25
Cube = 5

```
public class root {.
    public static main(String[], args){.
        int m = 625;
        double Square = 0, Cube = 0;
        for (int i = 1; i <= m, i++){.
            Square += Math.sqrt (i);
            Cubic += Math.Cubic (i);
        }.
        System.out.println ("Square" + Square + "Cubic" + Cubic);
    }
}.
```

19) Vowels in the string

Input: "Hi Hello"
output: i e o

```
public class printVowels {
    public static void main(String[] args){
        System.out.println("Count of Vowels");
        Vowels();
    }
    public static Void Vowels(){
        String Vowels = "aeiouAEIOU";
        for(int i=0; i<vowels.length(); i++){
            char ch = vowels.charAt(i);
            System.out.println("ch + "");
        }
    }
}
```

20) lowercase and uppercase:

```
public class Main {
    public static Void main(String[] args) {
        String text = "Hello World";
        System.out.println(txt.toUpperCase());
        System.out.println(txt.toLowerCase());
    }
}
```

Input: "Hello world"
output: uppercase "HELLO WORLD"

lowercase: "hello world"