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1. Even Odd No:

```
import java.util.Scanner;
import java.lang.*; class
Evenodd

{
    public static void main(String args[])
    {
        Scanner sc=new Scanner(System.in);
        System.out.println("Enter the number:");
        int i=sc.nextInt();
        if(i%2==0)
        {
            System.out.println("No is Even");
        }
        else
        {
            System.out.println("No is Odd");
        }
    }
}

/*
I:\Basic>javac Evenodd.java
```

I:\Basic>java Evenodd

Enter the number:

6

No is Even

I:\Basic>javac Evenodd.java

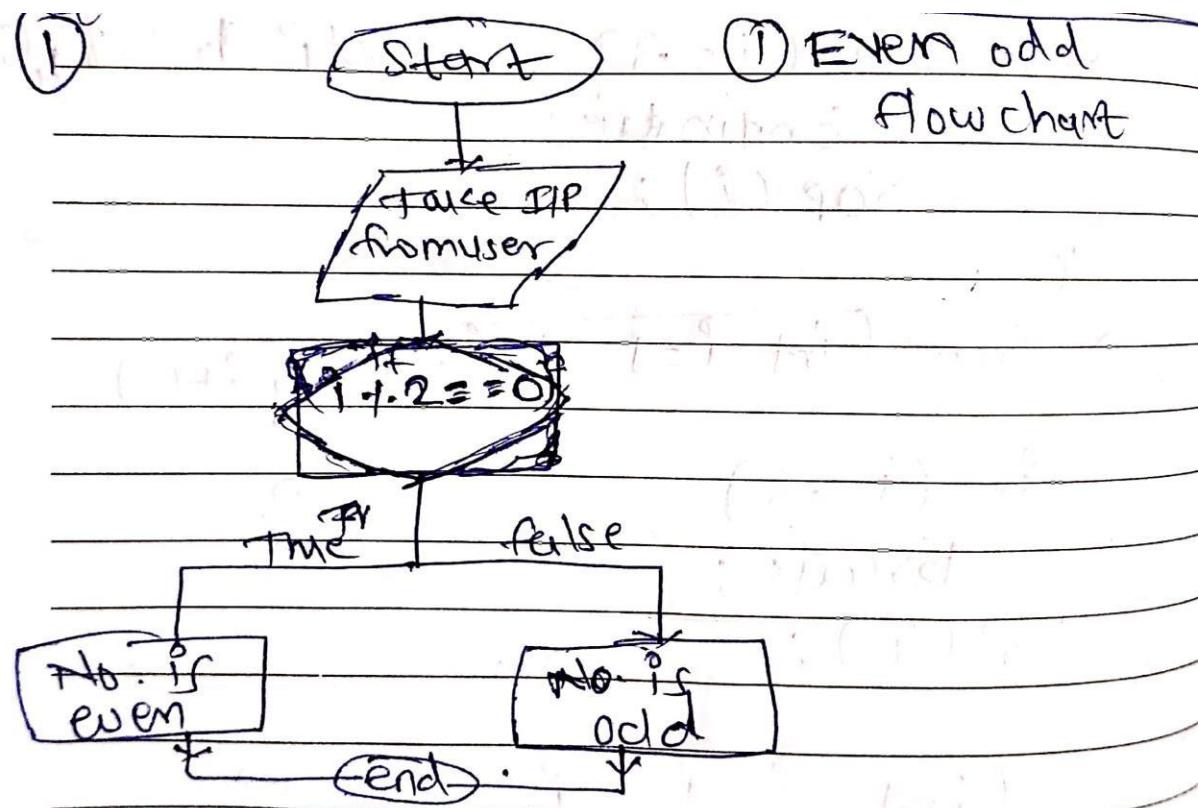
I:\Basic>java Evenodd

Enter the number:

5

No is Odd

*/



Algorithm :-

- ① Start the program
- ② take the IIP from user
- ③ process = condition if ($i \% 2 == 0$)
 - a) if no satisfied No is even
 - b) end process

2. Fact of no:

```
import java.util.Scanner; class  
FactScanner  
{
```

```
public static void main(String args[])
{
    int fact=1;
    int i=0;

    Scanner sc=new Scanner(System.in);

    System.out.println("Enter The no:");

    int num=sc.nextInt(); if(num==0)

    {
        System.out.println("fact= "+1);

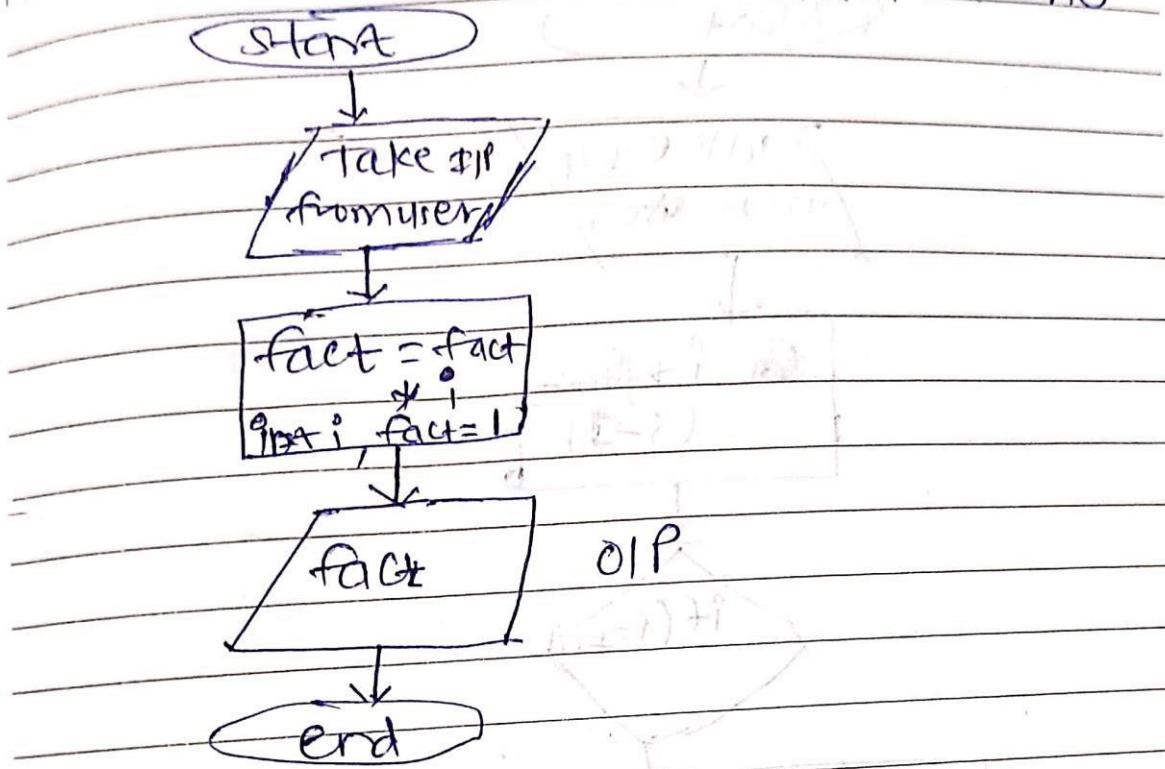
    }
    else{
        for(i=1;i<=num;i++)
        {
            fact=fact*i;
        }

        System.out.println("Factorial of "+num+" is:"+fact);
    }
}

/*
I:\Basic>javac FactScanner.java
I:\Basic>java FactScanner

Enter The no:
5
Factorial of 5 is:120
*/
```

② flowchart



Algorithm :-

- ① Start the program
- ② Take the I/P from user
- ③ process = fact = fact * i
int i, fact = 1 (initialized)
- ④ end

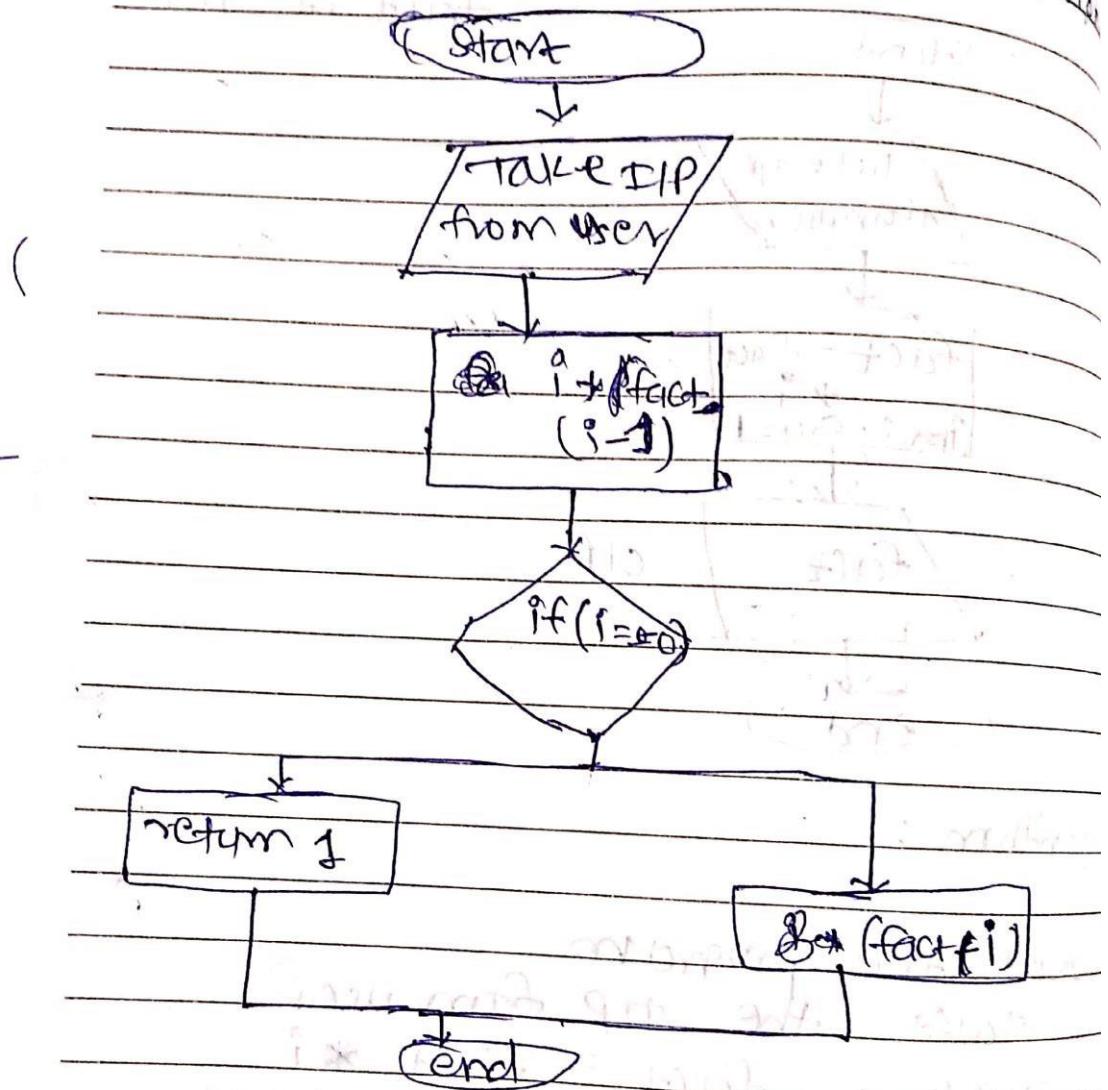
3. Fact of number using recursion:

```

import java.util.Scanner;
class Factrecur
  
```

```
{  
    public static int fact(int i)  
    {  
        if(i==0)  
        {  
            return 1;  
        }  
        else  
        {  
            return(i*fact(i-1));  
        }  
    }  
    public static void main(String args[])  
    {  
        Scanner sc=new Scanner(System.in);  
        System.out.println("Enter the no: ");  
        int i=sc.nextInt();  
        System.out.println("Factorial of "+i+" is:" +fact(i));  
    }  
  
}  
  
/*  
I:\Basic>javac Factrecur.java  
  
I:\Basic>java Factrecur Enter  
the no:  
7  
Factorial of 7 is:5040  
*/
```

(B) factorial of no using recursion



Algorithm:

- ① Start the program
- ② Take the IP from user
- ③ process - $i * \text{fact}(i-1)$
- ④ Condition checked - if ($i == 0$)
return 1.
else return $\text{fact}(i)$
- ⑤ end

4. Swapping of no: import

```
java.util.Scanner; class  
SwapScanner  
{  
    public static void main(String args[])  
    {  
        Scanner sc=new Scanner(System.in);  
        System.out.println("Enter the first no:");  
        int i=sc.nextInt();  
        System.out.print("Enter the second no:");  
        int j=sc.nextInt();  
        i=i+j;  
        j=i-j;           i=i-j;  
  
        System.out.println("After Swap i is:" +i);  
        System.out.println("After Swap j is:" +j);  
  
    }  
}
```

/*

I:\Basic>javac SwapScanner.java

I:\Basic>java SwapScanner

Enter the first no:

50

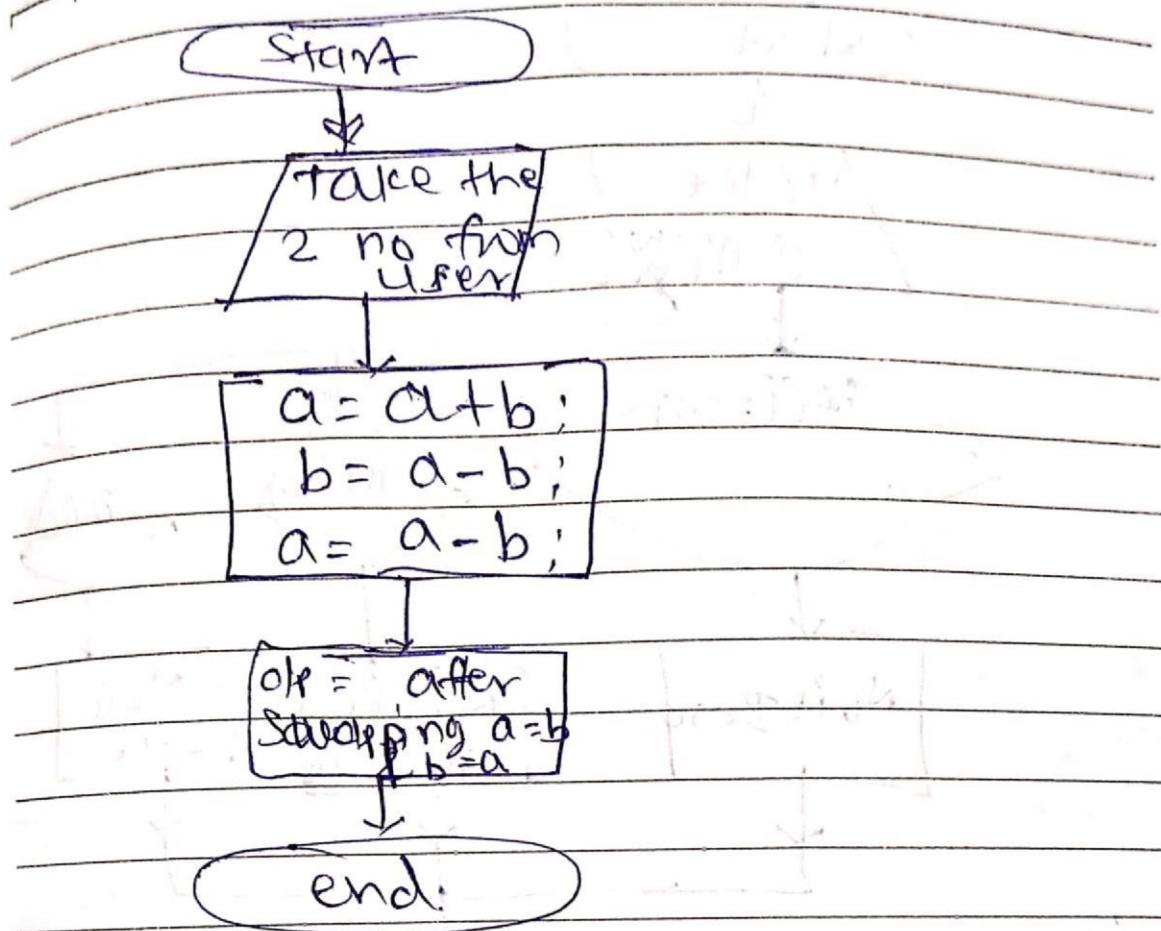
Enter the second no:30

After Swap i is:30

After Swap j is:50

*/

① Swapping of no.



Algorithm:

- ① start the program
- ② take IP from user
- ③ process = $a = a+b;$ ~~add 2~~ $b = a-b;$ ~~swap~~
 $a = a-b;$ ~~with b~~
- ④ OlP + ~~now a = b and b = a~~ after swapping
- ⑤ end

5 Positive or negative no:

```
import java.util.Scanner; class
PostNega
{
    public static void main(String args[])
    {
        Scanner sc=new Scanner(System.in);
        System.out.println("Enter the no:");
        int i=sc.nextInt();
        if(i>0)
        {
            System.out.println("Number is Positive ");
        }
        else if(i==0)
        {
            System.out.println("Number is Zero ");
        }
        else
        {
            System.out.println("Number is Negative ");
        }
    }
}

/*
I:\Basic>javac PostNega.java
```

```
I:\Basic>java PostNega
```

```
Enter the no:
```

```
52
```

```
Number is Positive
```

```
I:\Basic>javac PostNega.java
```

```
I:\Basic>java PostNega
```

```
Enter the no:
```

```
0
```

```
Number is Zero
```

```
I:\Basic>javac PostNega.java
```

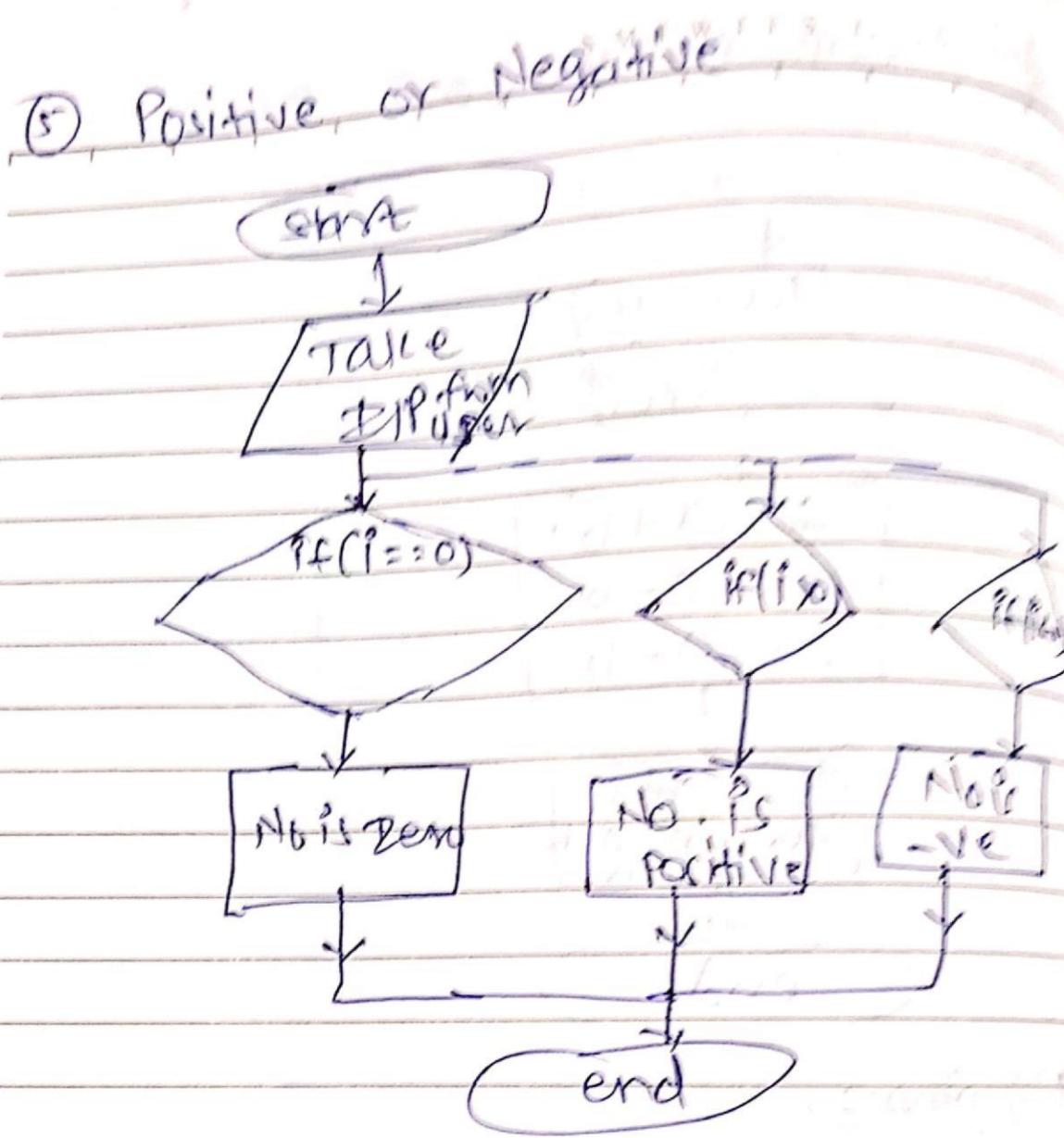
```
I:\Basic>java PostNega
```

```
Enter the no:
```

```
-2
```

```
Number is Negative
```

```
*/
```



Algorithm:-

- ① Start the program
- ② take DIP from user
- ③ Condition is checked :
 ↗ if ($i == 0$) → No is zero
 ↗ if ($i < 0$) → No is -ve
 ↗ if ($i > 0$) → No is +ve
- ④ end

6. Leap Year or not:

```
import java.util.Scanner;
class Leap
{
    public static void main(String args[])
    {
        Scanner sc=new Scanner(System.in);
        System.out.println("Enter the year:");
        int i=sc.nextInt();
        if(i%100==0)
        {
            if(i%400==0)
            {
                System.out.println("Leap year");
            }
            else
            {
                System.out.println("Not Leap year");
            }
        }
        else if(i%4==0)
        {
            System.out.println("Leap year");
        }
        else
        {
            System.out.println("Not Leap year");
        }
    }
}

/*
I:\Basic>javac Leap.java
```

```
I:\Basic>java Leap
```

```
Enter the year:
```

```
2022
```

```
Not Leap year
```

```
I:\Basic>javac Leap.java
```

```
I:\Basic>java Leap
```

```
Enter the year:
```

```
1900
```

```
Not Leap year
```

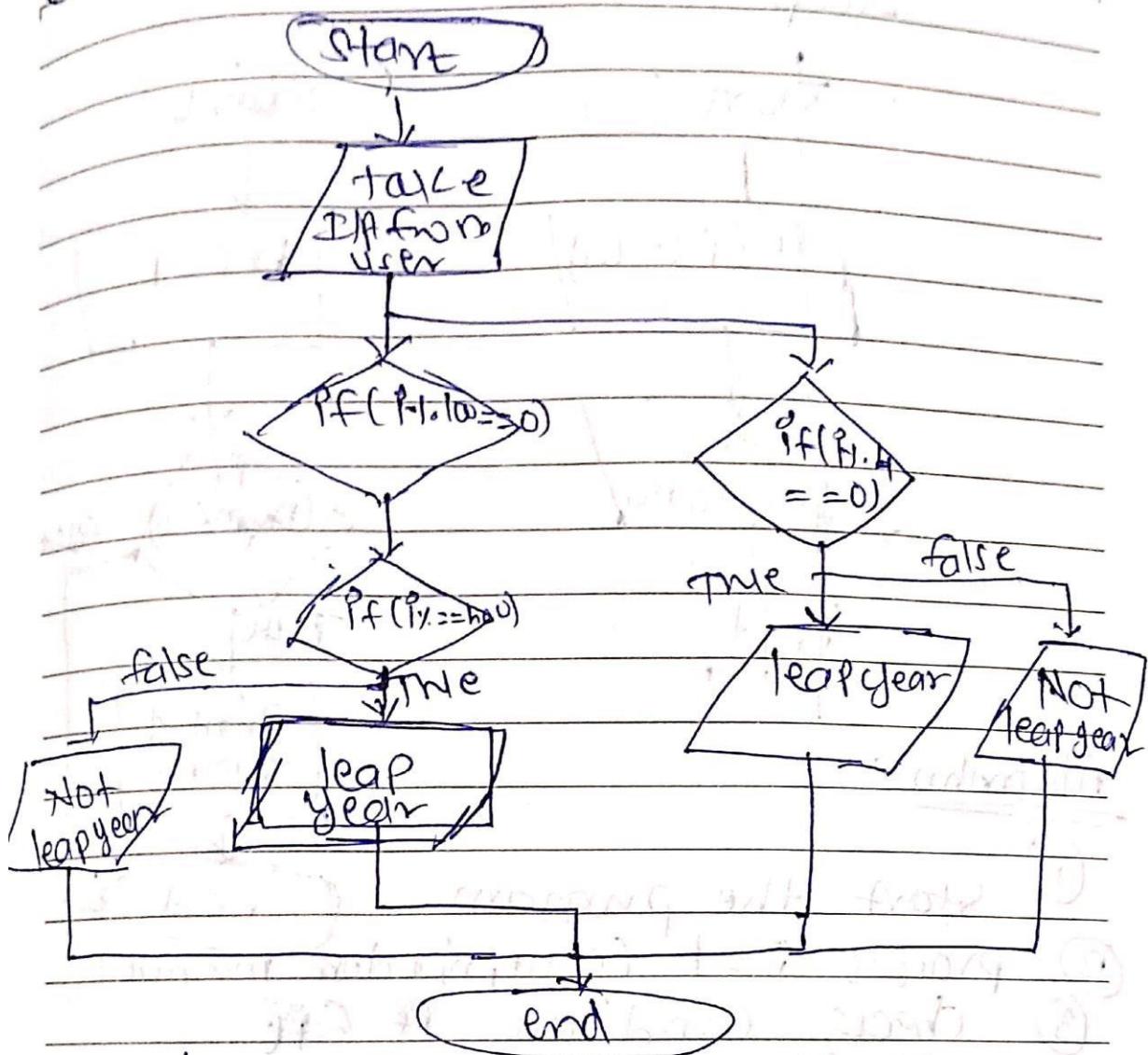
```
I:\Basic>javac Leap.java
```

```
I:\Basic>java Leap Enter  
the year:  
2400  
Leap year
```

```
I:\Basic>javac Leap.java
```

```
I:\Basic>java Leap Enter  
the year:  
2020  
Leap year  
*/
```

⑥ leap year or Not



Algorithm

- ① Start the programme
- ② Take I/P from user
- ③ Condition checked :-


```

      if (i%100 == 0) -> if (i%4 == 0) -> leap
      else Not leap year
      
```
- ④ Condition checked :-


```

      if (i%4 == 0) -> leap year
      else Not Leap year
      
```

7. 1 to 10 without using loop:

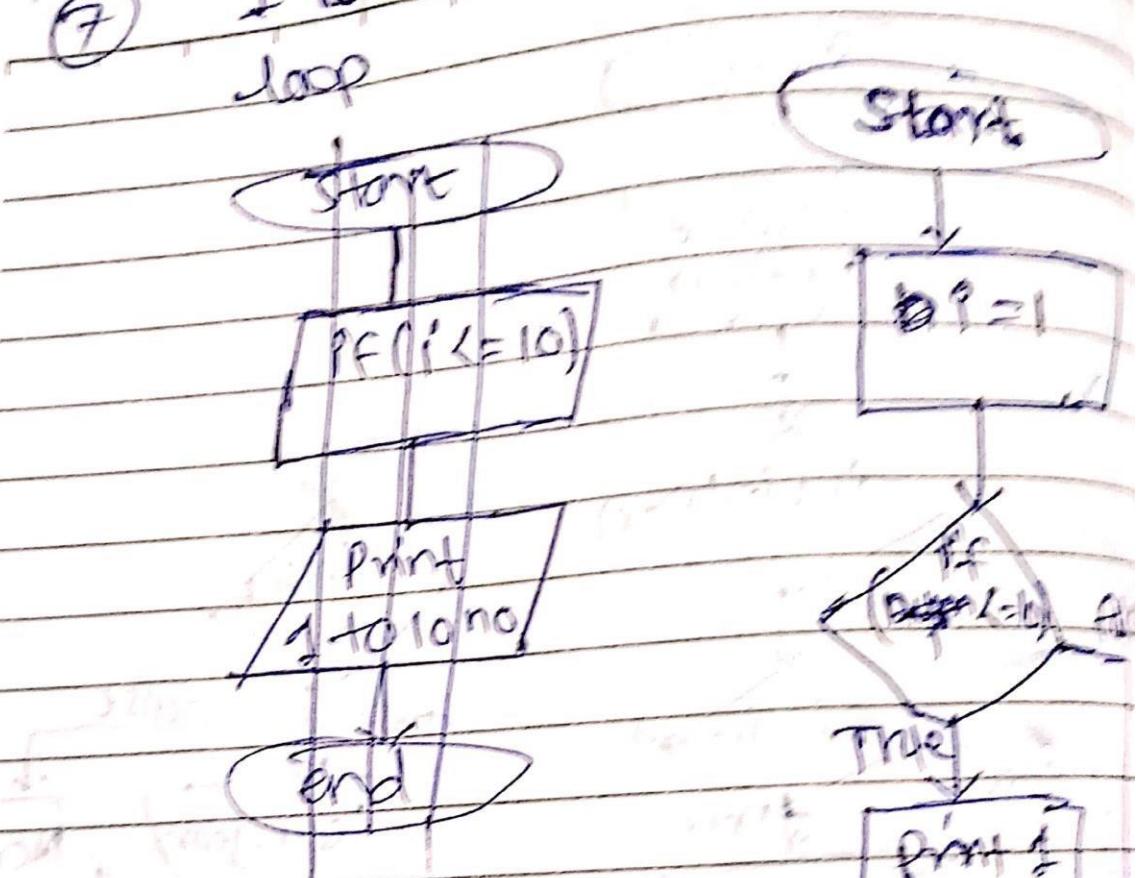
```
public class Withoutloop
{
    public static void printNum(int i)
    {
        if(i<=10)
        {
            System.out.println(i);

            printNum(i=i+1);
        }
    }

    public static void main(String args[])
    {
        printNum(1);
    }
}

/*
1
2
3
4
5
6
7
8
9
10 */
```

⑦ 1 to 10 NO. (Without using loop)



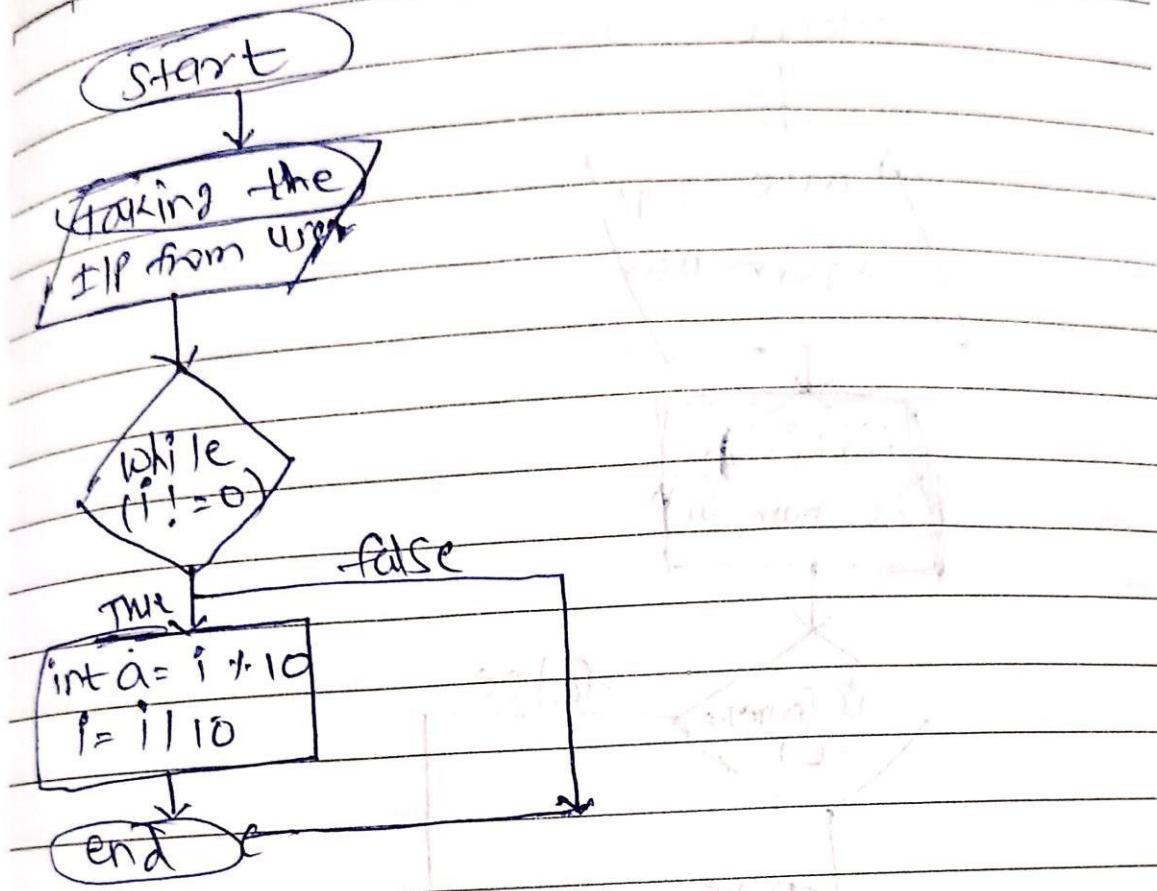
Algorithm:

- ① Start the program
- ② process $i = 1$ (call print num method)
- ③ check condition $PE(i \leq 10)$
 - if ($i \leq 10$)
 - True → print i to 10 no
 - false → end process
- ④ end process

8. Print the digit of number:

```
import java.util.Scanner; class  
Printdigit  
{  
    public static void main(String args[])  
    {  
        Scanner sc=new Scanner(System.in);  
        System.out.println("Enter the number:");  
        int i=sc.nextInt();  
        while(i!=0)  
        {  
            int a=i%10;  
            i=i/10;  
            System.out.print(a+" ");  
        }  
    }  
  
/*  
Enter the number:  
2536  
6 3 5 2 */
```

⑧ print the digit of number



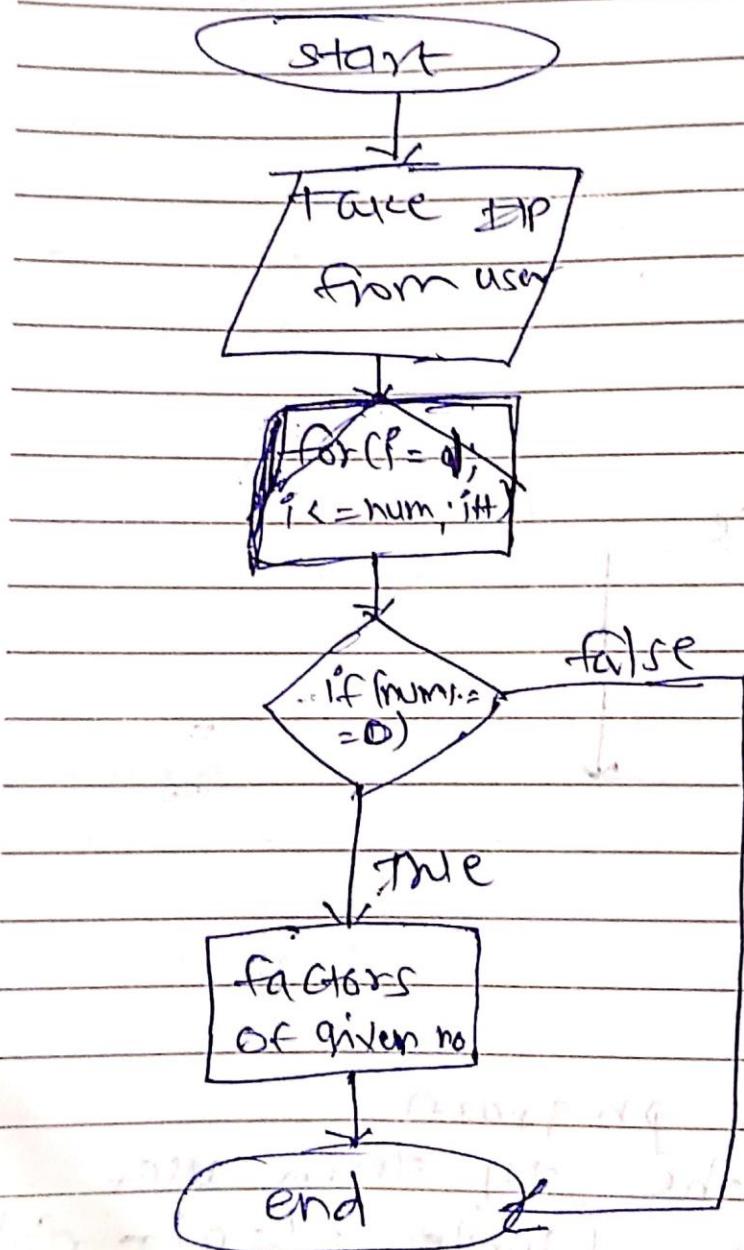
Algorithm :-

- ① Start the program
- ② Taking the IIP from user
- ③ Condition (while $i \neq 0$) — false
- ④ process → $a = i \% 10$; $i = i / 10$; true
- ⑤ end process

9. Factor of given no:

```
import java.util.Scanner; class  
Factorsofnumber  
{  
    public static void main(String args[])  
    {  
        Scanner sc=new Scanner(System.in);  
        System.out.println("Enter the no:");    int  
        num=sc.nextInt();    for(int  
        i=1;i<=num;i++)  
        {  
            if(num%i==0)  
            {  
                System.out.print(i+" ");  
            }  
        }  
    }  
  
/*  
Enter the no:  
60  
1 2 3 4 5 6 10 12 15 20 30 60  
*/
```


⑨ factors of given no.



Algorithm:

- ① Start the program
- ② Taking IIP from user
- ③ process `for (i=1; i<=num; i++)`
- ④ condition → if (`num % i == 0`)

S.M.I.W.F.S. Computer Science

Time - factors of given No are printed
Else end process
③ end process

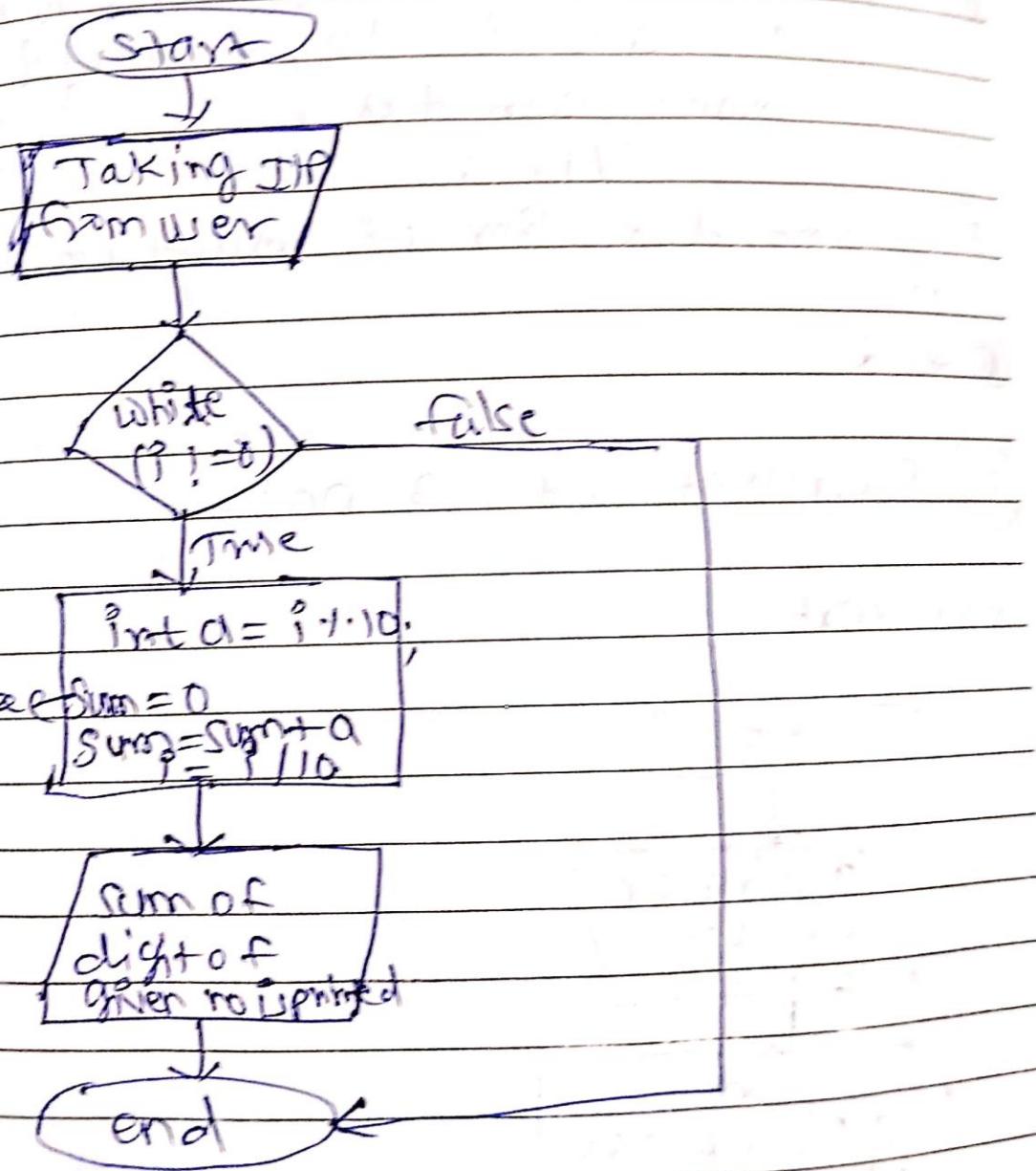
10. Sum of digit:

```
import java.util.Scanner;
class Sumofdigit
{
    public static void main(String args[])
    {

        int sum=0;
        Scanner sc=new Scanner(System.in);
        System.out.println("Enter the number:");
        int i=sc.nextInt();           while(i!=0)
        {
            int a=i%10;
            i=i/10;
            sum=sum+a;
        }
        System.out.print("Sum of digit is:"+sum);
    }
}

/*
Enter the number:
25
Sum of digit is:7
*/
```

10) Sum of digit



Algorithm 1 Sum of digit of no

- ① Start , sum=0 → initialize
- ② Taking I/P from user
- ③ Condition is checked (while $i \neq 0$)
if true go to
- ④ process =
 $\text{int } a = i \% 10;$ Step ⑤ if false
 $\text{sum} = \text{sum} + a;$ go to step ⑥
 $i = i / 10;$
- ⑤ print the sum of digit of give no.
- ⑥ end .

11. Smallest of 3 number:

```
import java.util.Scanner;
class Smallestof3no
{
    public static void main(String args[])
    {
        Scanner sc=new Scanner(System.in);
        System.out.println("Enter the first no:");
        int a=sc.nextInt();
        System.out.println("Enter the Second no:");
        int b=sc.nextInt();
        System.out.println("Enter the third no:");

        int c=sc.nextInt();

        if(a<b && a<c)
        {
            System.out.println(""+a+" no is small");
        }
        else if(b<a && b<c)
        {
            System.out.println(""+b+" no is small");
        }
        else
        {
            System.out.println(""+c+" no is small");
        }
    }

/*
Enter the first no:
```

25

Enter the Second no:

27

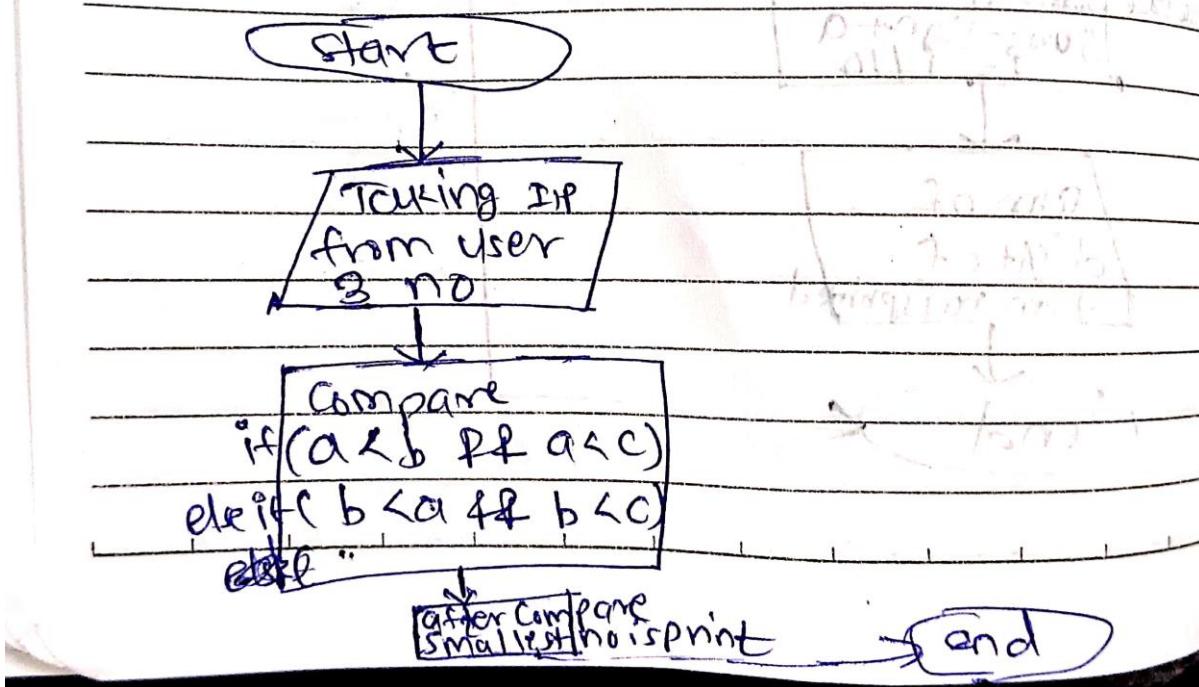
Enter the third no:

35

25 no is small */

11 Smallest of 3 no's

flowchart :-



S.M.T.W.T.F.S. (Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday)

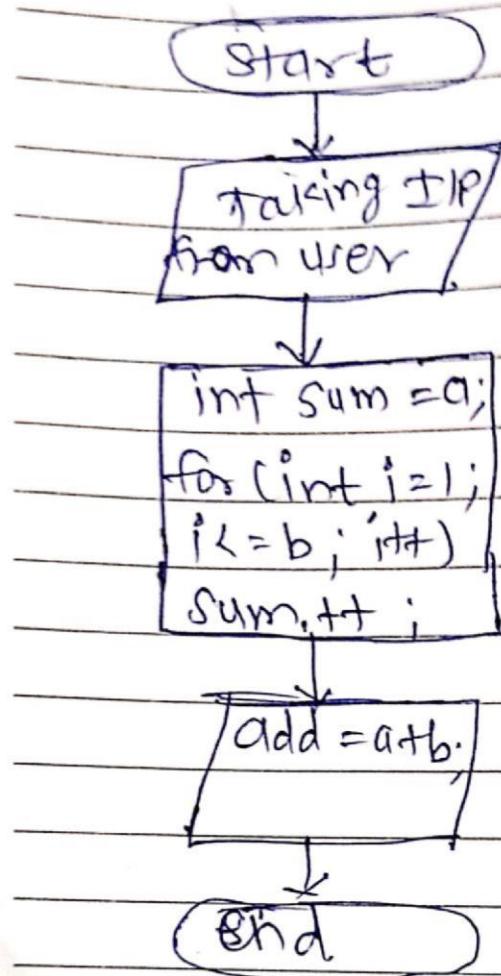
Algorithm :-

- ① Start program
- ② Taking TIP from user. (3 no)
- ③ Compare using if else nested loop
if ($a < b$ & $a < c$)
else if ($b < a$ & $b < c$)
- ④ Print the smallest no after compare.
- ⑤ end.

12. Without Using Arithmetic Operator:

```
import java.util.Scanner; class  
Withoutarithmeticoperator  
{  
    public static void main(String args[])  
    {  
        Scanner sc = new Scanner(System.in);  
        System.out.print("Enter the first no:");  
        int a=sc.nextInt();  
        System.out.print("Enter the second number:");  
        int b=sc.nextInt();  
        int sum=a;  
        for(int i=1;i<=b;i++)  
        {  
            sum++;  
        }  
        System.out.println("Addition of "+a+" and "+b+" is:"+sum);  
    }  
}  
  
/*  
I:\Basic>javac Withoutarithmeticoperator.java  
I:\Basic>java Withoutarithmeticoperator  
Enter the first no:52  
Enter the second number:48  
Addition of 52 and 48 is:100  
*/
```

(12) without using arithmetic operation



Algorithm:

- ① start
- ② Taking I/P from user
- ③ initialize a & b
 $\text{int Sum} = a$
(because value of a is not changed at the time of addition)
- ④ Taking for-loop
($\text{for } i = 1 ; i \leq b ; i++$)
- ⑤ $\text{Sum}++$
- ⑥ $\text{add} = a + b$;
- ⑦ end

13. Reverse of given no:

```
import java.util.Scanner; class  
reverseno  
{  
    public static void main(String args[])  
    {  
        Scanner sc=new Scanner(System.in);  
        System.out.print("Enter the number:");  
        int num=sc.nextInt();  
        while(num!=0)  
        {  
            int a=num%10;  
            num=num/10;  
            System.out.print(a+"");  
        }  
    }  
  
/*  
Enter the number:3498  
8943 */
```

⑬ reverse given no:-

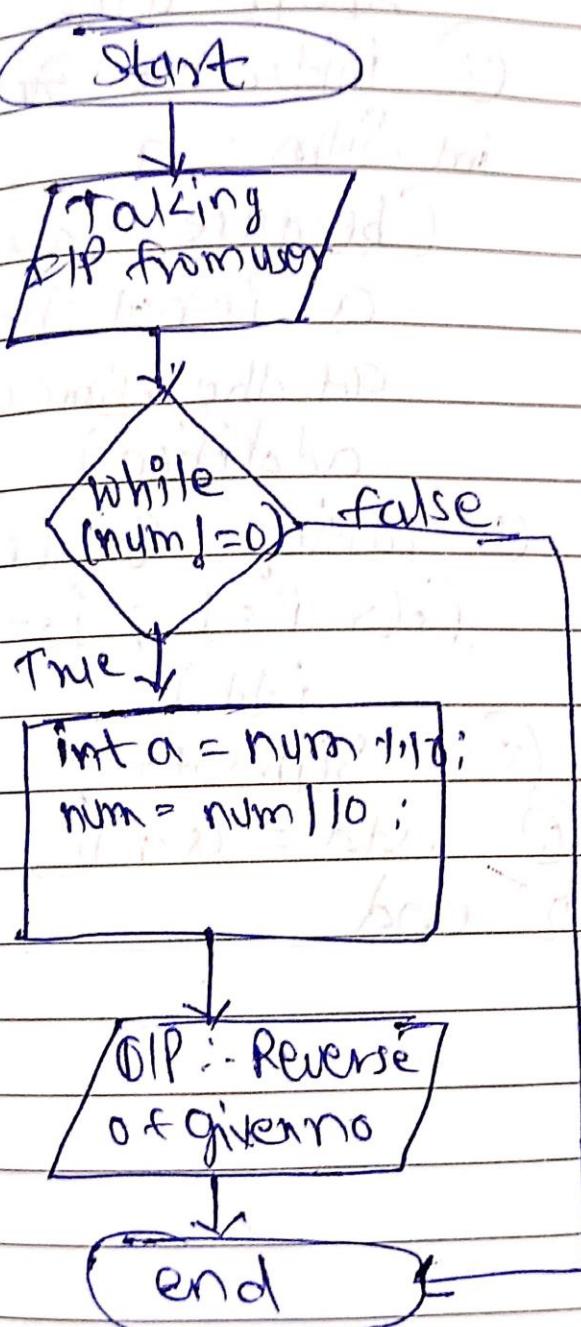
Algorithm:

- ① start
- ② Taking IP from user
- ③ while ($num \neq 0$), Condition
- ④ process: $int a = num \% 10;$

num = num / 10;

print output
stop end.

flowchart.



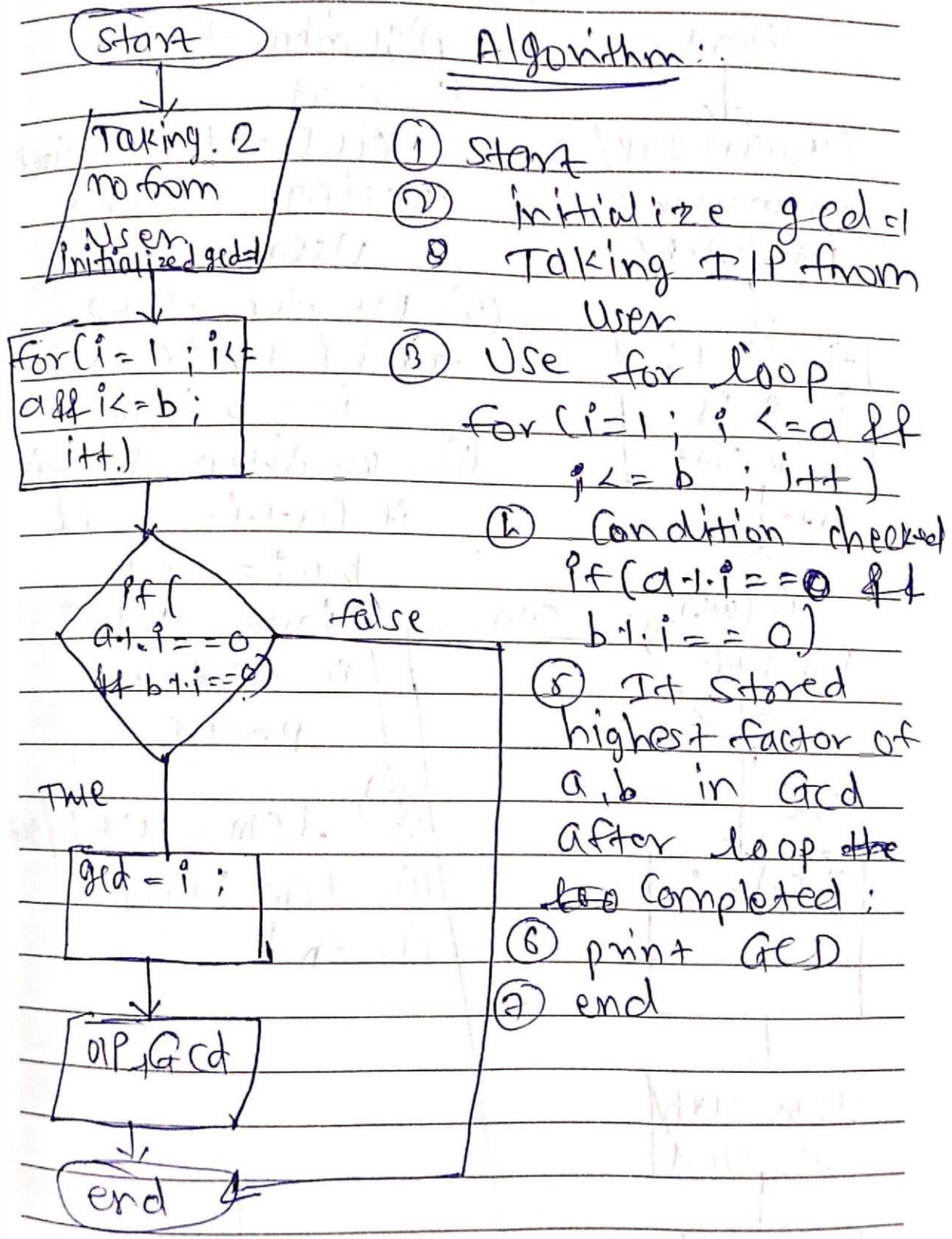
14. GCD

```
import java.util.Scanner; class  
Gcd  
{  
    public static void main(String args[])  
    {  
        int gcd=1;  
        Scanner sc=new Scanner(System.in);  
        System.out.print("Enter the first no:"); int  
        a=sc.nextInt();  
        System.out.print("Enter the second no:");  
        int b=sc.nextInt(); for(int i=1;i<=a  
        && i<=b;i++)  
        {  
            if(a%i==0 && b%i==0)  
                gcd=i;  
        }  
        System.out.println("GCD of "+a+" and "+b+" is:"+gcd);  
    }  
}
```

```
/*  
Enter the first no:12 Greatest common divisor  
Enter the second no:8  
GCD of 12 and 8 is:4
```

```
12=2*2*3 common factor 2*2 in both gcd=4  
8=2*2*2 */
```

1h) GCD (Greatest Common Divisor)

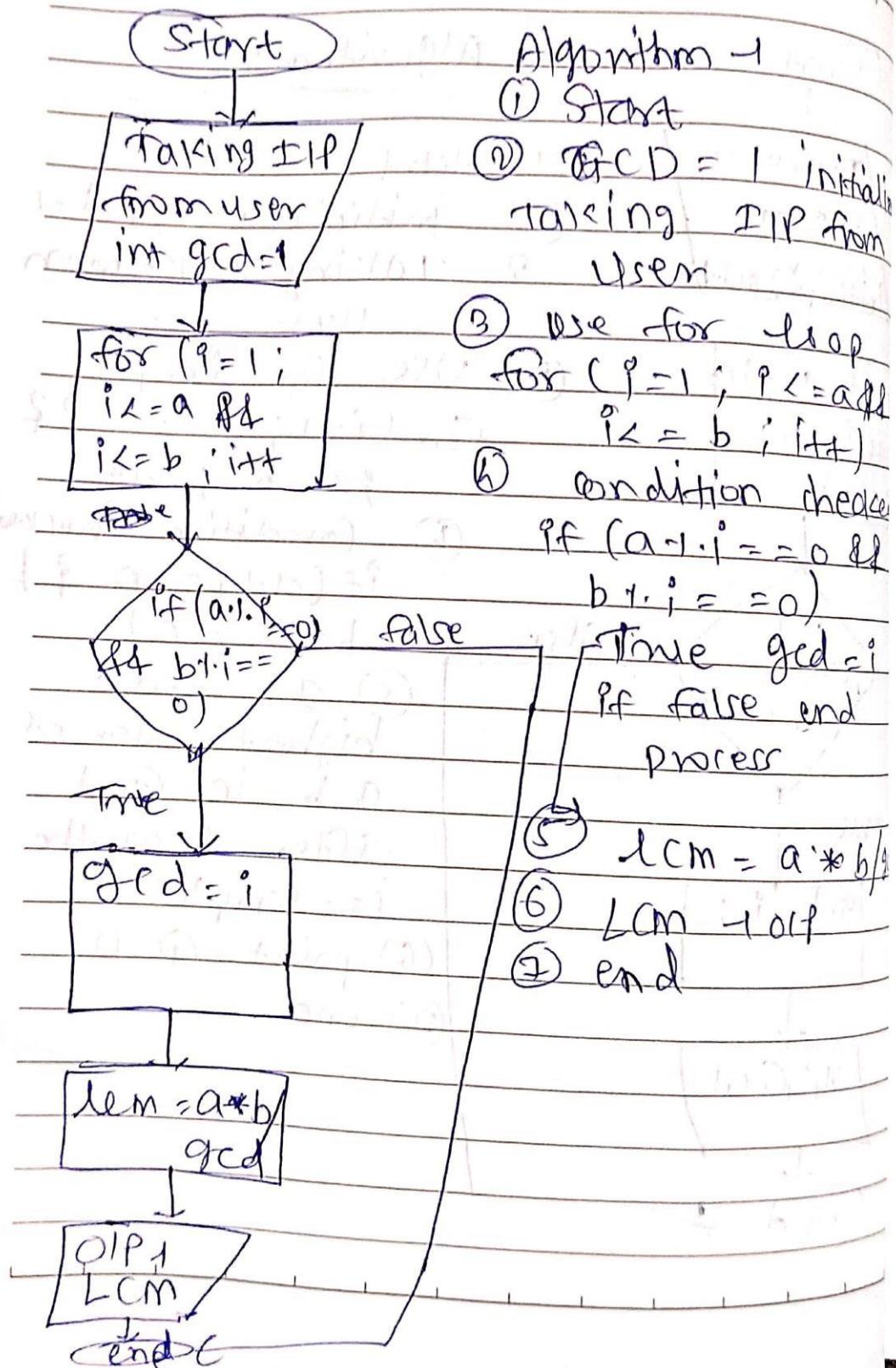


15. LCM of 2 no:

```
import java.util.Scanner; class
Lcm
{
    public static void main(String args[])
    {
        int gcd=1;
        Scanner sc=new Scanner(System.in);
        System.out.print("Enter the first no:");
        int a=sc.nextInt();
        System.out.print("Enter the second no:");
        int b=sc.nextInt();
        for(int i=2;i<=a && i<=b;i++)
        {
            if(a%i==0 && b%i==0)
                gcd=i;
        }
        int lcm=a*b/gcd;
        System.out.print("LCM of "+a+" and "+b+" is:"+lcm);
    }
}

/*
Enter the first no:6
Enter the second no:12
LCM of 6 and 12 is:12
*/
```

15 LCM of 2 No.



17. Palindrome No:

```
import java.util.Scanner;

class Palindrome

{

    public static void main(String args[])

    {

        int reversenum=0;

        Scanner sc=new Scanner(System.in);

        System.out.print("Enter the no:");

        int originalnum=sc.nextInt();

        int temp=originalnum;

        while(temp!=0)

        {

            int rem=temp%10;

            reversenum=reversenum*10+rem;

            temp=temp/10;

        }

        if(originalnum==reversenum)

        {

            System.out.println("No is palindrome");

        }

        else

        {

            System.out.println("No is not Palindrome");

        }

    }

}

/*
I:\Basic>javac Palindrome.java
```

```
I:\Basic>java Palindrome
```

```
Enter the no:2552
```

```
No is palindrome
```

```
I:\Basic>javac Palindrome.java
```

```
I:\Basic>java Palindrome
```

```
Enter the no:2554
```

```
No is not Palindrome */
```

⑩ Palindrome No.

T, W, T, F, S (Tuesday)

start

int reverseNum = 0;
Taking IP from
USER, int temp;
originalnum

while(temp != 0) {

int rem = temp % 10;

reverseNum = reverseNum * 10 + rem ;

temp = temp / 10

If original
num == reverse
num

True

No is
Palindrome

No is not
palindrome

end

S.M.T.W.T.F.S.

Algorithm:

- ① Start
- ② initialize originalnum = temp
- ③ reversenum = 0
- ④ Taking input from user
- ⑤ Condition checked
while ($\text{temp} \neq 0$) If false
If True
 $\text{rem} = \text{temp} \% 10$;
 $\text{reversenum} = \text{reversenum} * 10 + \text{rem}$;
 $\text{temp} = \text{temp} / 10$;
- ⑥ Condition \Rightarrow
If true If ($\text{originalnum} == \text{reversen}$
true - No is Palindrome
false - No is not Palindrome
- ⑦ end.

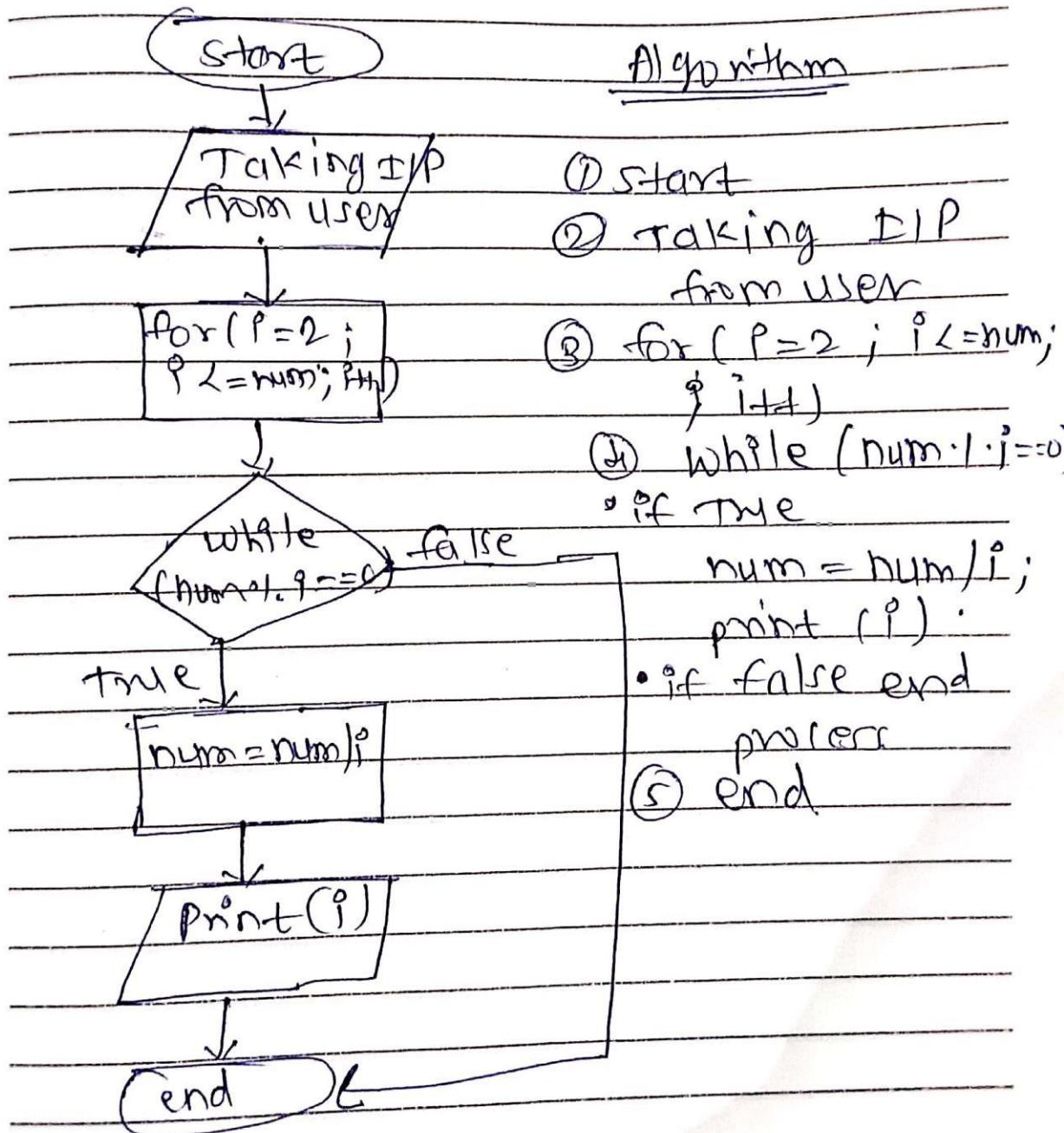
18. Primefactors of given no:

```
import java.util.Scanner; class  
Primefactors  
{  
    public static void main(String args[])  
    {  
        Scanner sc=new Scanner(System.in);  
        System.out.print("Enter the number:");  
        int num=sc.nextInt();  
  
        for(int i=2;i<=num;i++)  
        {  
            while(num%i==0)  
            {  
                System.out.print(i+" ");  
                num=num/i;  
            }  
        }  
    }  
/*  
Enter the number:30  
2 3 5  
*/
```

18

Print factors

S.M.T.V.S.....
of given no.

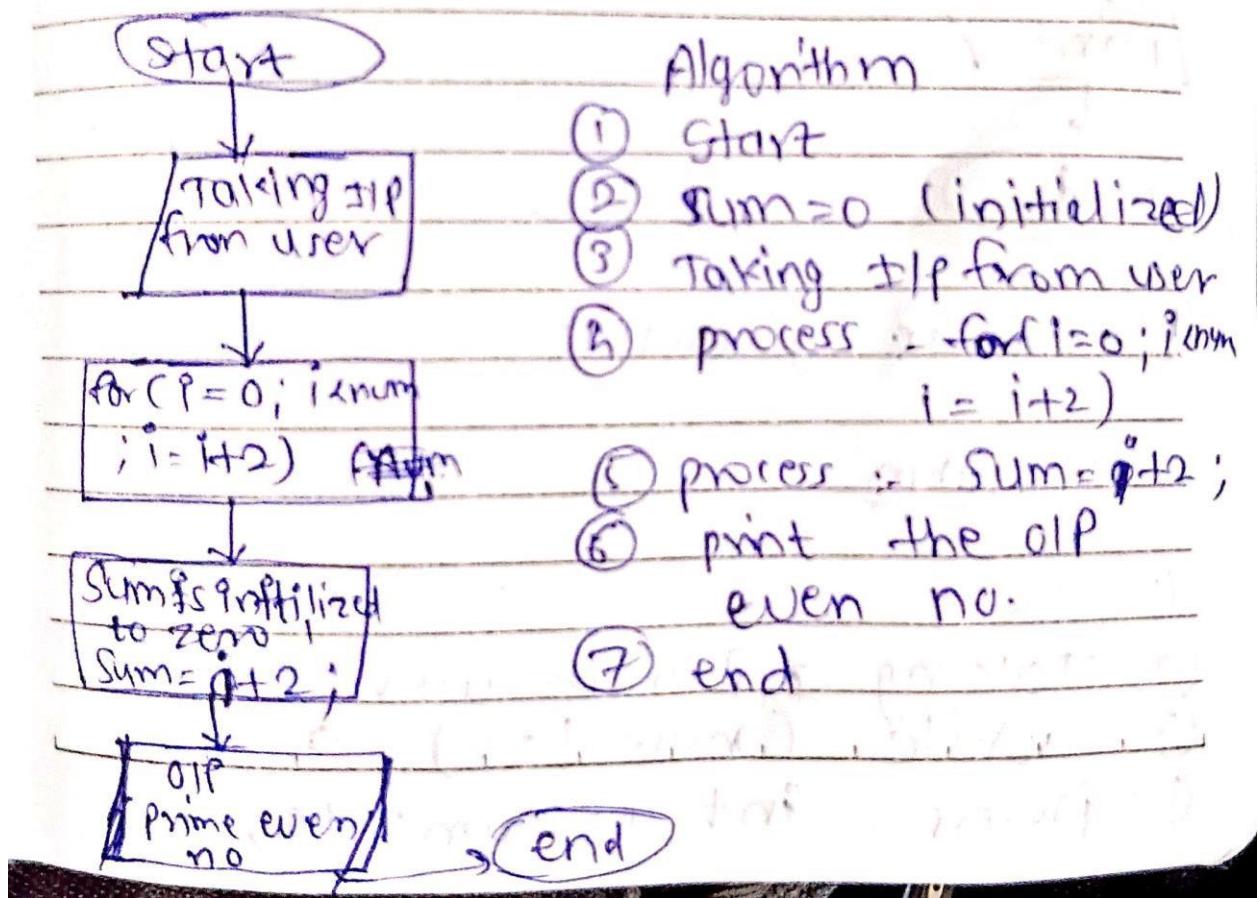


19. Even No:

```
import java.util.Scanner;
class evenno
{
    public static void main(String args[])
    {
        int sum=0;
        Scanner sc=new Scanner(System.in);
        System.out.print("Enter the number upto which you want to print:");
        int num=sc.nextInt();
        for(int i=0;i<num;i=i+2)
        {
            sum=i+2;
            System.out.print(sum+" ");
        }
    }
/*
Enter the number upto which you want to print:30
2 4 6 8 10 12 14 16 18 20 22 24 26 28 30
*/
```

7

19) Even no



20. Odd No:

```

import
java.util.Scanner;
class
oddno
{
    public static void main(String args[])
    {
        int sum=0;
        Scanner sc=new Scanner(System.in);
        System.out.print("Enter the number which you want to print:");
        int num=sc.nextInt();
        for(int i=0;i<num;i=i+2)
        {
            sum=i+1;
            System.out.print(sum+" ");
        }
    }
}

```

Enter the number which you want to print: 30

1 3 5 7 9 11 13 15 17 19 21 23 25 27 29

*/

