

PS

* * * Demonstrate of Datatype * * *

Enter your roll number:

1750

Enter your name:

Abhay

Enter your mobile number:

9892057801

Enter your Percentage:

65

Enter your grade:

A

Your roll number is:

1750

Your name is:

Abhay

Your mobile number is:

9892057801

Your Percentage is:

65.00

Your grade is:

A

Practical No. 1

Aim: Program to understand basic datatypes & I/O

Source code:

```
#include <stdio.h>
#include <conio.h>

void main()
{
    int roll_no;
    char name[50];
    long int mob_no;
    float per;
    char grade;
    clrscr();
    printf("***** Demonstrate of Datatypes *****\n");
    printf("Enter roll number : \n");
    scanf("%d", &roll_no);
    printf("Enter your name : \n");
    scanf("%s", &name);
    printf("Enter your mobile number : \n");
    scanf("%d", &mob_no);
    printf("Enter Percentage : \n");
    scanf("%f", &per);
    printf("Enter your grade : \n");
    scanf("%c", &grade);
    printf("Your roll number is : %d \n", roll_no);
    printf("Your name is : %s \n", name);
```

```

print("Your mobile number is: %.d", mobno),
print("Your percentage is: %.f %", per),
print("Your grade is: %.c", grade),
getch();
}

```

Aim: Area of Rectangle

Source code

```

#include <stdio.h>
#include <conio.h>
void main()
{
    float len, bread, area;
    clrscr();
    printf("Enter the length: ");
    scanf("%f", &len);
    printf("Enter the breadth: ");
    scanf("%f", &bread);
    area = len * bread;
    printf("Area of rectangle is: %.f", area);
    getch();
}

```

*Swati
Gupta 1000*

Enter the length :

12

Enter the breadth :

5

~~Area of rectangle is :~~

60.00

75.

9:

Output:

Enter 1st number : 8

Enter 2nd number : 6

Addition of 2 numbers : 14

Subtraction of 2 numbers : 2

Multiplication of 2 numbers : 48

Division of 2 numbers : 1.3333

Practical 2

Aim: Write a C program which will show use of 4 main types of operators.

Arithmetic operations.

```
#include <stdio.h>
```

```
#include <conio.h>
```

```
void main()
```

```
{
```

```
int num1, num2, add, sub, mul, div;
```

```
clrscr();
```

```
printf ("Enter 1st number :")
```

```
scanf ("%d", &num1);
```

```
printf ("Enter 2nd number :")
```

```
scanf ("%d", &num2);
```

```
add = num1 + num2;
```

```
printf ("Addition of 2 numbers : %.d \n", add);
```

```
sub = num1 - num2;
```

```
printf ("Subtraction of 2 numbers : %.d \n", sub);
```

```
mul = num1 * num2;
```

```
printf ("Multiplication of 2 numbers : %.d \n", mul);
```

```
div = num1 / num2;
```

```
printf ("Division of 2 numbers : %.d \n", div);
```

```
getch();
```

```
}
```

Logical operators

```

#include <stdio.h>
#include <conio.h>
void main()
{
    int x,y,z ,Value1 ,Value2 ,Value3 ,Value4 ,Value5 ;
    clrscr();
    printf ("Enter 1st Value : ");
    scanf ("%d",&x);
    printf ("Enter 2nd Value : ");
    scanf ("%d",&y);
    printf ("Enter 3rd Value : ");
    scanf ("%d",&z);
    Value1 = (x<y) && (z>y);
    printf ("Value 1 is : %.d \n",Value1);
    Value2 = (x==y) && (z<y);
    printf ("Value 2 is : %.d \n",Value2);
    Value3 = (x<y) || (z=y);
    printf ("Value 3 is : %.d \n",Value3);
    Value4 = !(x==y);
    printf ("Value 4 is : %.d \n",Value4);
    Value5 = (x==y);
    printf ("Value 5 is : %.d \n",Value5);
    getch();
}

```

Output :

Enter 1st value : 9

Enter 2nd value : 8

Enter 3rd value : 2

Value 1 is : 0

Value 2 is : 1

Value 3 is : 1

Value 4 is : 0

Value 5 is : 1

85

outfit
The biggest number is: 100

Ternary operator

```
#include <iostream.h>
#include <stdio.h>
Void main()
{
    int a=100, b=20, c=50, big;
    clrscr();
    big = a > b ? a : b;
    if(a > c)
        big = a;
    else
        big = c;
    printf("The biggest number is : %d", big);
    getch();
}
```

ES

Panchal 3

Aim: Decision Statement

- * Write a program to find out odd & even numbers.

ALGORITHM:

- Step1 : Start
- Step2 : [Take Input] Read a number from the user.
- Step3 : Check if number $n \% 2 == 0$ then print even number or print odd number.
- Step4 : EXIT

```
#include <stdio.h>
#include <iostream.h>
void main()
{
    int n;
    clrscr();
    printf ("Enter a number:");
    scanf ("%d", &n);
    if (n % 2 == 0)
    {
        printf ("Even number:");
    }
    else
    {
        printf ("Odd number:");
    }
    getch();
}
```

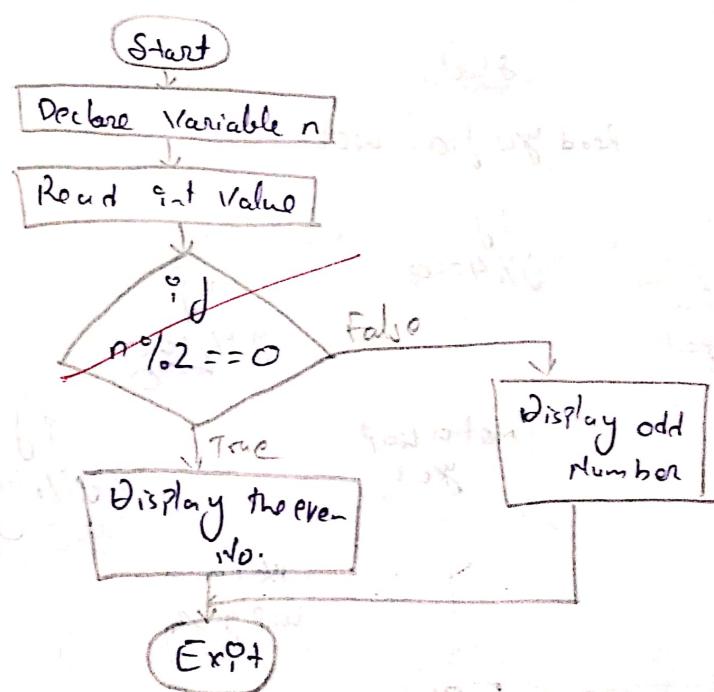
Enter a number : 26

Even number

Enter a number : 53

Odd number .

flowchart



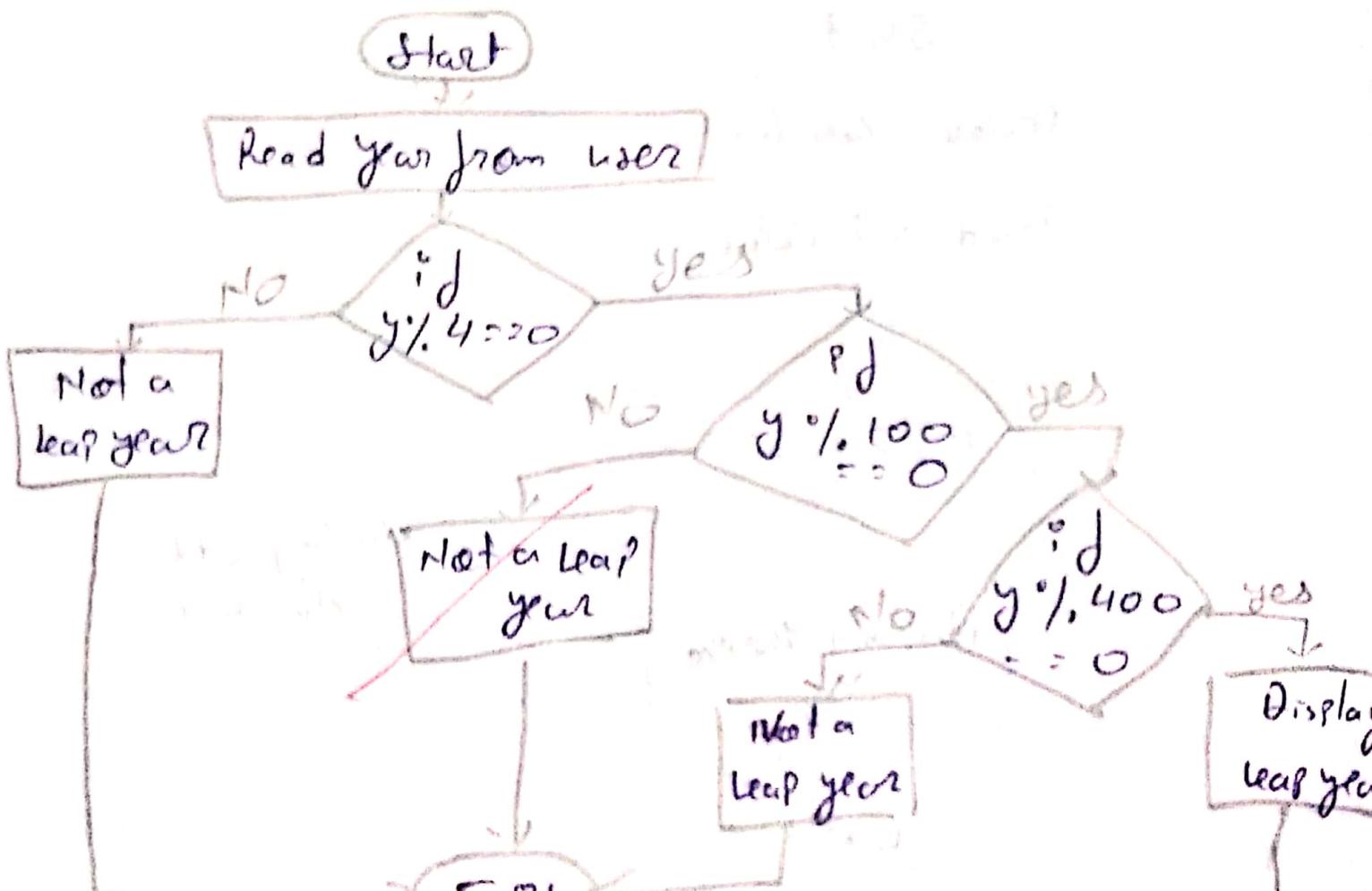
Q8

Enter a year : 2019

Not a leap year

Enter a year : 2020

leap year.



write a program to find the entered year is a leap year or

Algorithm:

Step 1: Start

Step 2: (Take input) Read year from the user.

Step 3: If $year \% 4 == 0$ and $year \% 400 == 0$ or $year \% 100 == 0$ then

Print Not a Leap year.

Step 4: EXIT.

```
#include <stdio.h>
```

```
#include <conio.h>
```

```
void main()
```

```
{
```

```
int year;
```

```
clrscr();
```

```
printf ("Enter a year:");
```

```
scanf ("%d", &year);
```

```
; if (year % 4 == 0)
```

```
{
```

```
if (year % 400 == 0)
```

```
{
```

```
printf ("Leap Year!");
```

```
}
```

```
else
```

```
{
```

```
printf ("Not a Leap Year!");
```

```
}
```

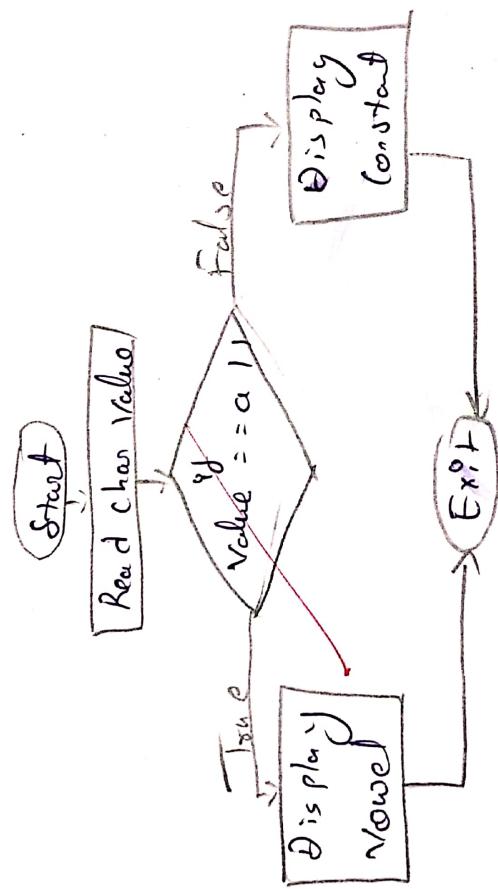
```
}
```

Scanned with CamScanner

the
} ~~last part (Not a legible)~~ (1)
class
} ~~last part (Not a legible)~~ (2)
getu (1);



Output:
Enter a alphabet : o
Vowel
Enter a alphabet : x
Constant



33

Write a program to find whether the character is vowel or consonant.

Step 1 : Start
 Step 2 : [Take input] Read character Value from user
 Step 3 : [check] if Value = 'a' || Value = 'e' || Value = 'i' || Value = 'o' || Value = 'u'
 Step 4 : Value = 'a' || Value = 'e' || Value = 'i' || Value = 'o' || Value = 'u'
 Step 5 : Exit

```

#include < stdio.h>
#include < conio.h>
void main()
{
    char a;
    clrscr();
    printf("Enter the alphabet : ");
    scanf("%c", &a);
    if((a == 'A') || (a == 'E') || (a == 'I') || (a == 'O') || (a == 'U'))
        printf("Vowel");
    else
        printf("Constant");
}
getch();

```

Practical 4

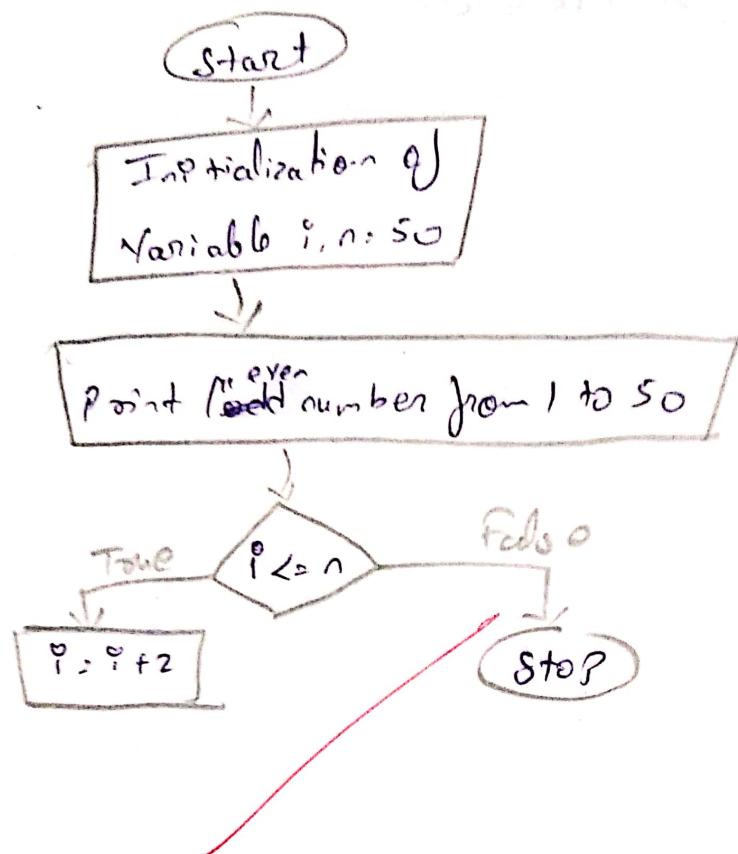
Aim: write a program to print even numbers between 1 to 50 using while loop

```
#include <stdio.h>
#include <conio.h>
void main()
{
    int i, n=50;
    clrscr();
    printf("All Even numbers from 1 to 50 are: \n");
    i=2;
    while (i <=n)
    {
        printf(" %d \n", i);
        i=i+2;
    }
    getch();
}
```

Output
All even numbers from 1 to 50 are

2
4
6
8
10
12
14
16
18
20
22
24
26
28
30
32
34
36
38
40
42
44
46
48
50

Q.B.



Algorithm

- (1) Start
- (2) Initialize the two static variable $n = 50$, $i = 1$.
- (3) use do while loop for iteration from 1 to 50.
- (4) use if condition statement to check whether is even or odd.
- (5) Increment the value of i .
- (6) Display the appropriate output.
- (7) STOP

Q8.

- b) write a program to print odd numbers return 1 to
using do while loop

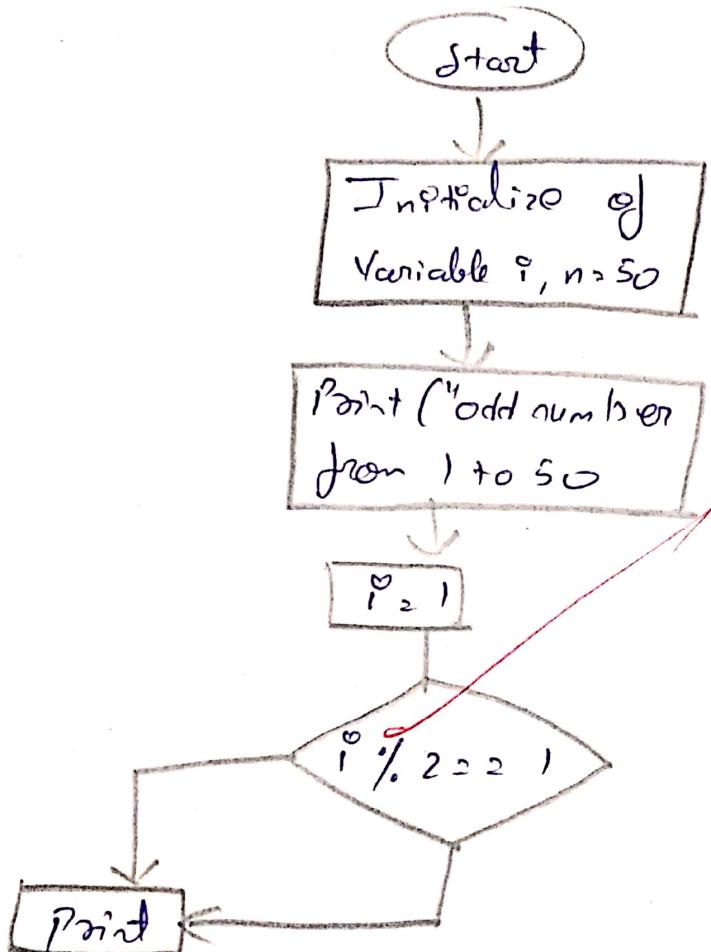
```
#include <stdio.h>
#include <conio.h>
Void main()
{
    int i, n = 50;
    clrscr();
    printf("Odd numbers from 1 to 50 are: \n", n);
    i = 1;
    do
    {
        if (i % 2 == 1)
            printf("%d \n", i);
        i++;
    } while (i <= n);
    getch();
}
```

Output:

36

1
3
5
7
9
11
13
15
17
19
21
23
25
27
29
31
33
35
37
39
41
43
45
47
49





Step 1: Start

Step 2: Initialize two variable no 50 & i = 1,

Step 3: Use do while loop for i from 1 to 50

Step 4: Use if condition statement to check whether given number is even or odd.

Step 5: Increment the value of i

Step 6: Display the appropriate output

Step 7: Stop

c) write a C program to print sum of all even numbers
 return 1 to n wrong from loop.

```
#include <stdio.h>
```

```
#include <conio.h>
```

```
void main()
```

```
{
```

```
int i, n, sum=0;
```

```
clrscr();
```

```
printf("Enter the range:");
```

```
scanf("%d", &n);
```

```
for (i=2; i<n; i=i+2)
```

```
{
```

```
sum = sum + i;
```

```
}
```

100

```
printf("Sum of all even numbers upto the range are:", sum);
```

```
getch();
```

Output:

Enter the range 10.
sum of all even numbers upto the range are 30

~~sum = sum + 1~~

~~q₂ q_{i+2}~~

Stop

Step 1: start

Step 2: initialize the rd variable of and one is dynamic $i=2$, $done=0$

Step 3: we for loop? for loop + the condition $start <= i < end$
range.

Step 4: Add current ~~prev~~ number.

Step 5: Display the appropriate.

Step 6: stop?

*Final result
1+2+3+4+5+6+7+8+9+10*

practical : 5

Aim: write C program to read array element from display them.

Step 1: Start

Step 2: Declare array of any size

Step 3: Accept number from the user

Step 4: Use conditional statement for loop.

Step 5: Again use Conditional Statement for do the output

Step 6: Exit

```
#include <conio.h>
#include <stdio.h>
Void main()
{
    int s[40], size, i;
    clrscr();
    printf ("Enter the size of array : ");
    scanf ("%d", &size);
    for (i=0; i< size; i++)
    {
        printf ("Enter value of a[%d] element = ", i);
        scanf ("%d", &a[i]);
    }
    printf ("The array elements are : ");
    for (i=0; i< size; i++)
    {
```

Output =
Enter the size of array = 2

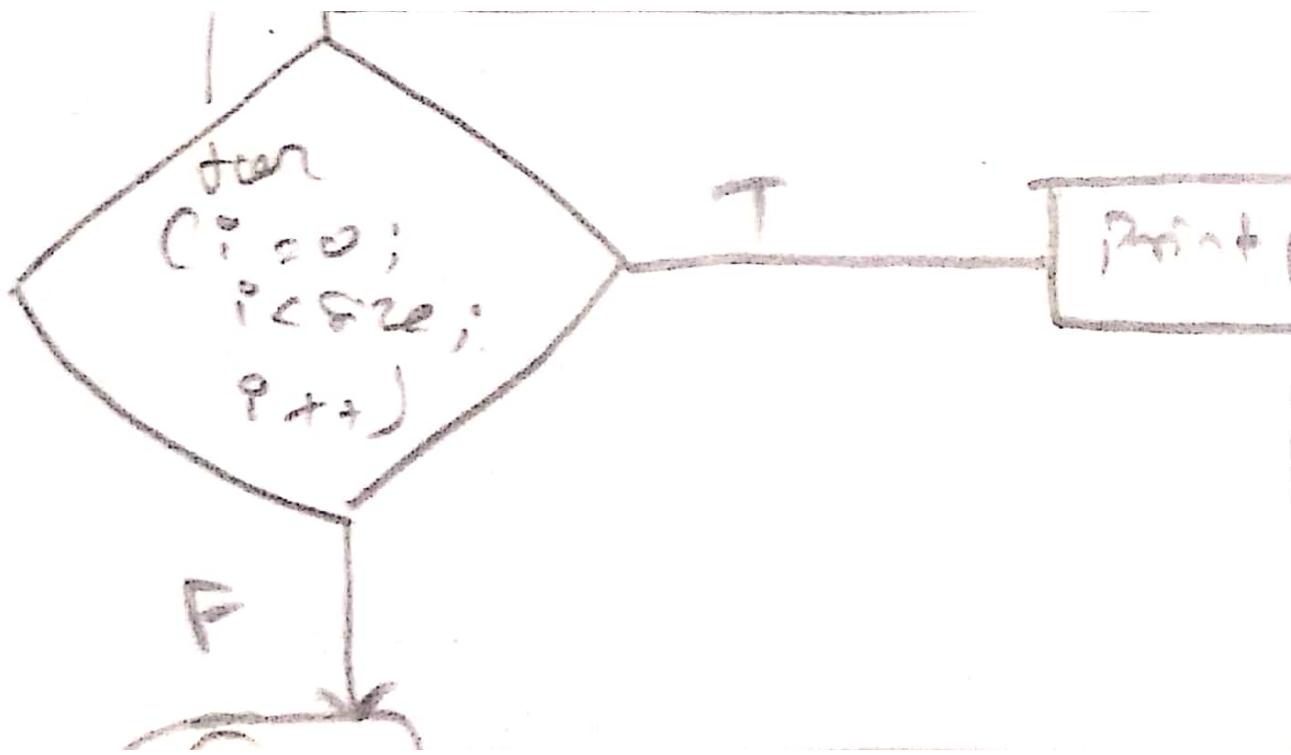
Enter the value of a[0] element 6

Enter the value of a[1] element 60

The array elements are:

$$a[0] = 6$$

$$a[1] = 60$$



print("a[i] = ", a[i]);
print("a[i] = ", a[i]);

getch();
}

{ } is a brace

Algorithm for Fibonacci series using array:

- Step 1: Start
- Step 2: Declare array of any size
- Step 3: Accept value from user
- Step 4: Initialize first element of array to 0 & element 2 to 1 as series is from 1 & 0
- Step 5: Use for loop to develop Fibonacci series.
- Step 6: Display series using printf()
- Step 7: Exit.

```
#include <conio.h>
#include <stdio.h>

Void main()
{
    int a[20], term, i, j;
    clrscr();
    printf ("Enter number of term:");
    scanf ("%d", &term);
    a[0] = 0
    a[1] = 1
    printf ("%d", a[0]);
    printf ("%d\n", a[1]);
    for (i = 2; i < term; i++)
    {
        a[i] = a[i - 2] + a[i - 1];
    }
}
```

$$a[i] = a[i-2] + a[i-1];$$

Output:

Enter number of terms: 5

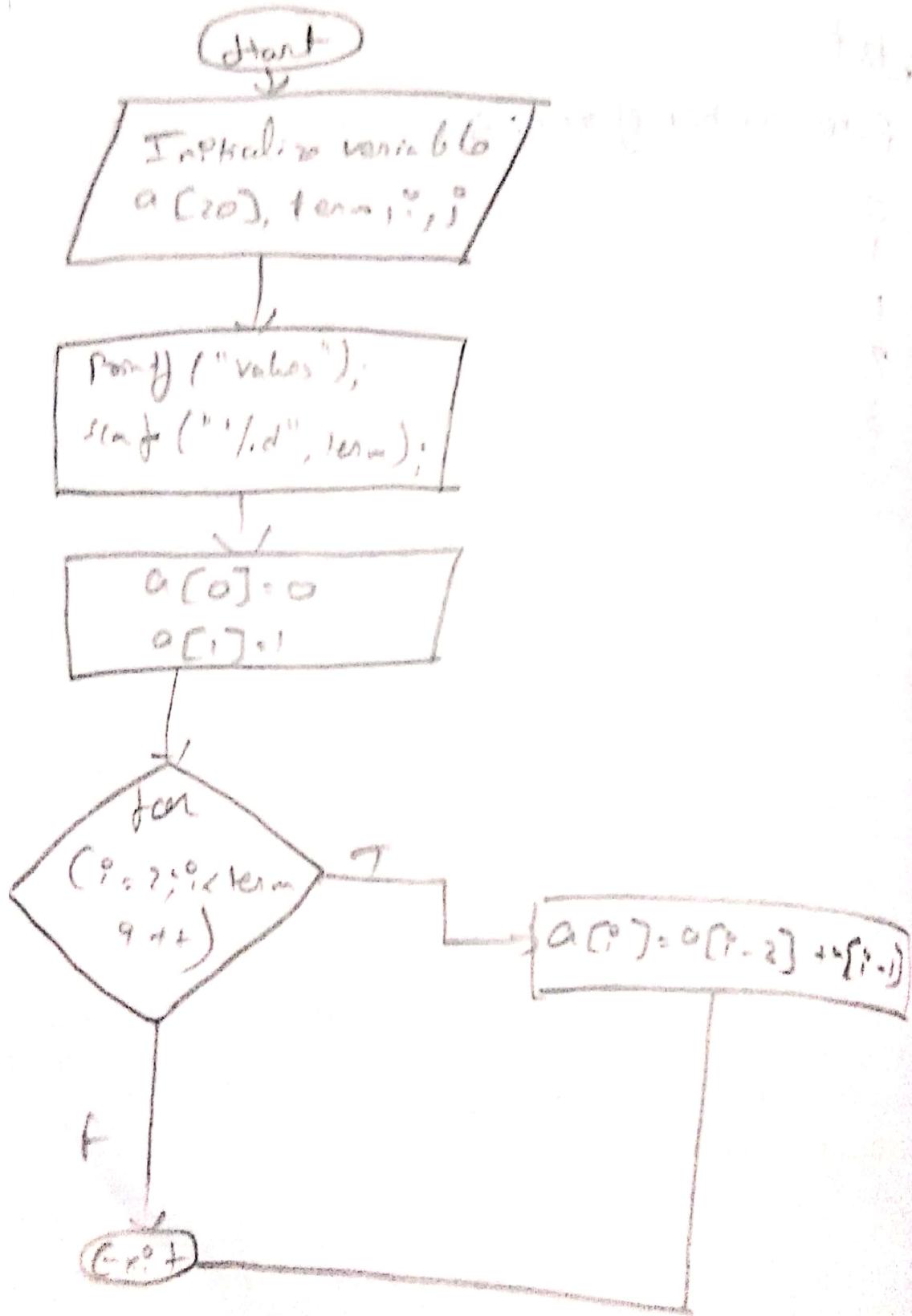
0

1

1

2

3



Step 1 = Start

Step 2 = Initialize for var variables row, col, i, j with
int datatype

Step 3 = Use for followed by another for

Step 4 = Again used for loop & print matrix as formed

Step 5 = Stop.

```
#include <conio.h>
#include <stdio.h>
Void main()
{
    int a[20][20];
    int row, col, i, j;
    clrscr();
    printf("In Enter rows");
    scanf("%d", &row);
    cout("In Enter column");
    cin("%d", &col);
    for (i=0; i<row; i++)
    {
        for (j=0; j<col; j++)
        {
            printf("In Enter the a[%d][%d]", i, j);
            scanf("%d", &a[i][j]);
        }
    }
}
```

Output:

Enter the number of row : 2

Enter the number of Columns : 2

Enter the $a[0][0]$ element : 11

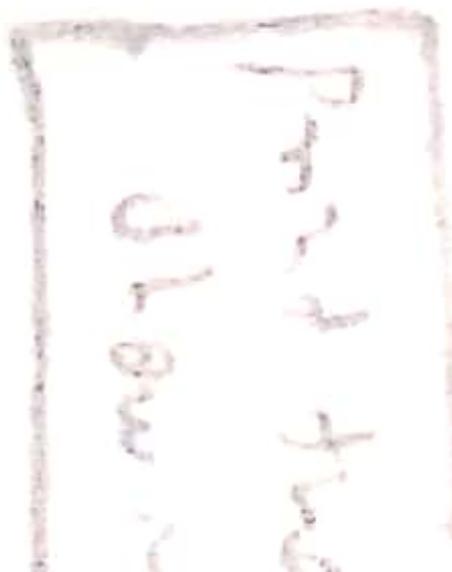
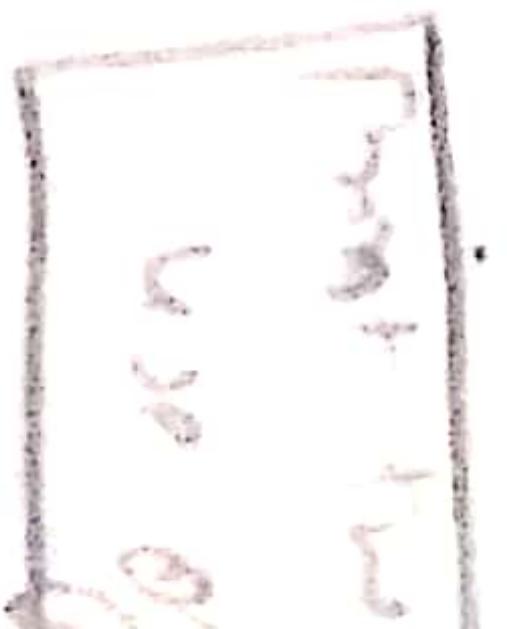
Enter the $a[0][1]$ element : 12

Enter the $a[1][0]$ element : 13

Enter the $a[1][1]$ element : 14

The display matrix :

11	12
13	14



```
pointf ("matrix so formed is :\n");
for (i=0; i<row; i++)
{
    for (j=0; j<col; j++)
    {
        pointf ("%d %t", a[i][j]);
    }
    pointf ("\n");
}
getch();
```

Practical 6

Ans:- Program on function
WAP to find factorial of a number using recursive
function.

```
#include <stdio.h>
#include <conio.h>
int factorial (int, n);
void main()
{
    int x, fact;
    clrscr();
    cout ("Enter the value of x = ");
    scanf ("%d", &x);
    fact = factorial (x);
    cout ("Factorial of x = %d", x, fact);
    getch();
}
```

```
int factorial (int n)
{
```

```
    int j;
    if (n==1)
        return (1)
    else
        = n * factorial (n-1);
    return ()
```

Output:
Enter the value: $x = 9$
factorial of $x = 362,880$

algo :-

Step 1: Start

first declare the function for calculating factorial of number
Define main function and accept the number through user
and define another variable of integer datatype.

) call the function declared above main function to calculate
factorial of number and print the value.

After that define the body of function which
calculate factorial of numbers.

else if conditional statement use to calculate accordingly

) return the value to the user.

stop.

B) Sum of digit of number :

Algo:

Steps:

- ① Start
- ② Define a function which will calculate the sum of digit
- ③ Take a number from user which obtain after two digit.
- ④ Call the function define above main function to calculate sum of digit & to define the body of function for accepting two value.
- ⑤ Use while loop and perform the calculation accordingly & print the value of sum of digits.
- ⑥ Stop.

Output:

Given two numbers = 61
Sum of digits are = 7

```

#include <iostream.h>
#include <iomanip.h>
#include <math.h>
void abc(int n);
int main()
{
    int n;
    cout << "Enter number: ";
    cin >> n;
    abc(n);
}

```

```

void abc(int n)
{
    int s, d = 0;
    while (n != 0)
    {
        s = n % 10;
        d = d + s;
        n = n / 10;
    }
    cout << "Sum of digit is: " << d;
}

```