

* OUTPUT :

* * * Demonstration of various datatypes * * *

Name of student : Abhinav Singh

Address : Mumbai , Mira Road

Roll no of student : 1772

Percentage of student : 78%.

Grade of the student : A

Mobile no of student : 9870218177

Student name : Abhinav Singh

Student address : Mumbai miraroad

student Rollno : 1772

student percentage : 78%.

student grade : A

student mobile no : 9870218177

PRACTICAL:-1

023

- * AIM:- Program to understand the basic datatype and I/O.

program :-

```
#include <stdio.h>
#include <conio.h>
void main()
{
    char name [50];
    char address [50];
    int roll_no;
    float percent;
    char grade;
    char marks [10];
    class();
    printf ("* * * Demonstration of various datatypes
            * * *");
    printf ("\n Name of student :");
    gets(name);
    printf ("\n Address :");
    scanf ("%s", &addr);
    printf ("\n Rollno of student :");
    scanf ("%d", &rollno);
    printf ("\n Percentage of student :");
    scanf ("%f", &percent);
}
```

1. Program 1

```
printf("\n Grade of student : ");
scanf("%s", &grade);
printf("\n Mobile no : ");
scanf("%s", &mob);
printf("\n Student name : %s", name);
printf("\n Student address : %s", add);
printf("\n Student roll-no : %d", rollno);
printf("\n Student percent : %f", percent);
printf("\n Student grade : %c", grade);
printf("\n Student mobile-no : %s", mob);
getch();
```

3

* Program 2:-

```
#include <stdio.h>
#include <conio.h>
void main()
{
    clrscr();
    int side, area;
    printf("Enter the side \n");
    scanf("%d", &side);
    area = side * side;
    printf("\n Area of square %d", area);
    getch();
```

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* OUTPUT:-

Enter the side: 5

Area of A Square : 25

024

Fr. 22/01/2020

* Output:-

Enter 1st no :- 8

Enter 2nd no 2

addition of 2 no : 10

subtraction of 2 no : 6

multiplication of 2 no : 16

division of 2 no : 4

PRACTICAL - 02

a) Aim:- Write a C program which will show the use of various different types of operators.

Arithmetic operators:-

SOURCE CODE:-

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

void main()
{
    int num1, num2, add, sub, mul, div;
    clrscr();
    printf("Enter 1st no: ");
    scanf("%d", &num1);
    printf("Enter 2nd no: ");
    scanf("%d", &num2);
    add = num1 + num2;
    sub = num1 - num2;
    mul = num1 * num2;
    div = num1 / num2;
    printf("Addition of 2 no's: %d\n", add);
    printf("Subtraction of 2 no's: %d\n", sub);
    printf("Multiplication of 2 no's: %d\n", mul);
    printf("Division of 2 no's: %d\n", div);
    getch();
}
```

logical operators :-

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

```
#include <iomanip.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

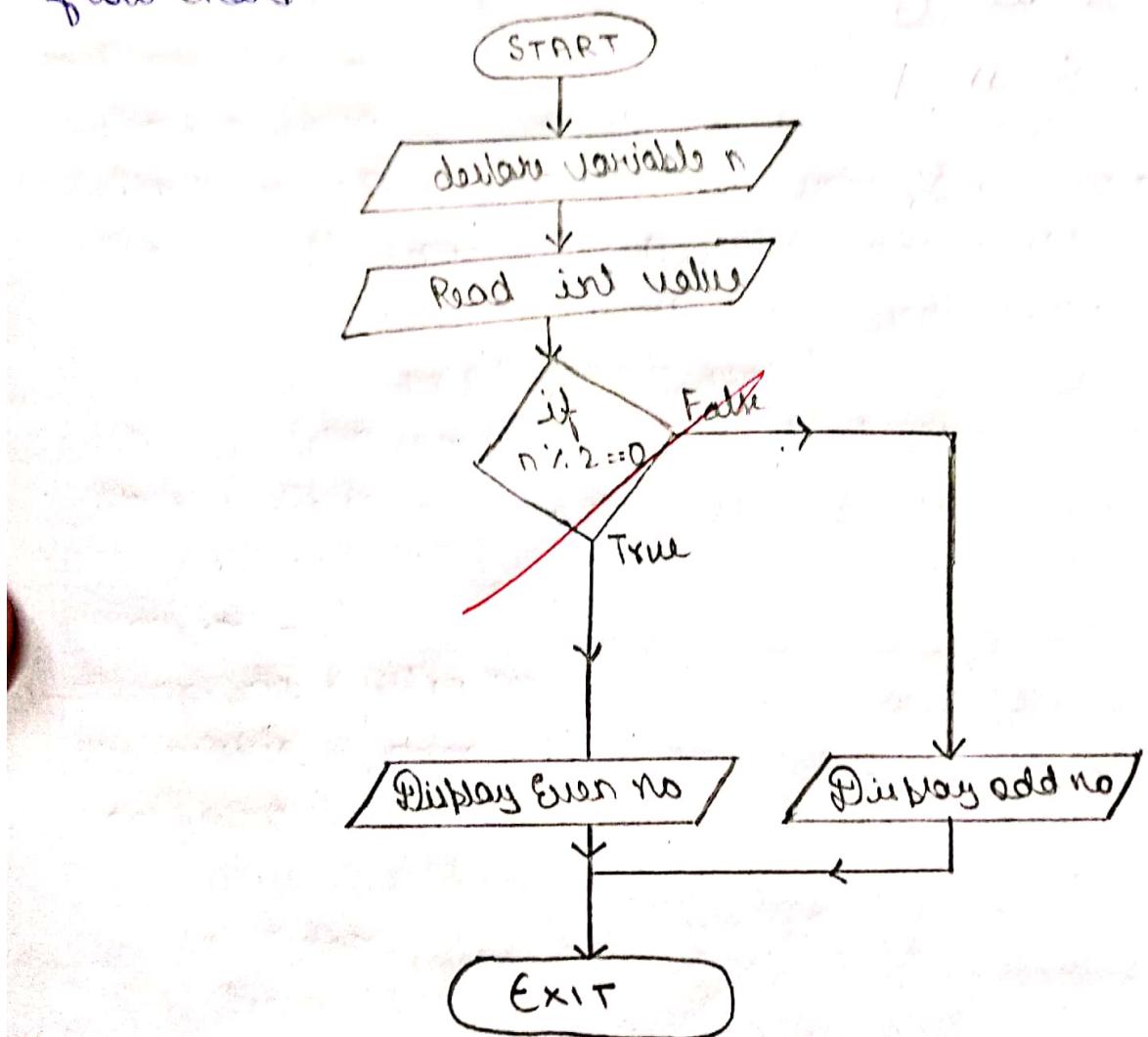
value 5 is 1

* Output :-

Enter a no : 16
Even no

Enter a no : 67
Odd no

* flow chart:-



PRACTICAL:- 3

• Aim:- Program on decision statement.

→ Write a program to find odd & even no :-

Algorithm:-

Step 1:- Start

Step 2:- [Take input] Read a number from user.

Step 3:- Check if number "n" / 2 = 0 then print "Even number" else print "Odd number".

Step 4:- Exit

→ Program:-

#include <stdio.h>

#include <wio.h>

void main()

{

int n;

clrscr();

printf("Enter a number : ");

scanf("%d", &n);

if (n % 2 == 0)

{

 printf("Even no");

}

else

{

 printf("Odd no");

}

printf("\n");

Scanned with CamScanner

3

getch();

2) Write a program to find the entered year is leap year or not.

→ Algorithm:-

step 1:- Start

step 2 :- [Take input] Read year from user.

step 3 :- If $year \% 4 == 0$ and $year \% 400 == 0$ OR

$year \% 4 == 0$ and $year \% 100 != 0$

print("leap year")

else print "Not a leap year".

step 4 :- Exit

Program:-

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

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

```
void main()
```

```
{
```

int year;

clrscr();

printf("Enter a year");

scanf("%d", &year);

if (year % 4 == 0)

```
{
```

if (year % 100 == 0)

{

if (year % 400 == 0)

* Output :-

Enter a year: 2017

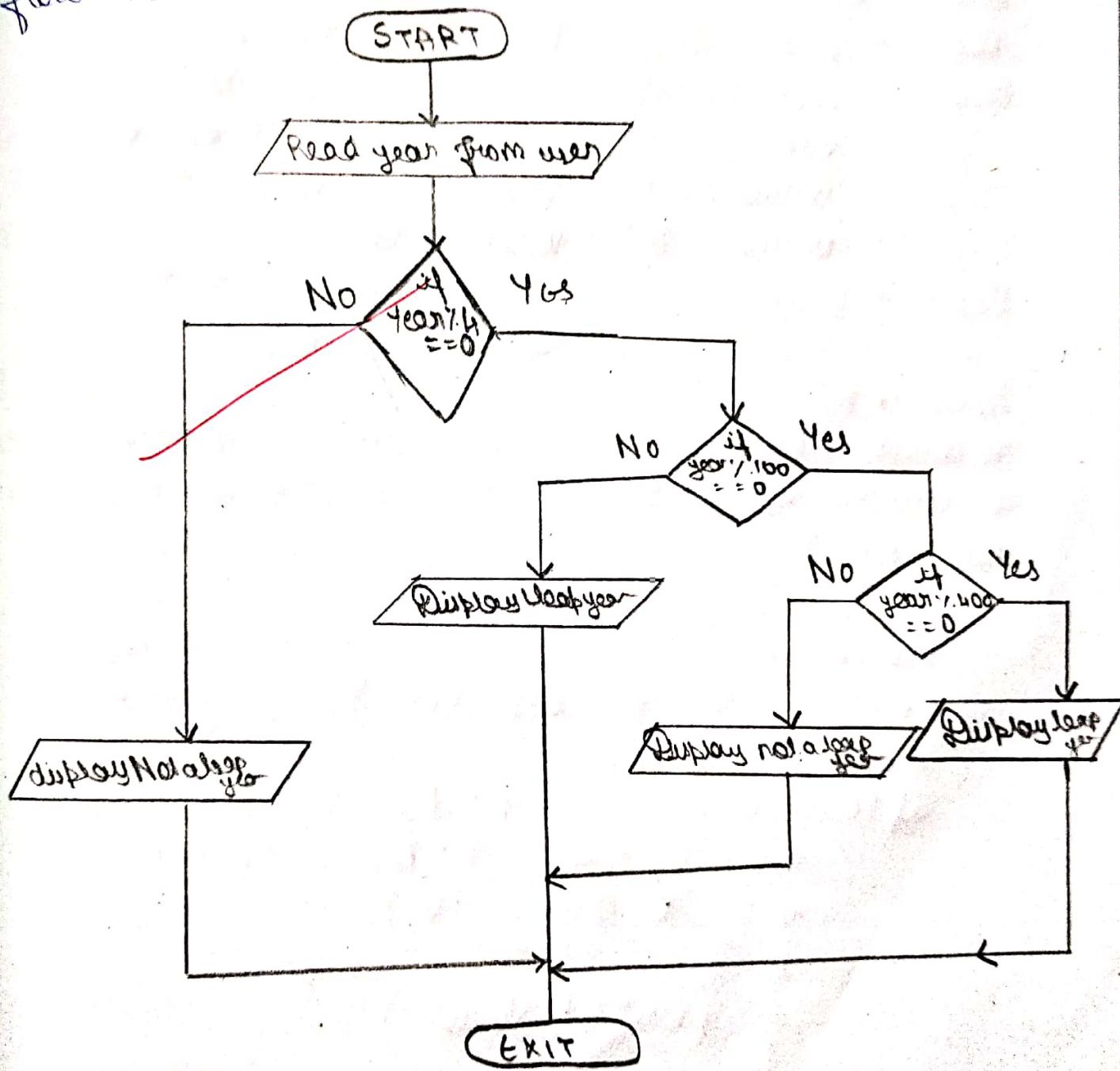
Not a leap year

028

Enter a year: 2020

leap year

* flow chart:-



```
printf("Leap year")
else
{
    printf("NOT a Leap year")
}
else
{
    printf("Not a Leap year")
}
getch();
```

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

→ ALGORITHM:-

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'
value = 'A' || value = 'E' || value = 'I' ||
value = 'O' || value = 'U'

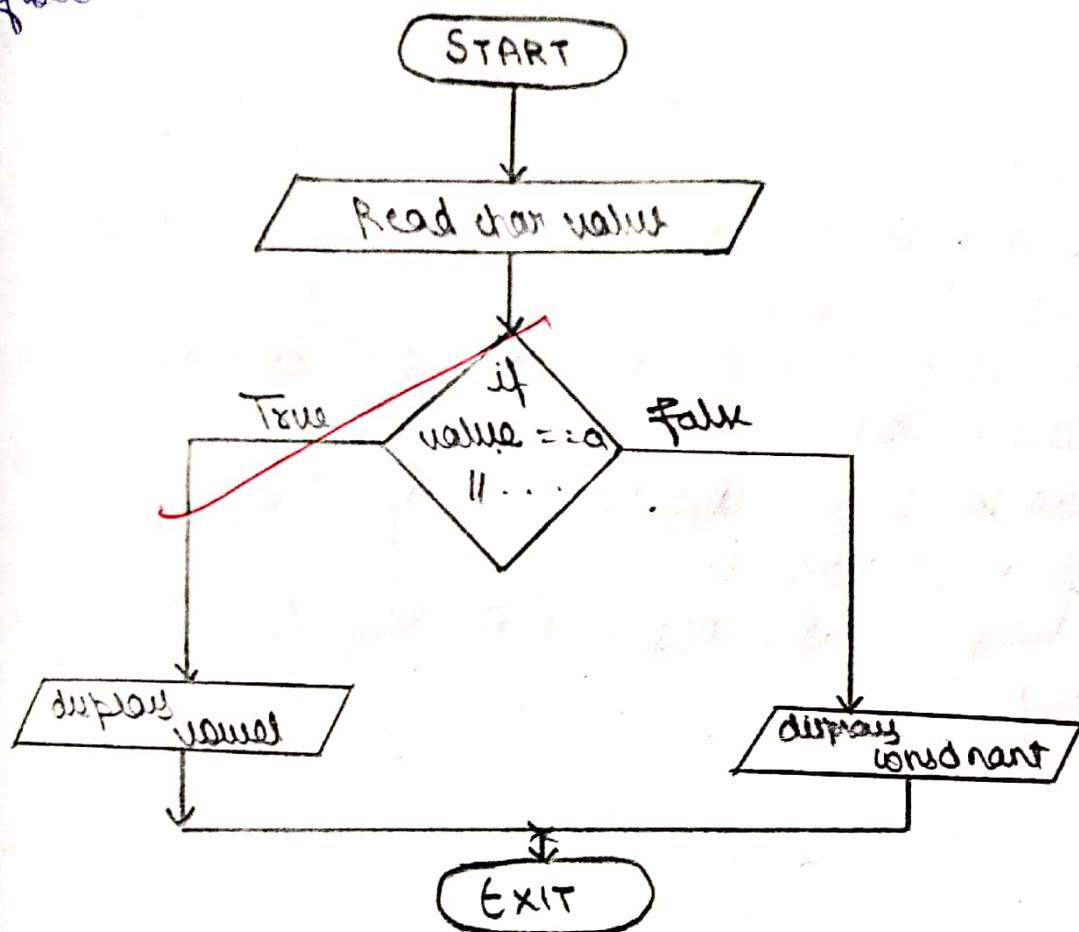
Step 4:- Exit

Source code:-

```
#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' || a = 'A' || a = 'E' || a = 'I' ||
        a = 'O' || a = 'U')
    {
        printf("Vowel")
    }
    else
    {
        printf("Consonant")
    }
}
```

* Output :-
 enter a alphabet : o
 vowel
 enter a alphabet : x
 consonant

* Flow chart :-



* Output :-

All even no 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

PRACTICE U:-4

* Aim:- Write a program to print even numbers between 1-50 using while loop.

Source code:-

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

* ALGORITHM :-

steps :-

Step 1 :- Start

Step 2 :- Initialize two variable with static variable
where $n = 50$ & $i = 2$

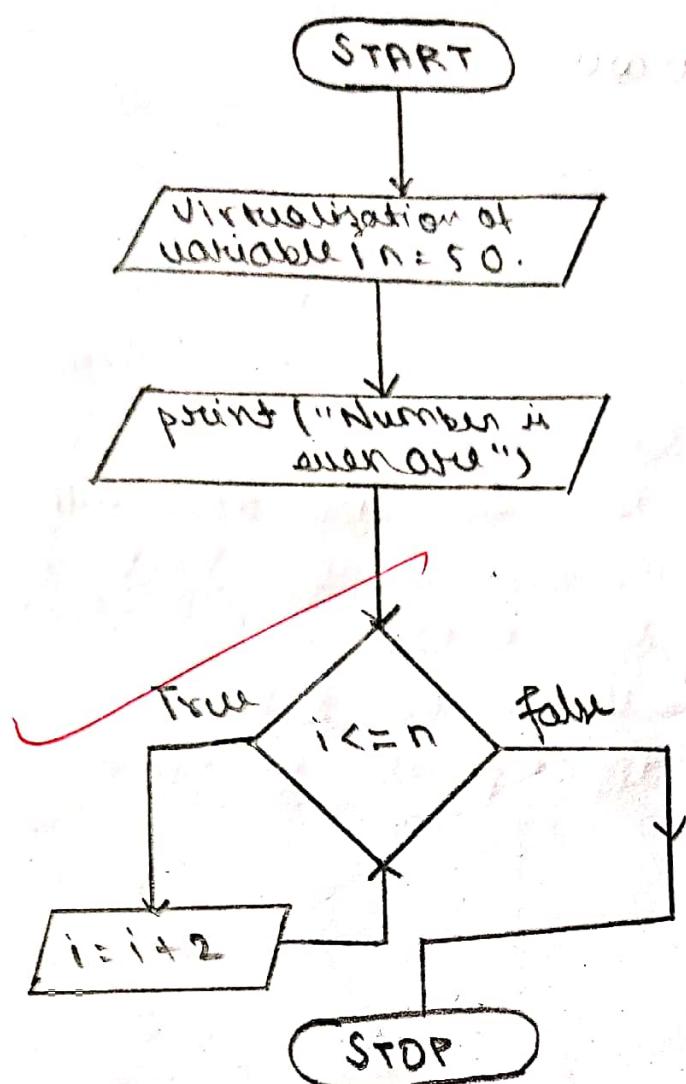
Step 3 :- Use while loop for printing the even numbers
upto the range 50

Step 4 :- Adding 2 to current even number will
give next even number

Step 5 :- Display the appropriate output

Step 6 :- Stop

* Flowchart :



032

* Output:-

Odd nos from 1 to 90 are

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.

b) Aim:- Write a program to print odd no between 1-50 using do while loop.

Source code:-

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

ALGORITHM :- ~~an algorithm is a step by step procedure to solve a problem~~

Step 1 :- Start

Step 2 :- Initialize two static variable $n = 50$, $i = 1$

Step 3 :- Use do while loop for user asks from 1 to 50

Step 4 :- Use if condition statement to check whether given no is even or odd

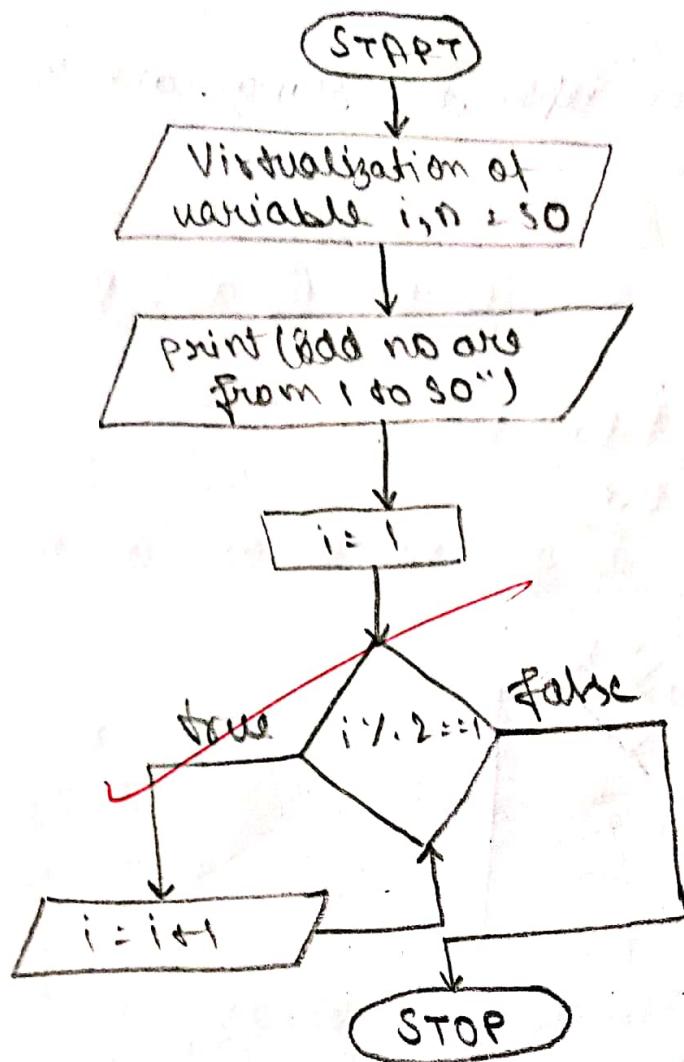
Step 5 :- Increment the value of $i & 1$

Step 6 :- Display the appropriate output

Step 7 :- Stop

Flowchart

034



Q) Write a C program to print sum of odd even no from using for loop & between the two numbers obtained from user:-

```
#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;
    }
    printf("Sum of all even no within range is %d", sum);
    getch();
}
```

* Algorithm:-

Step 1:- Start

Step 2:- Initialize three variable and one is dynamic i=2, sum=0, n;

Step 3:- Use for loop for check the given range.

Step 4:- Add current even number.

Step 5:- Display the appropriate

Step 6:- Loop.

*Ans.
05/07/2020*

PRACTICAL :- 5

- * Aim:- To understand the concept of arrays.
- * One Dimensional ARRAY:-

Program 1:- Find the largest no in an array
10 no.

```
#include <stdio.h>
#include <conio.h>
{
    clrscr();
    int i, j, a[10];
    printf("In enter 10 data of array :");
    for (i = 0; i <= 0; i++)
    {
        scanf("%d", &a[i]);
    }
    l = a[0];
    for (i = 1; i < 10; i++)
    {
        if (l < a[i])
            l = a[i];
    }
    printf("Largest : %d", l);
    getch();
}
```

Output:-

Enter 10 data of array

1 2 3 4 5 6 7 8 9 10 11 for size of array
largest = 11

036

Output:-

Enter 10 data of array 1 2 3 4 5 6 7 8 9 10

No of even no 5

- * Program :- Find no. of even no's
- Algorithm:-**
- s1:- start
 - s2:- Take the input from the user; i, x, s and array of 10 space.
 - s3:- Print the question to enter the data in array.
 - s4:- Take 10 inputs by using the for loop again and again.
 - s5:- Use for loop to check with the if loop inside for loop and check if it is even or not.
 - s6:- Then increment the value of an variable if the data is even no.
 - s7:- Print the no. of even no's.

Program :- takes input from user & prints it.

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

```
#include <conio.h> // placed at real top of file
```

```
void main()
```

```
{ // this will be at bottom of file
```

```
int i, x, c, a[10];
```

```
clrscr();
```

```
printf ("\n Enter 10 data of array");
```

```
for (i=0; i<10; i++)
```

```
{
```

```
    printf ("%.d , %a[i]);
```

```
}
```

```
{=0;
```

Scanned with CamScanner

for (i=0; i<10; i++)

{
 x = a[i] * 2;

 if (x == 0)

 a[i] = 0;

}

 printf("%d ", a[i]);

 printf("\n No. of even no. = %d", c);

 scanf("%d", &n);

}

 printf("The sum of odd nos. is %d", sum);

- * Write a program in C to develop Fibonacci series using array.

Algorithm:-

S1:- declare a array of anysize of data type int;

S2:- Accept a value from user till you want to display the fibonacci series start from 0 & 1

S3:- Use for loop to develop fibonacci series

S4:- Use for loop to display the series

S5:- display the series using printf() function.

Program to dev. of fibo n terms

(+ if(i>j;0;i) a[i])

i((i>0;i)&trin)

10/7

* Output:-

Enter the no of term

0
1
1
2
3
5
8

* Javu code : ~~success to compilation error for std::cout~~

```
#include <iostream.h>
#include <stdio.h>
void main()
{
    int a[20], term, i, j;
    cout << "Enter the number of terms : ";
    scanf("%d", &term);
    a[0] = 0;
    a[1] = 1;
    cout << a[0] << endl;
    cout << a[1] << endl;
    for (i = 2; i < term; i++)
    {
        a[i] = a[i - 1] + a[i - 2];
        cout << a[i] << endl;
    }
}
```

i will do it now, I am doing

it always on my own & doing

i know & do it myself

* To represent multidimensional array in matrix format.

Algorithm:-

S1:- Start

S2:- Accept 4 variable i, j, row, col.

S3:- declare the array of any size.

S4:- Ask the user to enter the value
of no. of row they want.

S5:- Ask the user to enter the no. of column they want.

S6:- By using for loop and then nested for loop for representation of data user will enter "m*n" thing.

S7:- Print the inputed data by print statement include for indentation between them.

Code:-

```
#include <stdio.h>
#include <conio.h>
void main()
{
```

```
    int i,j, row, col, a[50];
    clrscr();
```

```
    printf("Enter the no of row");
    scanf("%d", &row);
```

*Output:-

Enter the no of row 3

040

Enter the no of col 3

The display matrix

3 2 1

4 3 0

5 3 6

```

printf ("Enter the no. of val");
scanf ("%d", &val);
printf ("\n The display matrix");
for (i=0; i<row; i++)
{
    for (j=0; j<val; j++)
    {
        printf ("\t %d", a[i][j]);
    }
    printf ("\n");
}
getch();

```

Practical 10

- * Aim:- Program/Function:
- WAP in C which will demonstrate the use of getch(), getche() and getchar().

Source code :-

```
#include <stdio.h>
#include <conio.h>
void main()
{
```

```
    char ch = 'a';
    printf("\n Press any key to continue");
    getch();
    printf("\n Continue Y/N");
    getchar();
}
```

i("a") going to
Getch is working
i("ab")

- WAP in C which will demonstrate the use of puts and putchar

→

```
#include <stdio.h>
#include <conio.h>
void main()
```

```
{
```

```
    char ch = "a";
    putch(ch);
    putchar(ch);
    getch();
```

}

* Output :-

Press any key to continue
Enter an alphabet a enter

042

* Output :-

Enter an alphabet a
Continue Y/N Y enter

* Output :-

aa

* Output:-

Enter the value of x : 4
Factorial of 4 = 24.

WAP to find factorial of a number using recursive function.

```
#include <stdio.h>
#include <conio.h>
int factorial (int n);
void main()
{
```

```
clrscr();
```

```
int n, fact;
```

```
printf ("In Enter value of x: ");
scanf ("%d", &n);
```

```
fact = factorial (x);
```

```
printf ("In Factorial of %d = %d", n, fact);
getch();
```

```
}
```

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

```
{
```

```
int f;
```

```
if (n == 1)
```

```
return 1;
```

```
else
```

```
f = n * factorial (n - 1);
```

```
return (f)
```

```
}
```

• 1) Sum of digits of entered numbers:

```
#include <stdio.h>
#include <conio.h>
void abc (int n);
void main()
{
```

```
    clrscr();
    int n;
    printf ("Enter number : ");
    scanf ("%d", &n);
    abc (n);
    getch ();
}
```

```
void abc
void abc (int n)
{
```

```
    int s, r = 0;
    while (n != 0)
```

```
{
```

```
    r = n % 10;
```

```
    s = s + r;
```

```
    n = n / 10;
```

```
}
```

```
    printf ("Sum of digits = %d", s);
```

```
g
```

* Output :-

Enter number : 3 1

sum of digit : 4

044

* Output:-

Enter value of x,y,z : 4 6 9

Average = 6.33333

5) Average of 3 (entered numbers)

```
#include <stdio.h>
#include <conio.h>
void average (int sum);
void sum (int a, int b, int c);
void main()
{
    clrscr();
    int x, y, z;
    printf ("\n Enter value of x, y, z");
    scanf ("%d %d %d", &x, &y, &z);
    sum (x, y, z);
    getch();
}
```

```
void sum (int a, int b, int c)
{
```

```
    int s;
    s = a + b + c;
    average (s);
}
```

```
void average (int sum)
{
```

```
    float average ;
    average = sum / 3.0 ;
    printf ("\n average : %.2f", avg);
```

```
}
```