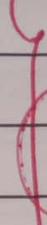


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C Program.

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PRACTICAL-01

23

AIM :- To Study the use of different types of datatypes.

Source Code :-

```
#include <stdio.h>
#include <conio.h>
void main()
{
    char name[50];
    char add[50];
    int rollno;
    float percent;
    char grade;
    long int mob;
    clrscr();
    printf("----- Demonstrate Various
datatype -----");
    printf("Name of Student\n");
    scanf("%s", &name);
    printf("Address of the Student\n");
    scanf("%s", &add);
    printf("Rollno of the Student\n");
    scanf("%d", &rollno);
    printf("Percentage of the Student\n");
    scanf("%f", &percent);
    printf("Grade of the Student\n");
    scanf("%c", &grade);
```

Output 8 -

----- Demonstrate various data type.....

Name of student :-

Adarsh

Address of student :-

Panis

Roll no of student :-

1739

Percentage of the student :-

74.40

Grade of the student :-

A

Mobile no. of the student :-

9127380118

Student name :- Adarsh

Student add :- Panis

Student rollno :- 1739

Student percent :- 74.40

Student grade :- A

Student mob :- 9127380118.

```

    printf ("Mobile no. of the student");
    scanf ("%ld", &mob);
    printf ("\n Student name & %S", name);
    printf ("\n Student addr. & %S", add);
    printf ("\n Student rollno.: %d", rollno);
    printf ("\n Student percent & %f", per);
    printf ("\n Grade :- %S", grade);
    printf ("\n Student mob.:- %ld", mob);
    getch();
}

```

PROGRAM:- 2

AIM :- Area of Circle :

Source Code:

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

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

```
void main()
```

```
{
```

```
float r;
```

```
float area;
```

```
float pi = 3.14;
```

```
clrscr();
```

```
printf ("Enter the radius \n");
```

```
scanf ("%f", &r);
```

```
area = pi * r * r;
```

```
printf ("Area of circle %f", area);
```

```
getch();
```

```
}
```

Output :-

Enter the radius

8

Area of circle 200.96

24

Output :-

Enter 1st number : 9

Enter 2nd number : 8

Addition of 2 numbers = 17

Subtraction of 2 numbers = 1

Multiplication of 2 numbers : 72

Division of 2 numbers : 1

PRACTICAL:- 02

Ques:- Write a C program which will show the use of various different type of operators.

- Arithmetic Operator

Source code:-

```
#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 Operations :

```
#include <stdio.h>
#include <conio.h>
void main()
{
    int x,y,z,value1,value2,value3,value4,
        value5;
    clrscr();
    printf("Enter the 1st value : ");
    scanf("%d",&x);
    printf("Enter the 2nd value : ");
    scanf("%d",&y);
    printf("Enter the 3rd value : ");
    scanf("%d",&z);
    value1 = (x < y) && (z > y);
    printf("Value1 is : %d \n",value1);
    value2 = (x = y) && (z < y);
    printf("Value2 is : %d \n",value2);
    value3 = (x < y) || (z > y);
    printf("Value3 is : %d \n",value3);
    value4 = !(x == y);
    printf("Value4 is : %d \n",value4);
    value5 = (x == z);
    printf("Value5 is : %d \n",value5);
    getch();
}
```

Output :-

Enter 1st value : 1

26 25

Enter 2nd value : 9

Enter 3rd value : 2

Value 1 is : 0

Value 2 is : 1

Value 3 is : 1

Value 4 is : 0

Value 5 is : 1

Q.

Output 8

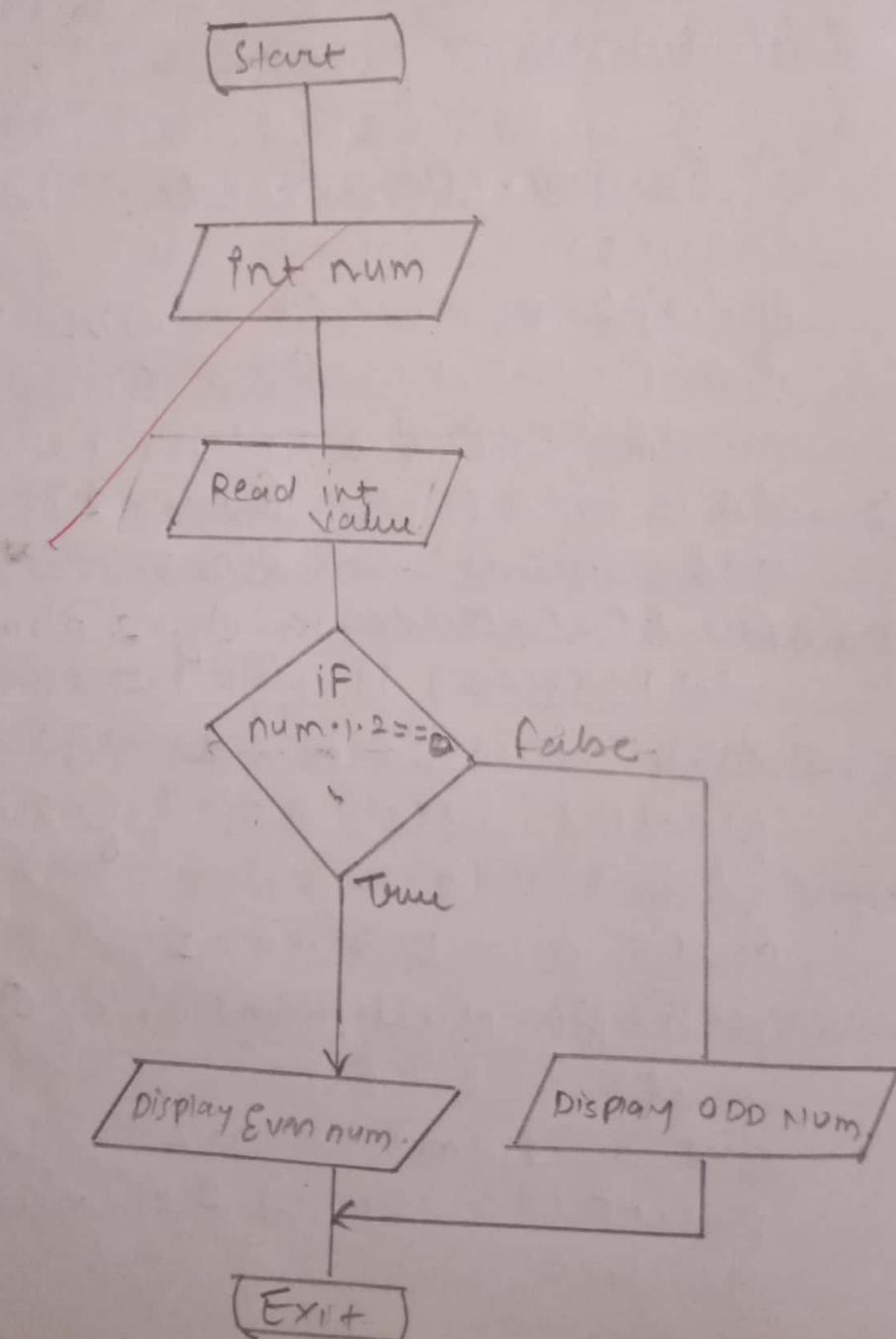
Enter a number % 26

EVEN NUMBER

Enter a number % 25

ODD NUMBER

Flowchart 8



Aim :- Program with operators on Decision Statement.

- Write a program to find odd & even number:-

Algorithm :-

Step 1 :- Start

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

Step 3 :- Check if number $\cdot 1 \cdot 2 == 0$ then print 'Even Number' else print 'Odd Number'

Step 4 :- Exit

Source code :-

```
#include <stdio.h>
#include <conio.h>
Void main()
{
    int num;
    clrscr();
    printf("Enter a number : ");
    scanf("%d", &num);
    if (num % 2 == 0)
    {
        printf(" EVEN NUMBER");
    }
    else
    {
        printf(" ODD NUMBER");
    }
}
```

getch();

- 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 $\text{year} \% 4 == 0$ and $\text{year} \% 400 == 0$ or
 $\text{year} \% 4 == 0$ and $\text{year} \% 100 == 0$
 print "LEAP YEAR"

Step 4: Exit

Source codes

```
#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)
```

```
{
```

```
        if (year % 100 == 0)
```

```
{
```

Output :-

Enter a year :- 2020

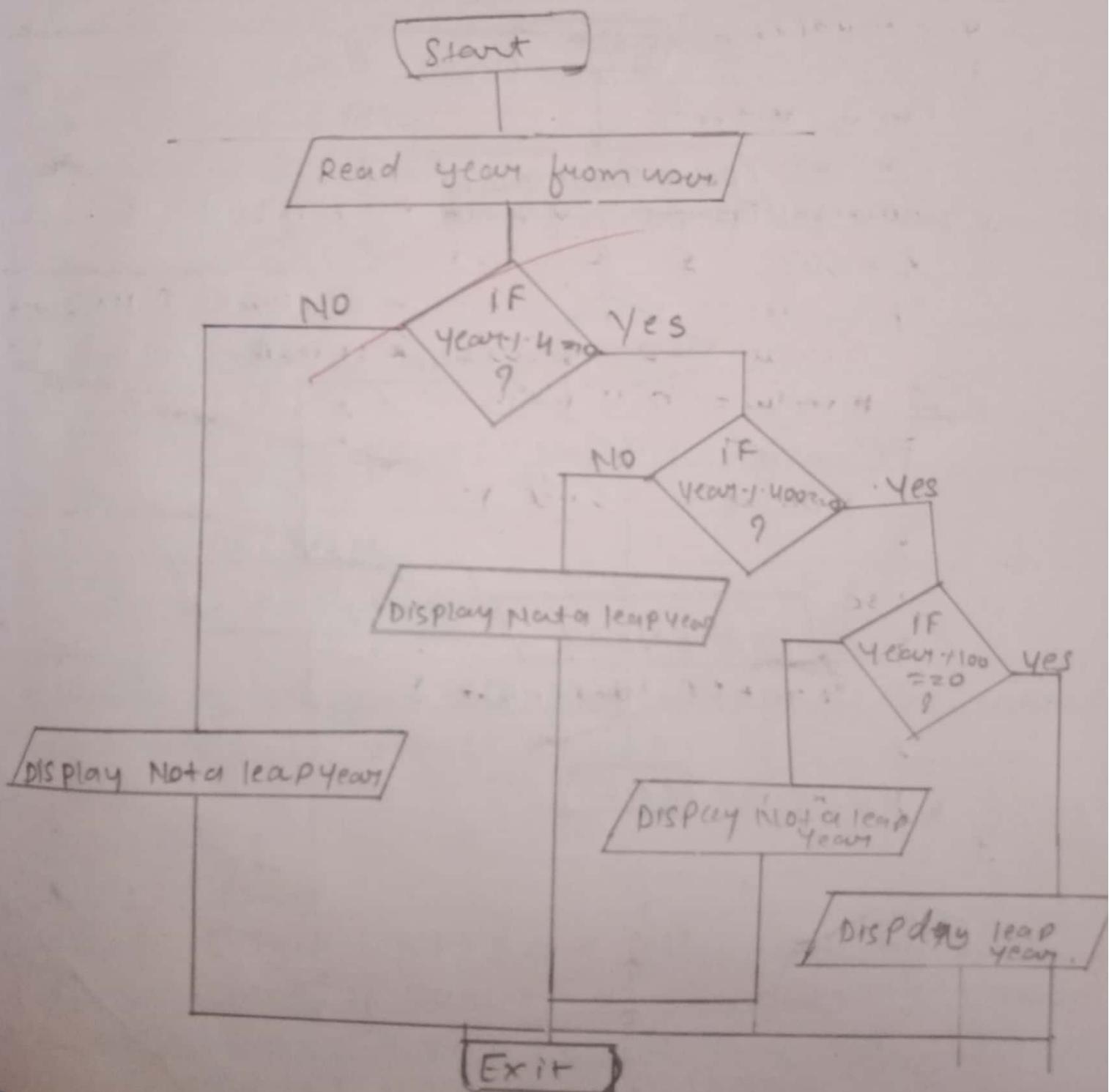
28

Leap year

Enter a year :- 2017

Not a leap year.

Flow chart :-

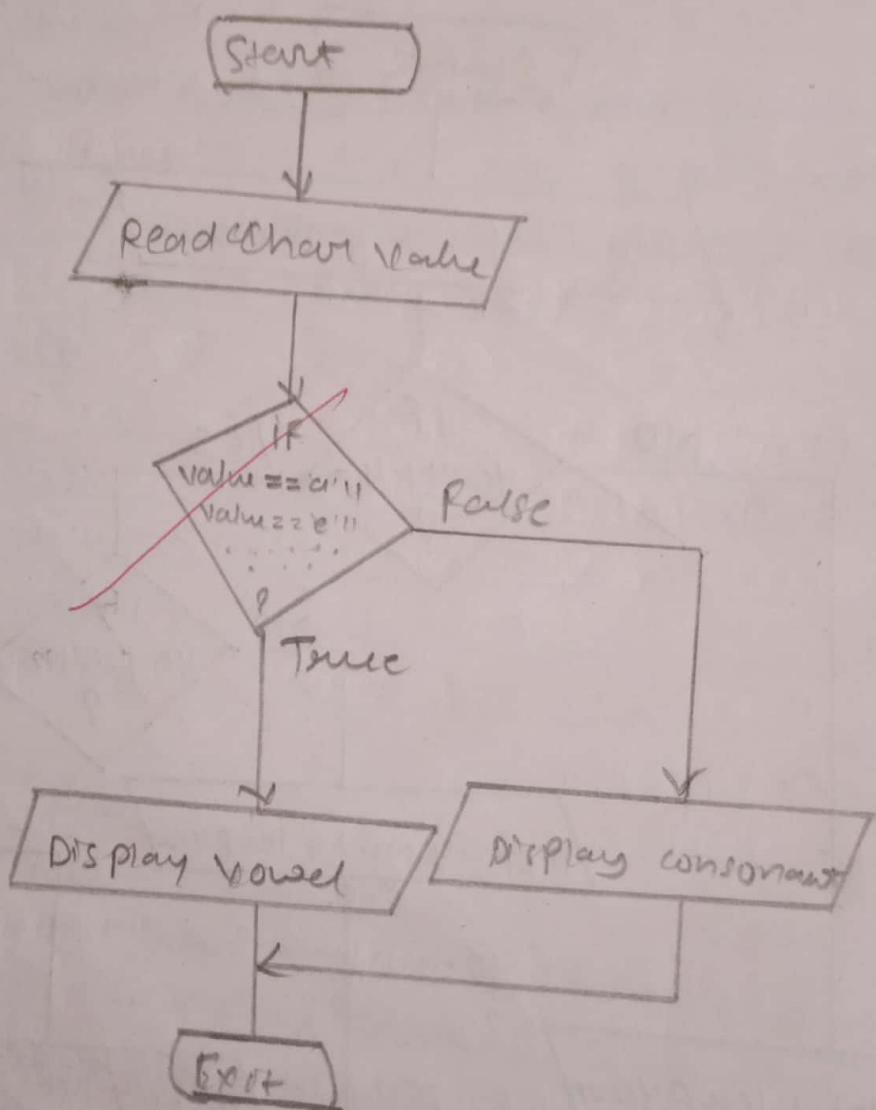


8s Output

Enter the Alphabet Value & A
VOWEL

Enter the Alphabet Value & Z
Consonant.

Flowchart



```

if (year % 2 == 0) {
    printf("leap year");
} else {
    printf("Not a leap year");
}
else {
    printf("Sorry Not a leap year");
}
else {
    printf("Not a leap year");
}
getch();
}

```

- Write a program to find whether the entered character is vowel or not.

Algorithm :-

Step 1 : Start

Step 2 : [Check Input] Read character ^{from} user by 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'.

PS.

point "Vowel";
else point "consonant"

Step 4: Exit

Source Code:

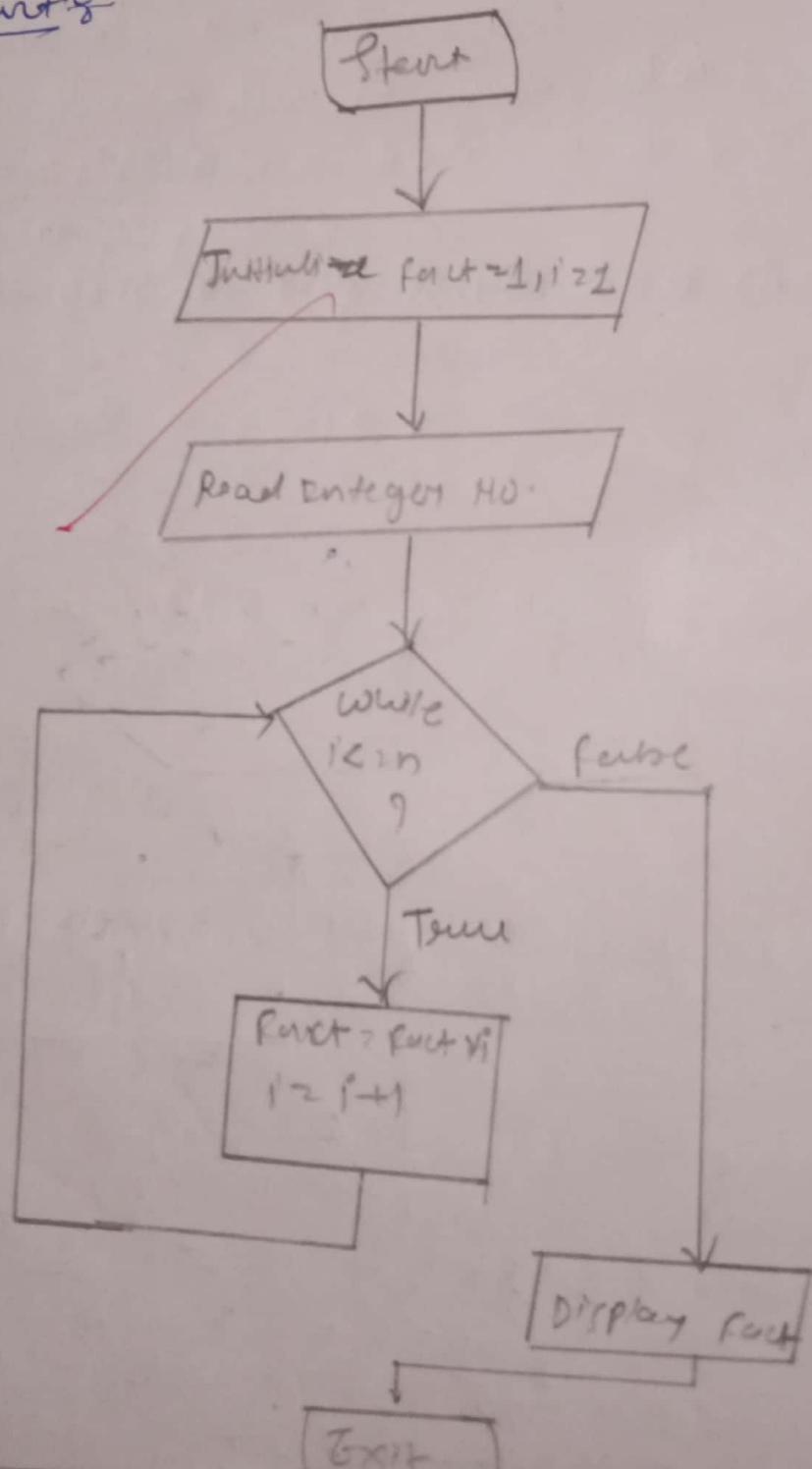
```
#include <stdio.h>
#include <conio.h>
Void main()
{
    char value;
    clrscr();
    printf("Enter the alphabet value: ");
    scanf("%c", &value);
    if (value == 'a' || value == 'e' || value == 'i' || value
        == 'u' || value == 'A' || value == 'E' || value
        == 'O' || value == 'U')
    {
        printf("Vowel");
        printf("Vowel");
    }
    else
    {
        printf("Consonant");
    }
    getch();
}
```

Output :-
Enter the number = 4
Factorial = 24.

Enter the number = 6

Factorial = 720.

Flowchart :-



AIM :- To program on group statement

• Write a program to find factorial of number.

Algorithm:-

Step 1 :- Start.

Step 2 :- Initialize Variable fact = 1 and i = 1

Step 3 :- [TAKE input] Read an integer number from user.

Step 4 :- Repeat the step until $i \leq 0$ input value
 → fact = fact * i
 → → ~~i = i + 1~~

Step 5 :- Display Factorial

Step 6 :- Exit

Source code:-

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

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

```
void main()
```

```
{
```

```
int fact = 1, i = 1, n;
```

```
clrscr();
```

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

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

```
while (i <= 0)
```

```
{
```

```
fact = fact * i;
```

```
i = i + 1
```

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

- Write a program to make fibonacci series.

Algorithm:

Step 1: Start

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

Step 3: Display variable c ; $a=0$, $b=1$, $i=1$

Step 4: Display a , b

Step 5: Repeat Step until $i <= n$ entered value

$$\rightarrow c = a + b$$

\rightarrow Display c

$\rightarrow a = b$

$\rightarrow b = c$

$\rightarrow i++$

Step 6: Exit

Source Code:

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

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

```
void main()
```

{

```
int a=0, b=1, i, n;
```

clrscr();

```
printf("Enter the Range for Fibonacci Series");
scanf("%d", &n);
```

```
printf("%d %d", a, b);
```

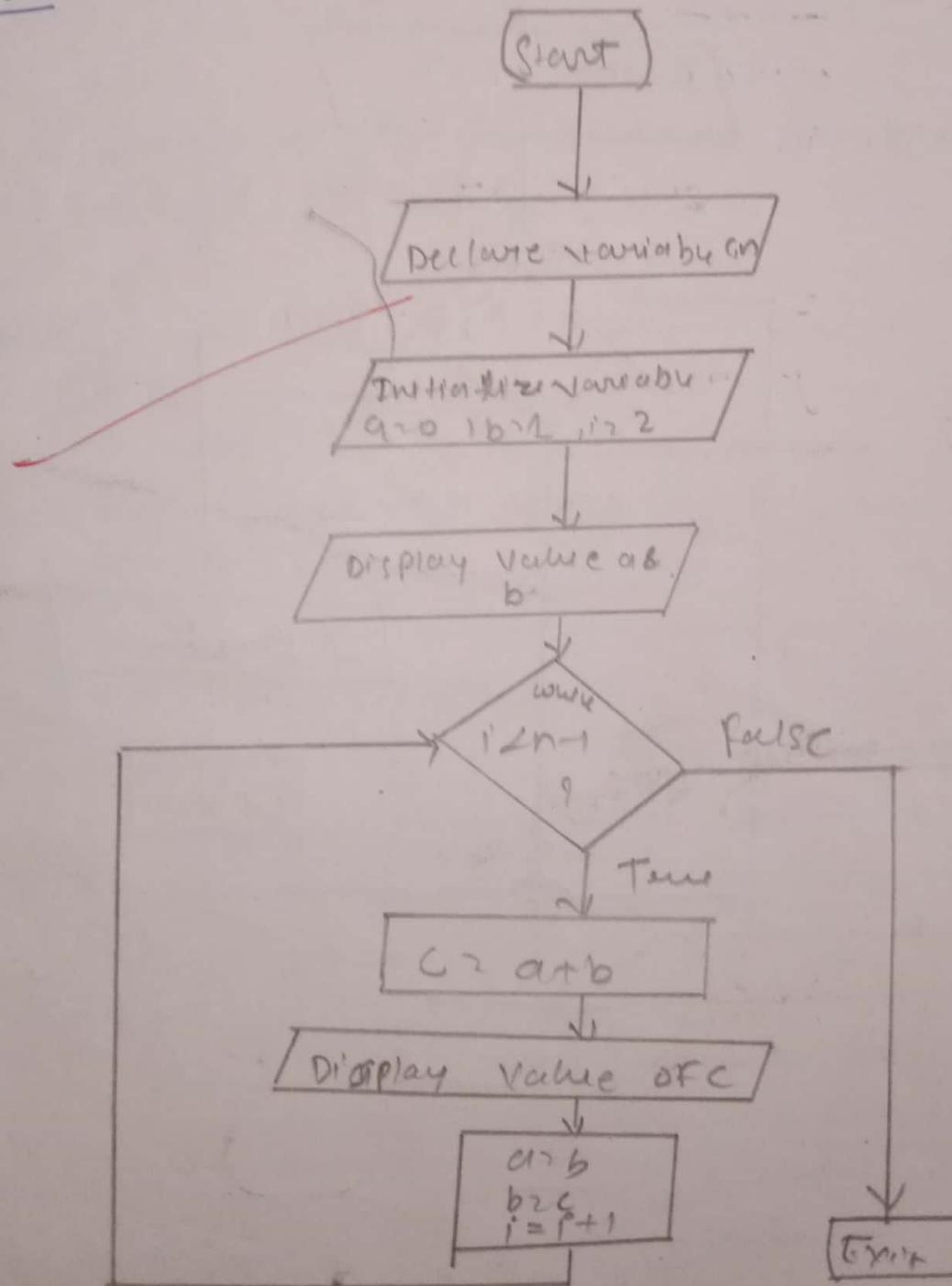
Output

Enter the Range for Fibonacci series : 8

32

0
1
1
2
3
5
8
13

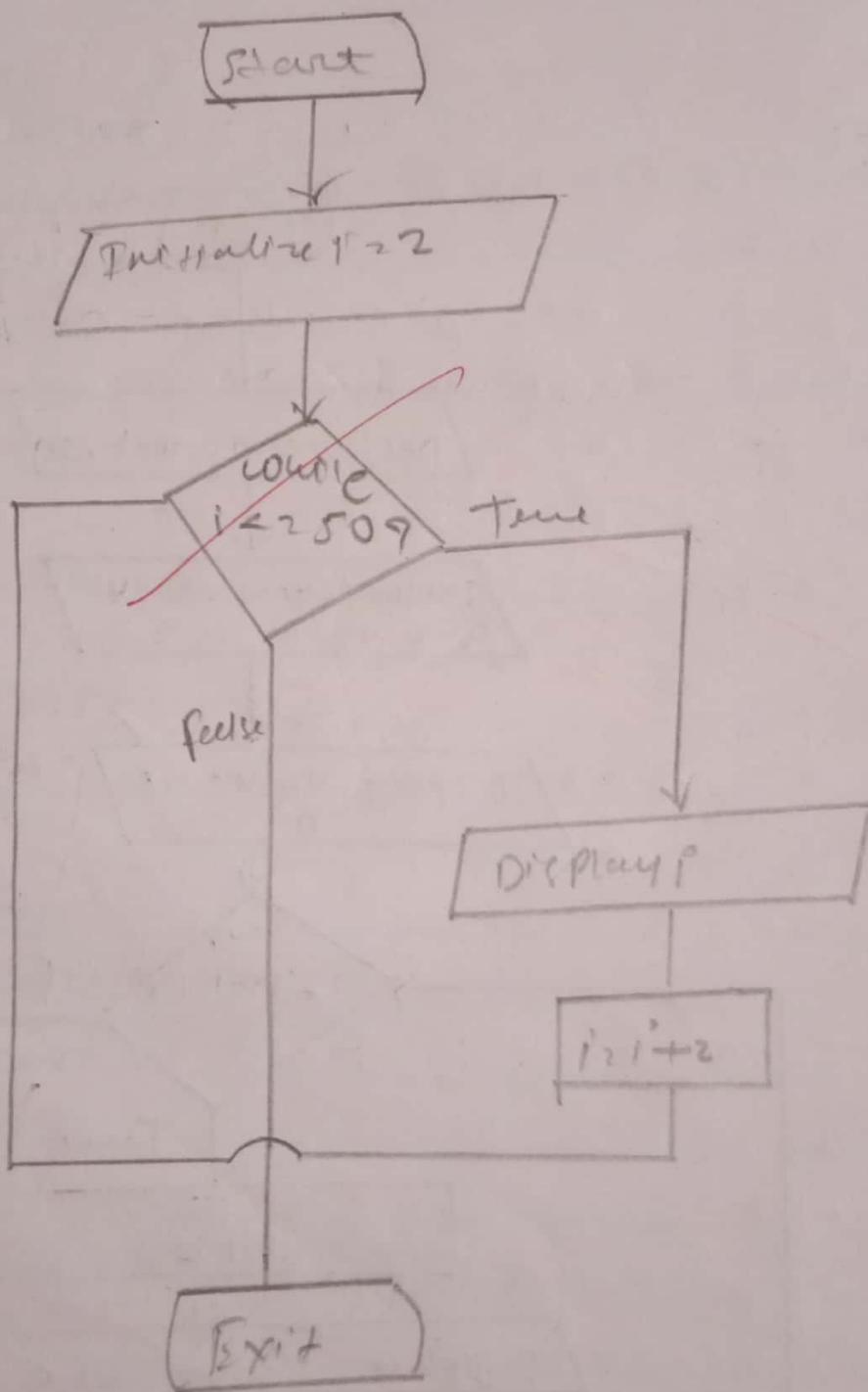
Flow chart :



Output

2 4 6 8 10 12 14 16 18 20 22 24
26 28 30 32 34 36 38 40 42 44 46 48
80

Flowchart



```
for(i=2; i<=n-1; i++)
{
```

```
    c = a+b;
```

```
    printf("\n%d", c);
```

```
    a = b;
```

```
    b = c;
```

```
}
```

```
getch();
```

```
3
```

- Write a program to print even numbers from 1 to 80 using while loop.

Algorithm:

Step 1: Start

Step 2: Initialize $i = 2$

Step 3: Repeat Step 3 until $i <= 80$
 \rightarrow Display
 \rightarrow $i \leftarrow i + 2$

Step 4: Exit

Source Code

```
#include <stdio.h>
#include <conio.h>
Void main()
{
    int i=2;
    clrscr();
    printf("i=%d",i);
    i=i+2
}
getch();
```

*Jani
29/01/2020*

Output :-

Enter the ~~size~~: 4

Enter the A[0] element : 24

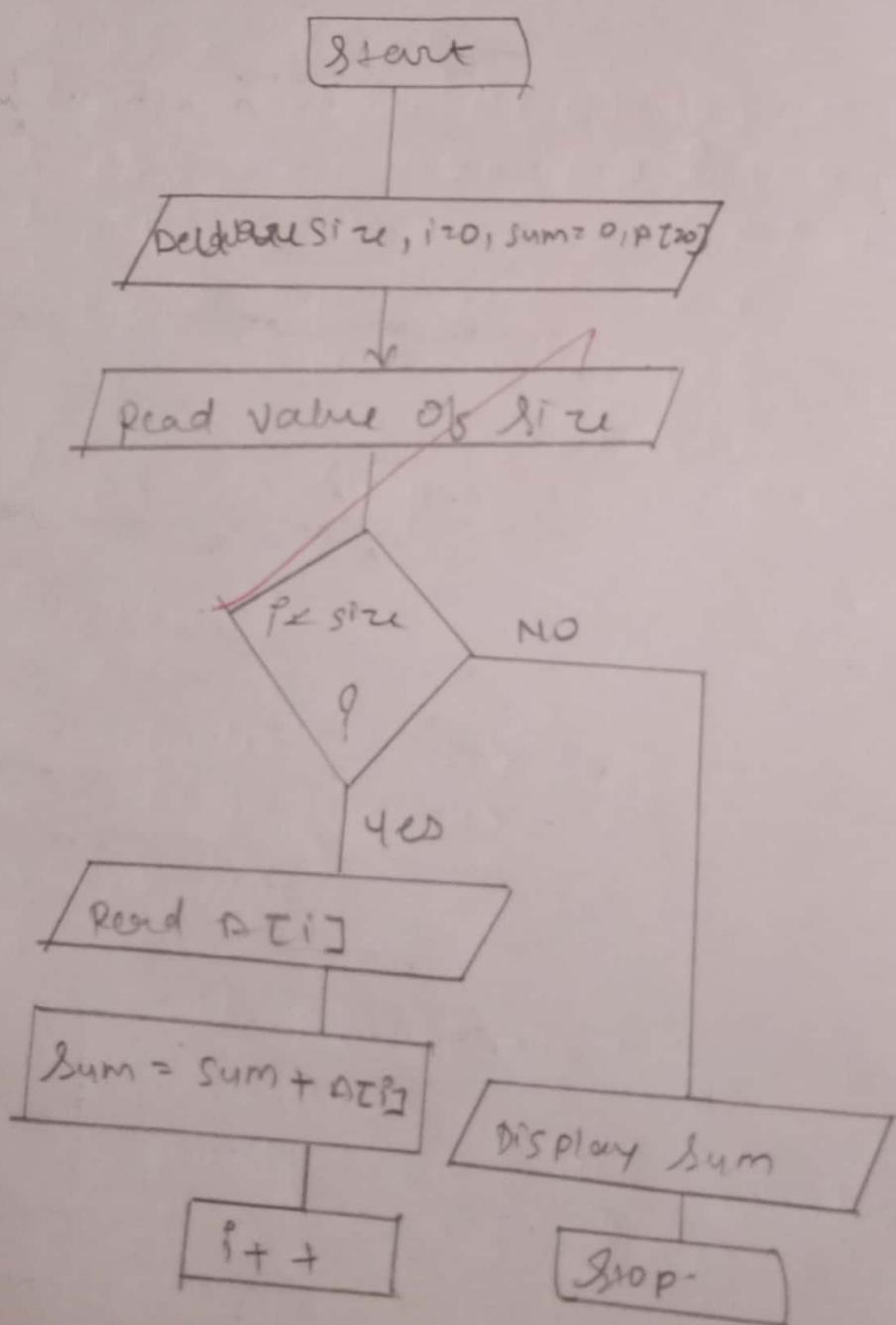
Enter the A[1] element : 28

Enter the A[2] element : 39

Enter the A[3] element : 36

Sum of entered number = 124

Flowchart :-



Topic: Program on array

Write a program to perform sum of array elements.

Algorithms

- Step 1 : Start
- Step 2 : Declare A[20] +, size
- Step 3 : Initialize i=0, sum=0
- Step 4 : Repeat until i<size
 repeat A[i]
 sum = sum + A[i]
- Step 5 : Display sum
- Step 6 : Stop

Program :-

```
#include <stdio.h>
#include <conio.h>
void main()
{
    int A[20], size, i, sum=0;
    clrscr();
    printf("Enter the size:");
    scanf("%d", &size);
    for(i=0; i<size; i++)
    {
        printf("Enter the A[%d] element:", i);
        scanf("%d", &a[i]);
        sum = sum + a[i];
    }
}
```

```
printf("Sum of entered number = %.d",  
getch())
```

}

Q.2 write a program to find transpose of a matrix.

Algorithm :-

Step 1 :- Start

Step 2 :- Declare A[10][10], r, c.

Step 3 :- Initialize i=0 & j=0.

Step 4 :- Read r, c and A[i][j]

Step 5 :- Repeat until i < r

 Repeat until j < c

 Display A[j][i].

Step 6 :- Stop.

Program :-

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

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

```
Void main()
```

```
{
```

```
    int A[10][10], r, c, i, j;
```

```
    clrscr();
```

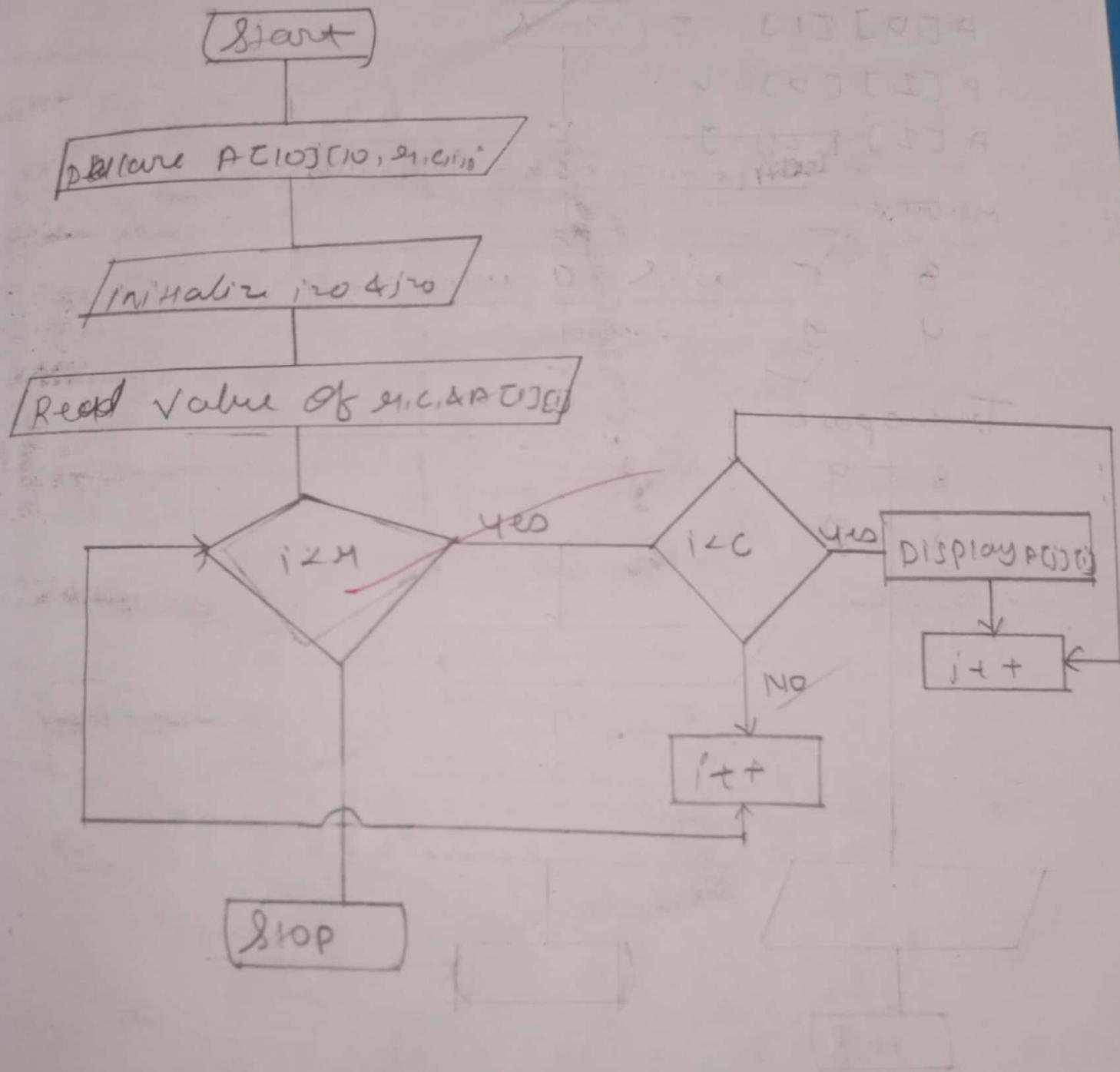
```
    printf("Enter the numbers of rows: ")
```

```
    scanf("%d", &r);
```

```
    printf("Enter the number of columns: ")
```

Flowchart

36



Output:

8

Enter the number of rows: 2

Enter the number of columns: 2

A[0][0] = 8

A[0][1] = 5

A[1][0] = 4

A[1][1] = 9.

Matrix:

8 5

4 9

~~Transpose:~~

8 4

5 9

```

scanf("i.d", &c);
printf("\n");
for(i=0; i<c; i++)
{
    for(j=0; j<c; j++)
        printf("%d", A[i][j]);
    printf("\n");
}
printf("Matrix : %nxn");
for(i=0; i<c; i++)
{
    for(j=0; j<c; j++)
        printf("%d", A[i][j]);
    printf("\n");
}
printf("Transpose of matrix : %nxn");
for(i=0; i<c; i++)
{
    for(j=0; j<c; j++)
        printf("%d", A[j][i]);
    printf("\n");
}
getch();
}

```

Q.8 Write a program to perform Fibonacci Series using array

Algorithm:

Step 1: Start

Step 2: Declare $A[20]$, i , size?

Step 3: Initialize $A[0] = 0$, $A[1] = 1$.

Step 4: Read from the user.

Step 5: Repeat until $i \leq \text{size}$

$$A[i] = A[i-2] + A[i-1]$$

Step 6: declare result

Step 7: Stop

Program:

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

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

```
Void main()
```

```
{
```

```
int A[20], size, i;
```

```
clrscr();
```

```
printf("How many terms ? :- ");
```

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

```
A[0]=0;
```

```
A[1]=1;
```

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

```
{
```

$$A[i] = A[i-2] + A[i-1]$$

```
}
```

```
printf("\n Fibonacci Series upto %d terms :-\n", size);
```

Output :-

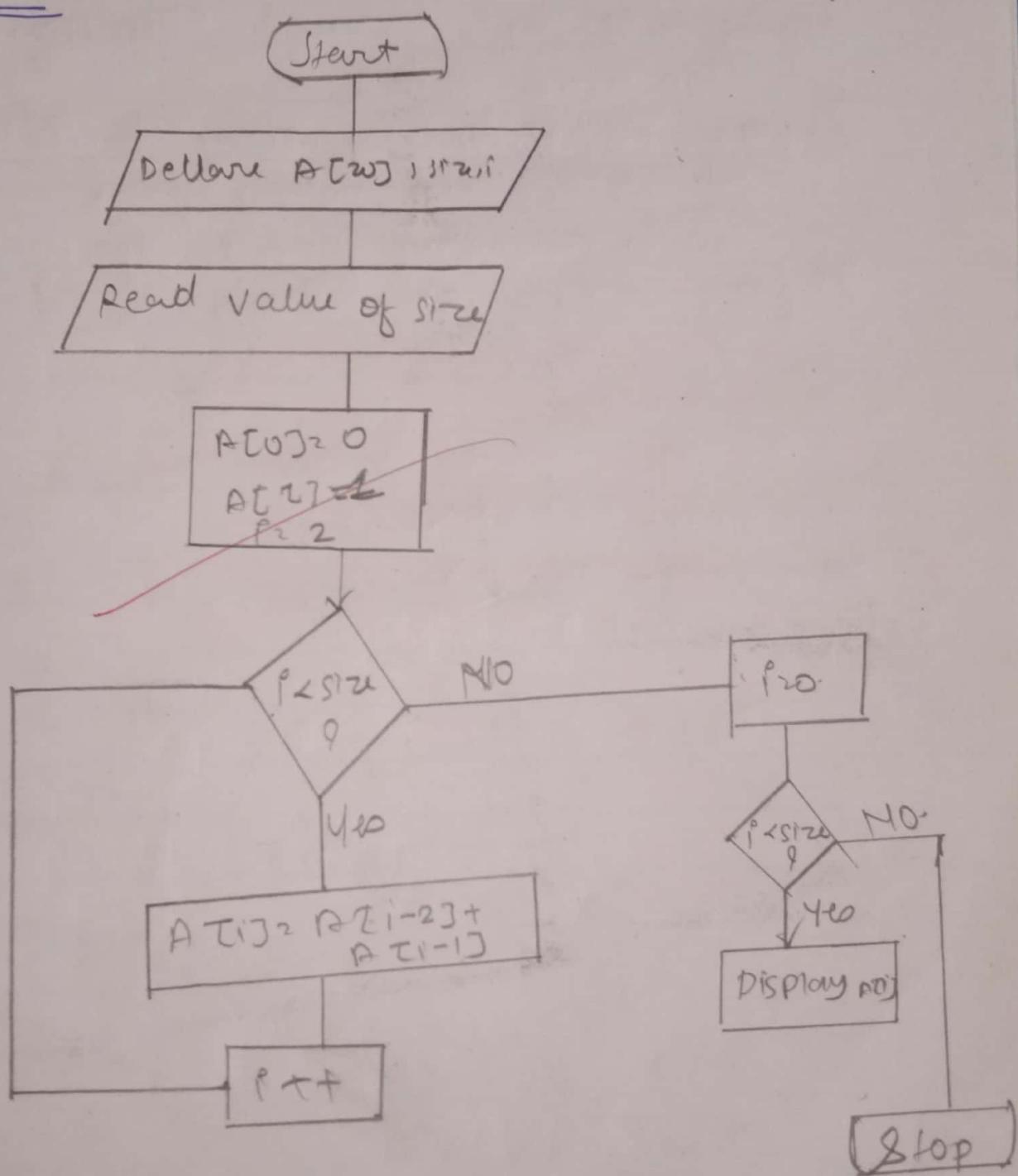
How many term ?: - 6

38

Fibonacci Series upto 6 terms :-

0 1 1 2 3 5

Flowchart :-



```

for(i=0; i<size; i++)
{
    printf("%d\n", AT[i]);
}
getch();
}

```

Final answer

EE

Practical : Ob.

#Program on Structure

Step 1 :- Declare the Structure with initialization of variable.

Step 2 :- Call the declared Structure with Structure Object

Step 3 :- Point to the user to Enter the student detail as rollno, name and percentage with following format specified.

Step 4 :- Display the same to user.

Source code

```
#include <stdio.h>
#include <conio.h>
void main()
{
    struct Stud
    {
        char name[20];
        int rollno;
        float percent;
    };
    struct Stud s1;
    clrscr();
    printf("In Enter student details : ");
    printf("In Enter rollno : ");
    scanf("%d", &s1.rollno);
    printf("In Enter the name : ");
    scanf("%s", &s1.name);
```

Output :-

41)

Enter student details :-

Enter roll no :- 1739

Enter the name :- Adarsh Kumar

Enter the percent :- 74.40

| Rollno | Name | Percent |
|--------|--------------|----------|
| 1739 | Adarsh Kumar | 74.40000 |

8 taught

Output 8th

Rollno

Name

Percentage

1739

Adarsh

74.40

1722

Ishwar

75.60

Rollno

Name

Percentage

1739

Adarsh

74.40

1722

Ishwar

75.60

```

printf("Enter the percent : ");
scanf("%f", &sl.percent);
printf("Enter Roll No & Name & percent");
printf("Enter %d & %s & %f", sl.rollno,
       sl.name, sl.percent);
getch();

```

3

#

Algorithm :-

- Step 1 :- Start
- Step 2 :- Decline Structure Student which will take input as roll number in integer, name in character & percentage in float.
- Step 3 :- Depending upon the number of inputs declare the Structure Object.
- Step 4 :- Display to the user to enter rollno, Name & percentage for the 1st user & 2nd user respectively.
- Step 5 :- Display the same by Scanning the inputs.

Source code :-

```

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

```

Struct Student

11

```
int rollno;
char name[30];
float percent;
S1, S2;
clrscr();
printf("Enter Roll No & Percentage");
scanf("%d %f", &S1.rollno, &S1.name,
      S1.percent);
scanf("%d %f", &S2.rollno, &S2.name,
      S2.percent);
printf("\n%d %s %f", S1.rollno, S1.name,
       S1.percent);
printf("\n%d %s %f", S2.rollno, S2.name,
       S2.percent);
getch();
```

3

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

4

Struct employee

```
int id;
char name[30];
char add[30];
```

5:

Output :-

42

1 Enter the ID : 5

1 Enter the name : Abhishek

1 Enter the address : Mumbai.

2 Enter the ID : 6

2 Enter the name : Adarsh

2 Enter the address : UP

3 Enter the ID : 7

3 Enter the name : Sunny

3 Enter the address : Punjab.

Employee record is :-

| ID | Name | Address |
|----|----------|---------|
| 5 | Abhishek | Mumbai |
| 6 | Adarsh | UP |
| 7 | Sunny | Punjab |

```

struct employee e[60];
int size;
clrscr();
printf("\n Enter how many record you want
to entry : ");
scanf("%d", &size);
for (i=1 ; i<=size ; i++)
{
    printf("\n ID Enter the ID : ", i);
    scanf("%d", &e[i].id);
    printf("\n Name Enter the name : ", i);
    scanf("%s", &e[i].name);
    printf("\n Address Enter the address : ", i);
    scanf("%s", e[i].address);
}
printf("\n\n Employee record is : ");
printf("ID %s Name %s Address %s");
getch();
}

```

PRACTICAL OF

EP

TOPIC:

call by value &

~~function & static Algorithm~~

Step 1 :- Start

Step 2 :- Declare function with integer para.
metrs.

Step 3 :- Declare variables display the user Ento
the value of x & y respectively and Scan the
same.

Step 4 :- Add the value and store in an another
variable.

Step 5 :- Display the number before function
call

Step 6 :- Call the function and display the same

Step 7 :- Define the declared function and print
the same

Step 8 :- Stop

Source code:

H

#include <stdio.h>

#include <conio.h>

int sample (int, int)

void main ()

{

int x, y, z;

clrscr();

printf ("Enter the value of x : ");

Output :

44

Enter the value of x : 8

Enter the value of y : 9

Before function call the number :

x = 8 y = 9 z = 17

Inside the function

x = 20 y = 8.0 z = 70

After function call the number :

x = 8 y = 9 z = 72

```

scanf("fd", &x);
printf("Enter the value of y: ");
scanf("d", &y);
z = x + y;
printf("\n before function call the numbers");
printf("\n x=%d & y=%d", x, y, z);
z = sample(x, y);
printf("after function call the numbers");
printf("\n x=%d & y=%d & z=%d", x, y, z);
getch();

```

3) int sample (int a, int b);

int result; t⁴

a = 20;

b = 50;

result = a + b;

printf("\n inside the function");

printf("\n x=%d & y=%d & z=%d", a, b, result);

3)

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

{

```
char str[40]
```

```
char str[20]
```

```
clrscr();
```

```
printf("In Enter a string : ");
```

```
gets(str);
```

```
printf("In Enter substring to find in  
above string ");
```

```
gets(s);
```

```
if (str.str (str, s) == NULL)
```

{

```
printf("In STRING NOT FOUND!");
```

}

```
else
```

{

```
printf("In String found ");
```

```
getch();
```

}

Output :

46

① Enter a string : HTML is NOT an programming
language

Enter substring : not
string found.

② Enter a string : Ram is good boy

Enter substring : better

STRING NOT FOUND!