Output

```
*******Demonstrate Various datatypes*******
Name of the Student
Sagar
Address of the Student
mumbai
Roll no. of the Student
84
Percentage of Student
75.56
Grade of Student
b
Mobile no.
852963741

Student name: Sagar
Student address: mumbai
Student roll_no: 84
Student percent: 75.56
Student grade: b
Student mobile_no: 852963741
```

10/12/19

Aim: Write a program to understand the basic datatype & i/o

Source code:

```
#include <stdio.h>
#include <conio.h>
void main()
{
        char name[50];
        char add[50];
        int roll_no;
        float percent;
        char grade;
        long int mob;
        clrscr();
        printf("*******Demonstrate Various datatypes*******
                                                    \n");

        printf("Name of the Student \n");
        scanf("%s",&name);
        printf("Address of the student \n");
        scanf("%s",&add);
        printf("Roll no. of the Student \n");
        scanf("%d", &roll_no);
        printf("Percentage of Student \n");
        scanf("%f", &percent);
        printf("Grade of Student \n");
        scanf("%s", &grade);
        printf("Mobile no. \n");
        scanf("%ld", &mob);
```

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```
    printf("\n Student name : %s", name);
    printf("\n Student subject : %s", sub);
    printf("\n Student rollno : %d", roll_no);
    printf("\n Student percent : %f", percent);
    printf("\n Student grade : %c", grade);
    printf("\n Student mob\_no : %lu", mob);
    getch();
}
```

Program - 2

Area of Circle

```
#include <stdio.h>
#include <conio.h>
void main ()
{
    float r;
    float pi=3.14;
    float area;
    clrscr();
    printf("Enter radius \n");
    scanf("%f", &r);
    area = pi * r*r;
    printf("Area of Circle : %f", area);
    getch();
}
```


Output

Enter radius

5

Area of Circle : 50.240002

output

Enter 1st number: 8
Enter 2nd number: 2
Addition of ~~two~~ 2 numbers: 10
Subtraction of 2 numbers: 6
Multiplication of 2 numbers: 16
Division of 2 numbers: 4

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

Arithmatic Operators

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);
        ~~printf~~ 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();
}
```

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:S

logical Operators

Source Code:

```
# 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("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==y);
        printf("Value5 is : %d \n", Value5);
        getch();
}
```

Output

```
Enter 1st Value : 9
Enter 2nd Value : 8
Enter 3rd Value : 2
Value1 is : 0
Value2 is : 1
Value3 is : 1
Value4 is : 0
Value5 is : 1
```

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Output

Value of a is: 8
Value of b is: 4
Greater number is: 8

(b) Aim :- Write a C program that will demonstrate the use of ternary Operator.

Source Code :

```
# include <stdio.h>
# include< conio.h>
Void main()
{
        int a,b,x;
        clrscr();
        printf(" Value of a is : ");
        Scanf(" %d", &a);
        printf(" Value of b is : ");
        Scanf(" %d",&b);
        ~~printf("~~ x= (a>b) ? a:b;
        printf(" Greater number is : %d\n", x);
        getch();
}
```

Steps.

1. Start
2. ~~Declare~~ Take three variables as integer type.
3. Take the values from the user for two variables.
4. ~~Perform~~ Now, to compare between two variables use ternary operator & store it in third variable.
5. Use printf statement to display the output
6. Stop.

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Practical- 3

a. Aim: Write a C program to find whether the entered year is leap or not.

Source Code:

```
#include <stdio.h>
#include <conio.h>
Void main()
{
        int n;
        clrscr();
        printf(" Enter a year: ");
        Scanf("%d", &n);
        if(n % 4 == 0)
        {
            printf(" Entered year is a leap year", n);
        }
        else
        {
            printf(" Not a leap year");
        }
        getch();
}
```

Steps:
1. Start
2. Initialize a Variable of integer type & take Value from user.
3. Use if Conditional Statement to find the given year is leap year or not
4. stop

Output

```
Enter a year: 2016
Entered year is a leap year

Enter a year: 2017
Not a leap year
```


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Output

Enter a number: 8
Even number

Enter a number: 9
Odd number

b. Aim: Write a C program to find odd & even

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");
}
        if((num%2)!=0)
{
        printf("odd number");
}
        getch();
}
```

Steps

1. Start
2. Initialize a Variable ~~to~~ num of User defined type of integer type.
4. Use ~~if~~ nested if statement to find the ~~given~~ entered number is even or odd
5. Stop;

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Aim: Write a C program to find Vowels the enter character is Vowel or Consonant

Source Code:

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

Steps:
1. Start.
2. Initialize a Variable x of ~~charactype~~ character type of user defined type
3. Use if statement to check whether the entered character is Vowel or Consonant.
4. Stop.

Output

Enter the Character: e
Entered character is a Vowel

Enter the Character: S
Entered character is a Consonant

Enter the Character: E
Entered character is a Vowel

Enter the character: B
Entered character is a Consonant

07/01/2020

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Output :-

```
Enter the number:  4
Four
Enter the number:  7
Seven
Enter the number:  12
Wrong choice
```


Aim :- Write a C program to take Single digit number from the user & print that digit in word using else if ladder.

Source Code :

```
#include<stdio.h>
#include <conio.h>
Void main ()
{
        int  n;
        clrscr ();
        printf(" Enter the number: ");
        scanf("%d",&n);
        if (n==1)
        {
                printf(" One \n" );
        }
        else if (n==2)
        {
                printf (" TWO \n");
        }
        else if (n==3)
        {
                printf ("Three \n");
        }
        else if (n==4)
        {
                printf(" Four \n ");
        }
```

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```
else if (n==5)
{
    printf("Five\n");
}
else if (n==6)
{
else printf("Six\n");
}
else if (n==7)
{
    printf("Seven\n");
}
else if (n==8)
{
    printf("Eight\n");
}
else if (n==9)
{
    printf("Nine\n");
}
else
{
    printf("Wrong choice");
}
getch();
}
```

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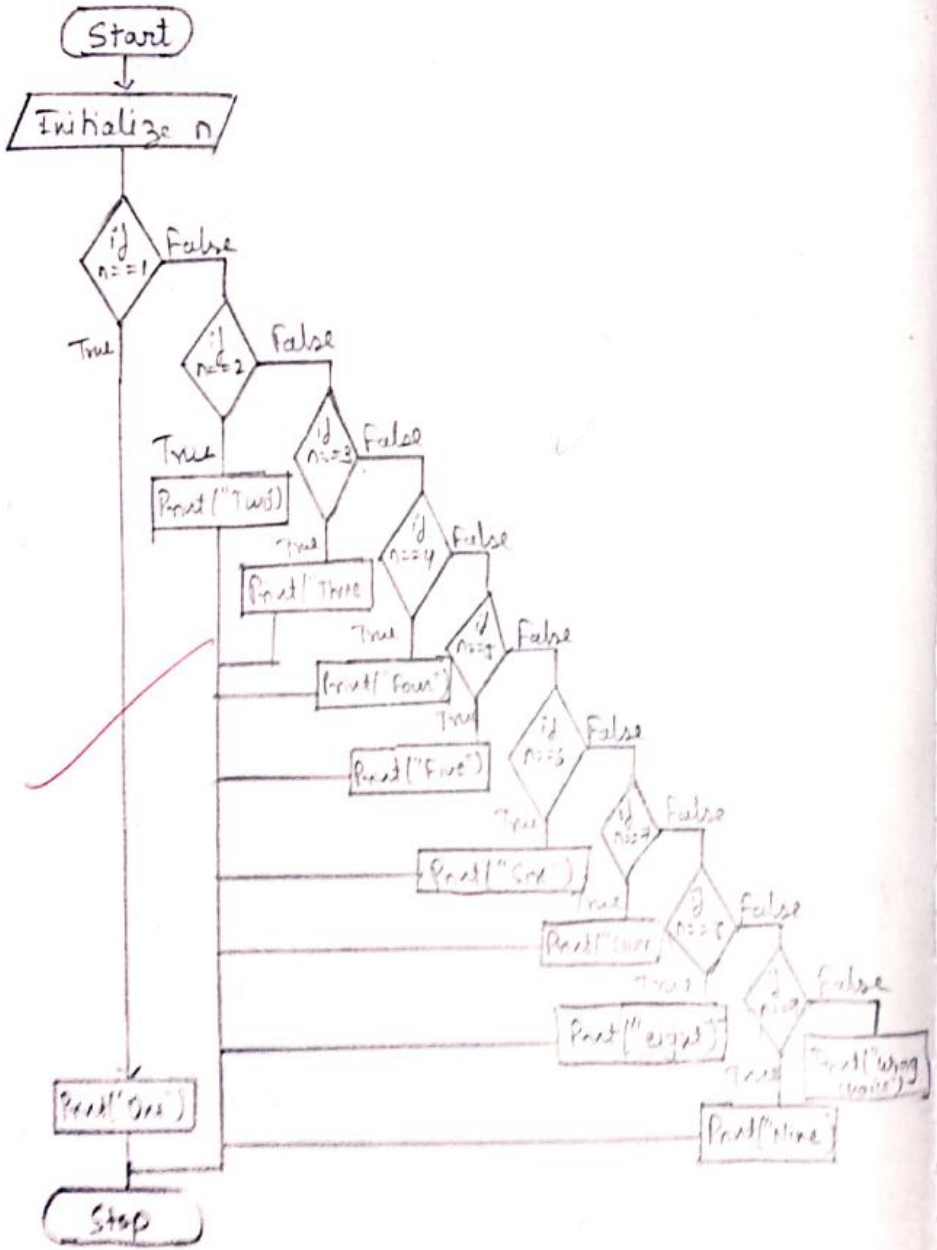

Algorithm

Steps

1. Start
2. ~~Initiate~~ Initialize an int variable & take input from the user
3. ~~Using~~ Use else if ladder to print the entered digit in word
4. If the entered number match than print the same otherwised jump to next if else.
5. Display the appropriate output
6. ~~B~~ Stop

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Practical 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 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
48
44
46
48
50

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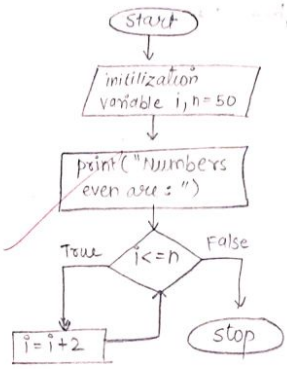

Algorithm

Steps

1. Start
2. Initialize two Variable with static Variable where n = 50 & i = 2
3. Use while loop for printing the even number upto the range 50.
4. Adding 2 to Current even number will give next even number
5. Display the appropriate Output
6. Stop

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b ~~Wrt~~ Aim: Write a C program to print odd number between 1 - 50 using do while loop

Source code:

```
# 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);
        get ch();
}
```


Output

Odd numbers from 1 to 50 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

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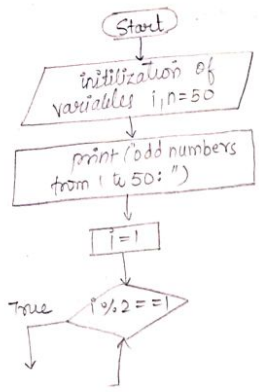

Algorithm

Steps

1. Start
2. Initialize two static Variable n=50 , i=1.
3. Use ~~loop~~ do while loop for iterates from 1 to 50
4. ~~Increment~~ Use if condition Statement to ~~use~~ ~~or~~ check ~~to~~ whether given number is even or odd.
5. Increment the Value of i by 1.
6. Display the appropriate Output
7. Stop

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c. Aim :- Write a C program to print sum of all even number between 1 to n using for loop

Source Code :

```
#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=i+2)
        {
                sum += sum + i ;
        }
        printf("Sum of all even numbers upto the
                range are : ", sum);
        getch();
}
```


Output

~~Sum of all even numbers upto the range are : 10~~

Enter the range : 10

Sum of all even numbers upto the range are : 30

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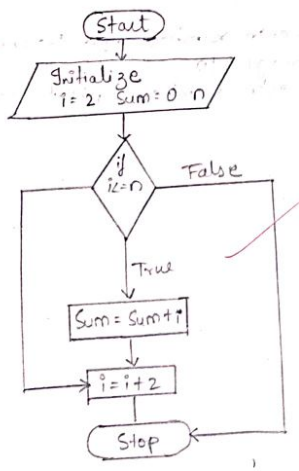

Algorithm

Steps:

1. Start
2. Initialize three Variable & from these two is static & One is dynamic
   i=2 ; Sum=0; n;
3. Use for loop for check the ~~end~~ even number & print upto the ~~row~~ given range
4. Add current even number to sum
5. Display the appropriate Output
6. Stop

7/10/2020

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Aim:- Write a C program to print the pattern in ~~def~~ difference of 5 in ascending order.

Source Code:

```
# include <iostream.h>
# include <conio.h>
Void main ()
{
        int  i, j, n, t=5;
        clrscr();
        printf(" Enter the range: ");
        scanf(" %d" &n);
        ~~for(int~~ printf("\n");
        for (i=1; i<=n ;i++)
        {
                for (j=1 ; j<= i; j++)
                {
                        printf(" %d", t);
                        t= t+5;
                }
                printf("\n");
        }
        getch();
}
```


Output

Enter the range: 5

5
10 15
20 25 30
35 40 45 50
55 60 65 70 75

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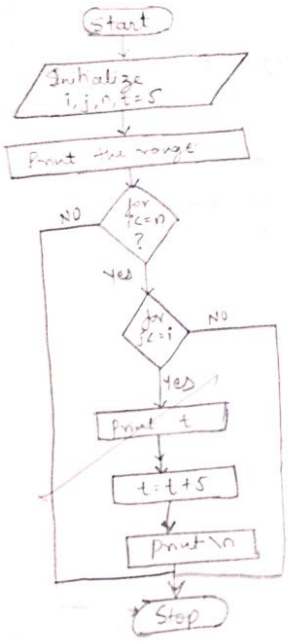

Algorithm :

1. Start
2. Initialize four Variable, three of dynamic & 1 is user defined
   i.e i, j, n, t = 5;
3. Take the range from the user i.e n.
4. ~~Use for Conditional loop~~
4. Use nested for Conditional loop for printing the Value in difference of 5 in ascending order upto the range given by the User.
5. Print the appropriate Output
6. Exit

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PRACTICAL - 5

A. Aim:- Write a C program to print the input array elements

Source code:

```
#include <stdio.h>
#include <conio.h>
Void main()
{
        int a[20];
        ~~clrscr();~~
        int size, i;
        Clrscr();
        printf("Enter numbers less than 20:");
        Scanf("%d", &size);
        for(i=0; i< size; i++)
        {
            printf("Enter the a[%d] no element",i);
            Scanf("%d", &a[i]);
        }
        printf("\n the displayed array \n: ");
        for( i=0; i < size; i ++)
        {
            printf("Enter a[%d] %d ", i);
        }
        getch();
}
```


Output

```
Enter the number less than 20: 5
Enter the a[0] no. element 5
Enter the a[1] no. element 2
Enter the a[2] no. element 4
Enter the a[3] no. element 1
Enter the a[4] no. element 8

the displayed array:
Enter a[0] 5
Enter a[1] 2
Enter a[2] 4
Enter a[3] 1
Enter a[4] 8
```

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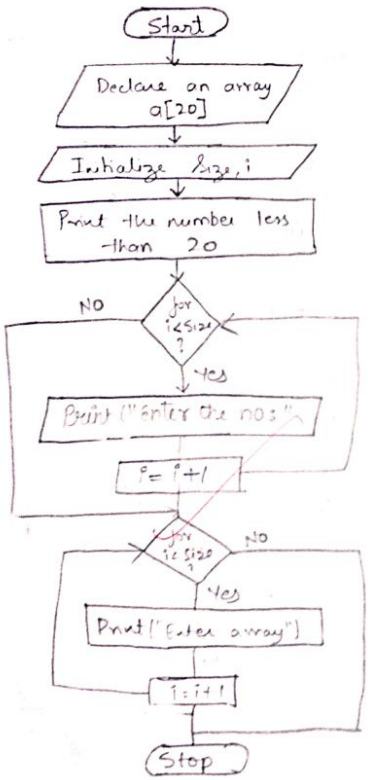


Algorithm.

1 Start
2 ~~Initialize an array of integer type of~~
2 Declare an array of user specified ~~to~~ size
3 Initialize two variables of integer type i.e. size ~~& s~~ and i.
4 Take ~~size of the~~ range from the user that to be printed, which should be less than the specified size of an array.
5 Use Nested for Conditional loop for printing the elements in arrays according to its indexing.
6 Print the ~~approp~~ appropriate Output
7 Exit

8. Aim: To find the Sum of elements of the arrays

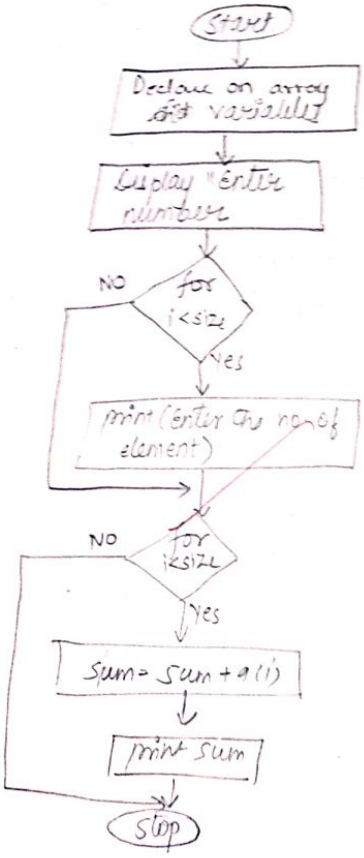
Source Code:

```
#include <iostream.h>
#include <conio.h>
Void main()
{
        int a[20];
        int sum=0, size, i;
        clrscr();
        printf("Enter number less than 20 : ");
        scanf("%d", & size);
        for(i=0; i< size; i++)
        {
            printf("Enter the a[%d] no. element ",i);
            scanf("%d", &a[i]);
        }
        printf("\n the displayed array \n : ");
        for (i=0; i< size; i++)
        {
            sum = sum + a[i];
        }
        printf("Sum of the arrays : [%d]", sum);
        getch();
}
```

Output

```
Enter the numbers less than 20 : 5
Enter the a[0] no. element 2
Enter the a[1] no. element 3
Enter the a[2] no. element 1
Enter the a[3] no. element 2
Enter the a[4] no. element 3

the displayed array :
Sum of the array [11]
```



Algorithm

1. Start
2. Declare an array of integer type of user Specified Size.
3. Initialize three Variable One of Static type & two of dynamic type.
   i.e Sum=0, i, Size.
4. Take range ~~of the~~ from the user ~~that~~ to be printed & add, which should be less than the Specified Size of an array.
5. Use Nested for Conditional loop ~~to~~ for printing the elements in array according to its indexing.
6. Adding the ~~previous & the present element~~ ~~to~~ elements of the array.
7. Print the appropriate Output
8. Exit.

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C. Aim: Write a C program to find out fibonacci series Using array.

Source Code:

```
#include<stdio.h>
#include<conio.h>
Void main()
{
    int a[20], n,i;
    clrscr();
    printf("Enter the no. of terms \n");
    scanf("%d", &n);
    a[0]=0;
    a[1]=1;
    for(i=2; i<n; i++)
    {
        a[i]=a[i-2]+a[i-1];
    }
    printf("The fibonacci series upto %d term
            is \n", n);
    for(i=0; i<n; i++){
    {
        printf("%d" \t", a[i]);
    }
    getch();
}
```


Output

Enter the no. of terms 7

The fibonacci series upto 7 terms is :

0 1 1 2 3 5 8

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Algorithm

1. Start
2. Declare an array of integer type of specified size by the user.
3. Initialize two variables of dynamic variable i.e. i, n
4. Take the no. of terms from the user upto what the no. should be printed.
5. Initialize ~~indens~~ indexing value of a[0] = 0 & a[1] = 1, for printing the fibonacci series
6. Using for condition loop for ~~repeat the~~ looping of numbers.
7. Indexing value of present array is equal to previous to previous indexing value + previous indexing value.
8. Print the fibonacci series upto the term given by the user.
9. Use for loop for printing the output in tabular form.
10. print the appropriate output
11. Exit.

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P Aim: Write a C program to represent a multidimen-sional array in matrix input

Source code:

```
# include <stdio.h>
# include <conio.h>
Void main()
{
        int a[20][20];
        int row, col, i, j;
        clscr();
        printf("Enter no. of rows: ");
        Scanf("%d", &row);
        printf("Enter no. of Columns: ");
        Scanf("%d", &col);
        for(i=0; i<row; i++)
        {
                for (j=0; j<col; j++)
                {
                        printf("Enter the a[%d][%d]
                                no. element : ", i,j);
                        Scanf("%d", &a[i][j]);
                }
        }
        printf("The displayed matrix is \n\n");
        for (i=0; i<row; i++)
        {
                for (j=0; j<col; j++)
                {
                        printf("\t %d", a[i][j]);
```

Output


```
Enter the no. of rows: 2
Enter the no. of Columns: 2
Enter the a[0][0] no. element : 1
Enter the a[0][1] no. element : 5
Enter the a[1][0] no. element : 4
Enter the a[1][1] no. element : 2

The displayed matrix is :

1       5
4       2
```

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```
        }
    printf("\n");
    }
    getch();
}
```

Algorithm.

Start
Declare multi-dimensional array. and row, column, i & j
display to enter no of rows.
scan the same.
similarly for columns
use the for conditional for accessing the array elements
use another for loop for displaying the array values.
stop.

11/2/2020

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Aim:- Write a C program to add the given matrix.

Source code:

```
# include <stdio.h>
# include <conio.h>
Void main()
{
        int a[10][10], b[10][10], Sum[10][10], r,c,i,j;
        clrscr();
        printf("Enter no. of rows:");
        Scanf("%d", &r);
        printf("Enter no. of Columns: ");
        Scanf("%d",&c);
        for (i=0; i<r; i++)
        {
                for (j=0; j<c; j++)
                {
                        printf("Enter the a[%d][%d]
                                no. element: ", i,j);
                        Scanf("%d", &a[i][j]);
                }
        }
        printf("The displayed matrix1 is \n\n");
        for (i=0; i<r; i++)
        {
                for (j=0; j<col; j++)
                {
                        printf("\t %d", a[i][j]);
                }
```

Output

```
Enter no. of rows: 2
Enter no. of Columns: 2
Enter the a[0][0] no. element: 2
Enter the a[0][1] no. element: 2
Enter the a[1][0] no. element: 2
Enter the a[0][1] no. element: 2

The displayed matrix1 is
  2   2
  2   2

Enter no. of rows: 2
Enter no. of Columns: 2
Enter the b[0][0] no. element: 2
Enter the b[0][1] no. element: 2
Enter the b[1][0] no. element: 2
Enter the b[1][1] no. element: 2

The displayed matrix2 is
  2   2
  2   2
```

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Sum of matrices

4 4

4 4


```
printf("\n");
}
printf("Enter no. of rows: ");
scanf("%d", &r);
printf("Enter no. of Columns: ");
scanf("%d", &c);
for(i=0; i<r; i++)
{
    for(j=0; j<c; j++)
    {
        printf("Enter the b[%d][%d] no. element: ", i, j);
        scanf("%d", &b[i][j]);
    }
}
printf("The displayed matrix is \n\n");
for (i=0; i<r; i++)
{
    for (j=0; j<c; j++)
    {
        printf("\t %d", b[i][j]);
    }
printf("\n");
}
printf("\nSum of matrices is: \n");
for (i=0; i<r; i++)
{
```

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```
            sum[i][j] = a[i][j] + b[i][j];
        }
        printf("\n Sum of two matrices: \n");
        for(i=0; i<r; i++)
        {
            for(j=0; j<c; j++)
            {
                printf("%d", sum[i][j]);
            }
            printf("\n\n");
        }
        getch();
    }
```

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Output

Press any key to Continue:
Enter an alphabet : S
Continue

Aim: Write a C program which will demonstrate the use of getch, getche() & getchar() funcⁿ

Source Code

```
#include <stdio.h>
#include <conio.h>
void main()
{
        char ch;
        clrscr();
        printf("Press any key to Continue: ");
        getch();
        printf("\n Enter an alphabet: ");
        ch= getche();
        printf("\n Continue ");
        getchar();
}
```

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Aim :- Write a C program to demonstrate use of putch() & putchar()

Source Code

```
# include <stdio.h>
# include <conio.h>
Void main ()
{
        char ch= " a" ;
        putch (ch);
        putchar (ch);
        getch ();
}
```

Aim :- Write a C program to print a string.

Source Code

```
# include <stdio.h>
# include <conio.h>
# include <string.h>
Void main ()
{
        char a[20];
        clrscr();
        printf(" Enter a string: ");
        scanf(" %s", a);
        printf(" %s", a);
        getch();
}
```

Output

Enter a string: NyramisSagar
NyramisSagar

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