

c) goto:-

It transfers the control of the program execution unconditionally to the location specified by goto.

Eg:-

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

void main()
{
```

```
    int i = 1;
```

label 1:

```
    printf("%d", i);
```

```
    i++;

```

```
    if (i <= 100)
```

```
        goto Label 1;
```

```
    getch();
```

(getch())

d) exit():-

It is used for terminating the execution of program. This is a standard library function & uses the header file <stdlib.h>

Syntax:-

```
Exit(int - status)
```

Status is the value returned to the operating system after the termination of program. The value 0 indicates termination is normal.

Difference between break and exit.

break

exit

1) It terminates the block and the control goes out of the block

2) It is a keyword that takes out the control from its containing block.

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

`if (i==3)`
`break;`

{

1) It terminates the entire program & gives the control to the operating system.

2) It is a function that terminates the program

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

`if (i==3)`
`exit(0);`

{

WAP to display sum of all the digit of any number enter by user.

```
#include <stdio.h>
#include <conio.h>
void main()
{
    int n, sum=0, a;
    clrscr();
    printf("\n Enter the number: ");
    scanf("%d", &n);
    while (n!=0)
    {
        a = n % 10;
        sum = sum + a;
        n = n / 10;
    }
    printf ("\n Sum = %d", sum);
    getch();
}
```

Assignment 1:

1) Write a program in C to display the first 10 natural numbers.

```
#include <stdio.h>
#include <conio.h>
void main()
{
    int i;
    clrscr();
    printf("The first 10 natural number: ");
    for(i=1; i<=10; i++)
    {
        printf("%d", i);
    }
    getch();
}
```

2) Write a program to find the sum of first 10 natural numbers.

```
#include <stdio.h>
#include <conio.h>
void main()
{
    int i, sum=0;
    clrscr();
    printf("The first 10 natural number: ");
    for(i=1; i<=10; i++)
    {
        sum = sum + i;
        printf("%d", i);
    }
    printf("The sum of first 10 natural number is %d", sum);
    getch();
}
```

3) Write a program in C to display n terms of natural number and their sum.

```
#include <stdio.h>
#include <conio.h>
void main()
{
    int i, n, sum=0;
    clrscr();
    printf("enter any number: ");
    scanf("%d", &n);
    printf("\n The first %d natural number is: ", n);
    for(i=1; i<=n; i++)
    {
        sum = sum + i;
        printf("%d ", i);
    }
    printf("\n The sum = %d", sum);
    getch();
}
```

47 WAP in C to read 10 numbers from keyboard and find their sum and average.

```
#include <stdio.h>
#include <conio.h>
void main()
{
    int i, n, sum = 0;
    float average;
    printf("Input 10 numbers : ");
    for(i = 1; i <= 10; i++)
    {
        printf("num-%d : ", i);
        scanf("%d", &n);
        sum = sum + i;
        average = sum / 10;
    }
    printf("The sum of 10 numbers is %d\n", sum);
    printf("The average of 10 numbers is %f\n", average);
    getch();
}
```

5) WAP to calculate the factorial of given number.

```
#include <stdio.h>
#include <conio.h>
void main()
{
    int i, fact = 1, n;
    clrscr();
    printf("Enter a number: ");
    scanf("%d", &n);
    for(i=1; i<=n; i++)
    {
        fact = fact * i
    }
    printf("The factorial of %d is: %d", n, fact);
    getch();
}
```

6) MAP to display the n terms of even natural number and their sum.

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

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

```
void main()
```

```
{
```

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

```
clrscr();
```

```
printf("Enter a number of terms: ");
```

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

```
printf("\n The even numbers are: ");
```

```
for(i=1; i<=n; i++)
```

```
{
```

```
printf("-./d", 2*i);
```

```
sum += 2*i;
```

```
}
```

```
printf("\n the sum of %d terms of even number :%d", n, sum);
```

```
getch();
```

```
g
```

→ WAP in C to display the n terms of harmonic series and their sum.

$1 + \frac{1}{2} + \frac{1}{3} + \frac{1}{4} + \frac{1}{5} \dots \dots \frac{1}{n}$ terms.

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

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

```
void main()
```

```
{
```

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

```
float sum=0;
```

```
clrscr();
```

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

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

```
for(i=1; i<=n; i++)
```

```
{
```

```
sum = sum + (float) 1/i;
```

```
if (i==1)
```

```
{
```

```
printf("1+");
```

```
}
```

```
else if (i==n)
```

```
{
```

```
printf("1/%d", i);
```

```
}
```

```
else
```

```
{
```

```
printf("1/%d + ", i);
```

```
}
```

```
printf("The sum of %d in harmonic series is %f", n, sum);
```

```
getch();
```

8) Write a program in C to print the Floyd's Triangle.

1

0 1

1 0 1

0 1 0 1

1 0 1 0 1

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

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

```
void main()
```

```
{
```

```
int i=0, j=0;
```

```
clrscr();
```

```
for(i=1; i<=5; i++)
```

```
{
```

```
    for(j=i; j>=1; j--)
```

```
{
```

```
    if(j%2 == 1)
```

```
{
```

```
        printf("1");
```

```
}
```

```
else
```

```
{
```

```
    printf("0");
```

```
}
```

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

```
}
```

```
getch();
```

```
g
```

g) write a program in c to display the pattern like a diamond.

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

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

```
void main()
```

```
{
```

```
int i=0, j=0, k=0;
```

```
clrscr();
```

```
for(i=1; i<=5; i++)
```

```
{
```

```
for(k=i; k<=4; k++)
```

```
{
```

```
printf(" ");
```

```
}
```

```
for(j=1; j<(2*i)-1; j++)
```

```
{
```

```
printf("*");
```

```
}
```

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

```
}
```

```
for(i=4; i>=1; i--)
```

```
{
```

```
for(k=i; k<=4; k++)
```

```
{
```

```
printf(" ");
```

```
}
```

```
for(j=1; j<(2*i)-1; j++)
```

```
{
```

```
printf("*");
```

```
}
```

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

```
getch();
```

```
}
```

12) Write a C program to display Pascal's triangle.

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

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

```
void main()
```

```
{
```

```
    int i, j, k;  
    clrscr();
```

```
    for(i=0 ; i<5 ; i++)
```

```
{
```

```
        for(k=5-i ; k>=1 ; k--)
```

```
{
```

```
        printf(" ");
```

```
}
```

```
    int v=1;
```

```
    int num=i;
```

```
    int den=1;
```

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

```
{
```

```
        printf(" %d ", v);
```

```
        v = v * num;
```

```
        v = v / den;
```

```
        num--;
```

```
        den++;
```

```
}
```

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

```
    getch();
```

```
}
```

1 1

1 2 1

1 3 3 1

1 4 6 4 1

18) WAP in C to display the first n terms of Fibonacci series.

Fibonacci series : 0 1 1 2 3 5 8 13

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

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

```
void main()
```

```
{
```

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

```
    clrscr();
```

```
    printf("\nEnter any number: ");
```

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

```
    printf("In the fibonacci series upto %d terms: ", n);
```

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

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

```
{
```

```
    sum = a+b;
```

```
    a = b;
```

```
    b = sum;
```

```
    printf("%d ", sum);
```

```
    }
```

```
getch();
```

```
}
```

14) Write a program in C to find the number and sum of all integer between 100 and 200 which are divisible by 9.

```
#include <stdio.h>
#include <conio.h>
void main()
{
    int i, sum = 0;
    clrscr();
    printf("Numbers betn 100 and 200, divisible by 9 are : \n");
    for (i = 101; i <= 200; i++)
    {
        if (i % 9 == 0)
        {
            printf("%d ", i);
            sum = sum + i;
        }
    }
    printf("\n\nThe sum is : %d", sum);
    getch();
}
```

NOTE (PATTERN PROGRAMMING)

- a) Count no. of Rows and Columns.
- b) Check whether no of column is changing in each row or not.
 - If it is not changing , inner loop i.e. column is not dependent of outer loop i.e. row.
 - If it is changing then the column depends upon row.

Pattern Programming:

Q) WAP to print following output:-

a) * * * * *

* * * *

* * *

* *

*

```
#include <stdio.h>
#include <conio.h>
void main()
{
    int i=0, j=0;
    clrscr();
    for(i=1; i<=5; i++)
    {
        for(j=i; j<=5; j++)
        {
            printf("\t*");
        }
        printf("\n");
    }
    getch();
}
```

b) 1 1 1 1 1
2 2 2 2
3 3 3
4 4
5

```
#include <stdio.h>
#include <conio.h>
void main()
{
    int i=0, j=0;
    for(i=1; i<=5; i++)
    {
        for(j=i; j<=5; j++)
        {
            printf ("%d\t", i);
        }
        printf ("\n");
    }
    getch();
}
```

c) 5 5 5 5 5
4 4 4 4
3 3 3
2 2
1

```
#include <stdio.h>
#include <conio.h>
void main()
{
    int i=0, j=0;
    for(i=5; i>=1; i--)
    {
        for(j=i; j>=1; j--)
        {
            printf("%d\t", j);
        }
        printf("\n");
    }
    getch();
}
```

d7
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5

```
#include <stdio.h>
#include <conio.h>
void main()
{
    int i=0, j=0;
    for(i=1; i<=5; i++)
    {
        for(j=1; j<=i; j++)
            printf("%d\t", j);
        printf("\n");
    }
    getch();
}
```

e> 5 4 3 2 1
5 4 3 2
5 4 3
5 4
5

```
#include <stdio.h>
#include <conio.h>
void main()
{
    int i=0, j=0;
    for(i=1; i<=5; i++)
    {
        for(j=5; j>=i; j--)
            printf("%d", j);
        printf("\n");
    }
    getch();
}
```

for
*
* *
* * *
* * * * *

#include <stdio.h>

#include <conio.h>

void main()

{

int i=0, j=0;

for (i=1; i<=5; i++)

{

for(j=i ; j>=1 , j--)

{

printf("*\t");

}

printf("\n");

}

getch();

}

g> 1
2 2
3 3 3
4 4 4 4
5 5 5 5 5

```
#include <stdio.h>
#include <conio.h>
void main()
{
    int i=0, j=0;
    clrscr();
    for(i=1; i<=5; i++)
    {
        for(j=i; j>=1; j--)
            printf("%d", i);
        printf("\n");
    }
    getch();
}
```



* * *

* * * * *

* * * * * *

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

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

```
void main()
```

```
{
```

```
int i=0, j=0;
```

```
for (i=1; i<=10; i++)
```

```
{
```

```
for (j=1; j<=i; j++)
```

```
{
```

```
printf("*\t");
```

```
j
```

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

```
}
```

```
getch();
```

```
3
```

\$ * * *
* \$ * *
* * \$ *
* * * \$

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

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

```
void main()
```

```
{
```

```
int i=0, j=0;
```

```
for(i=1; i<=4; i++)
```

```
    for(j=1; j<=4; j++)
```

```
{
```

```
    if(i==j)
```

```
{
```

```
        printf("$\t");
```

```
    }
```

```
else
```

```
{
```

```
    printf("*\t");
```

```
}
```

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

```
getch();
```

```
}
```

jj * # * #
* # * #
* # * #
* # * #
* # * #

```
#include <stdio.h>
#include <conio.h>
void main()
{
    int i=0, j=0;
    for(i=1; i<=4; i++)
    {
        for(j=1; j<=4; j++)
        {
            if(j%2 == 0)
                printf("#\t");
            else
                printf("*\t");
        }
        printf("\n");
    }
    getch();
}
```

Pattern Program with space.

```
1> *
 * *
 * * *
 * * * *
 * * * * *
```

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

```
void main()
```

```
{
```

```
int i=0, j=0, k=0;
```

```
clrscr();
```

```
for(i=1; i<=5; i++)
```

```
{
```

```
for(k=i; k<=4; k++)
```

```
{
```

```
printf(" ");
```

```
}
```

```
for(j=1; j<=1; j++)
```

```
{
```

```
printf("* ");
```

```
}
```

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

```
}
```

```
getch();
```

```
}
```