-_____

for() :-

syntax

for(initial value ; condition ; increment / decrement / processing)

{

statements ;

_____;

_____;

}

e.g. 1. for(i = 1 ; i <= 10 ; i++)

2. for(i=1,j =1 ; i<=3,j<=9 ; i++,j++)

_____-_____

// PRINT 1 TO 10 NOS USING FOR LOOP

```
#include<stdio.h>
  int    main()
  {
            int  i  ;
            for( i = 1 ; i <= 10 ; i++ )
            {
                  printf(" %d\n" , i);
            }
  }
```

2. PRINT 1 TO N NOS USING FOR LOOP

```
#include<stdio.h>

  int   main()
  {
          int i , n ;

          printf("ENTER N \n");
          scanf("%d",&n);

          for( i = 1 ; i <= n ; i ++ )
          {
                printf("   %d\n" , i );
          }
  }
```

3. PRINT ODD NOS B/W 1 TO 10 USING FOR LOOP

```
#include<stdio.h>
  int   main()
  {
          int i,n;

          printf("ENTER N \n");

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

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

        for( i = 1 ; i <= n ; i+= 2 )
        {
              printf("   %d\n" , i);
        }

   }
```

4. PRINT EVEN NOS B/W 1 TO 10 USING FOR LOOP

```
#include<stdio.h>
  int  main()
  {
        int i,n;

         printf("ENTER N \n");
         scanf("%d",&n);

         printf(" EVEN NOS \n");

         for( i = 2 ; i <= n ; i+= 2 )
         {
              printf("   %d\n" , i);
         }

   }
```

5. PRINT N TO 1 NOS USING FOR LOOP

```
#include<stdio.h>
  int   main()
  {
          int i,n ;

          printf("ENTER N \n");

          scanf("%d",&n);

          for( i = n ; i >= 1 ; i-- )
          {
              printf("  %d\n" , i);
          }
  }
```

SUM OF N NOS

n = 4

1 + 2 + 3 + 4 = 10

s = s + i ;
s = 0 ;

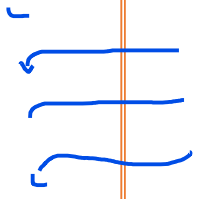
// WAP FOR SUM OF N NOS

```
#include<stdio.h>
  int    main()
  {
            int i , n , s = 0;

            printf(" ENTER NO \n ");
            scanf("%d", &n);

            for( i = 1 ; i <= n ; i++ )
            {
                  s = s + i ;
            }
                printf( "SUM = %d\n", s ) ;
  }
```

---

s = 0 , n = 4

for i = 1 to 4
s = s + i
i = 1 s = 0 + 1 = 1
i = 2 s = 1 + 2 = 3
i = 3 s = 3 + 3 = 6
i = 4 s = 6 + 4 = 10
sum = 10



1*1 + 2*2 + 3*3 + ... + n*n

S = S + I * I ; S = 0 ;

// WAP FOR FACTORIAL

```
#include<stdio.h>

  int    main()
  {
          int i , n , f = 1;

          printf(" ENTER NO \n ");

          scanf("%d" , &n);

          for( i = 1 ; i <= n ; i++ )
          {
                f = f * i ;
          }
          printf("   FACT = %d\n " , f);
  }
```

trace:- f = 1 , n = 4

for i = 1 to 4

f = f * i

i = 1 f = 1 * 1 = 1
i = 2 f = 1 * 2 = 2
i = 3 f = 2 * 3 = 6
i = 4 f = 6 * 4 = 24

fact = 24

---

n = 6 f = 720
n = 7 f = 5040

---

n = 8 f = 40320 X

integer range

-32768 to +32767
int ---> long int
%d %ld

---

1. n = - 6
   no. is negative

2. n = 0
   f = 1

3. n = 8
   f = 40320

-

// **MODIFIED FACTORIAL**

```
#include<stdio.h>

  int   main()
  {
          int  i ,  n ;

          long int  f = 1 ;

          printf(" ENTER NO \n ");
          scanf("%d", &n);

          if( n < 0 )
          {
              printf(" NO. IS NEGATIVE \n ");
          }
```

```
        else
        {
            for( i = 1 ; i <= n ; i++)
            {
                f = f * i ;
            }
            printf("   fact = %ld \n " , f);
        }
}
```

---

trace :- 1. n = - 4
no. is negative

2. n = 0 ; f = 1

for i = 1 ; 1 <= 0 X

fact = f = 1

3. n = 8

fact = 40320

// MULTIPLICATION TABLE

```
#include<stdio.h>
int   main()
{
     int i , n , t;

     printf(" ENTER NO \n ");
     scanf("%d", &n);

     for( i = 1 ; i <= 10 ; i++ )
     {
          t = n * i ;
          printf(" %d\n", t); / 5 , 10 , .....50
     }
   }
```

```
n * i = t
5 * 1 = 5
5 * 2 = 10
     .
     .
5 * 10 = 50
```

printf(" %d * %d = %d\n", n , i, t);
