Find Area of Square formula : a = a2
Find Area of Cube formula : a = 6a2
Find area of Triangle Formula : A = 1/2 × b × h
Find area of Rectangle Formula : A=wl
Find area of Circle Formula : Pi*R*R

Find circumference of Rectangle formula : C = 4 * a
Find circumference of Triangle formula : triangle = a + b + c
Find the area of a rectangular prism formula : A=2(wl+hl+hw)
Find circumference of square formula : C = 4 * a

Find character value from ascii.
Find ascii value of given number.

A	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**
65	66	67	68	69	70	71	72	73	74	75	76	77

N	**O**	**P**	**Q**	**R**	**S**	**T**	**U**	**V**	**W**	**X**	**Y**	**Z**
78	79	80	81	82	83	84	85	86	87	88	89	90

a	**b**	**c**	**d**	**e**	**f**	**g**	**h**	**i**	**j**	**k**	**l**	**m**
97	98	99	100	101	102	103	104	105	106	107	108	109

n	**o**	**p**	**q**	**r**	**s**	**t**	**u**	**v**	**w**	**x**	**y**	**z**
110	111	112	113	114	115	116	117	118	119	120	121	122

Convert school’s name in abbreviated form
Convert country’s name in abbreviate form

Days converted into years, months and weeks.

```c
#include<stdio.h>
main()
{
    int days, years,weeks, months;
    printf("\n\n Enter a numbers of days : ");
    scanf("%d",&days);
    years =days / 365;
    weeks =days / 7;
    months =days / 30;
    printf("\n\n Days to Years: %d",years);
    printf("\n\n Days to Weeks: %d",weeks);
    printf("\n\n Days to Months:%d",months);
}
```

```
Enter a numbers of days : 1825

Days to Years: 5

Days to Weeks: 260

Days to Months:60
```

Converted years into days & days into years.

```c
#include <stdio.h>
main()
{
    int days, years, to_years, to_days;
    printf("\n\n Enter days to convert into years :");
    scanf("%d",&days);

    to_years=days/365;
    printf("\n Years = %d",to_years);

    printf("\n\n Enter years to convert into days :");
    scanf("%d",&years);

    to_days=years*365;
    printf("\n days = %d",to_days);
}
```

```
Enter days to convert into years :365

Years = 1

Enter years to convert into days :5

days = 1825
```

The year is Leap year or not.

Leap year having 366 days. Leap year at every 4 years. E.g February having 29 days.

Leap years : 1988, 1992, 1996, and 2000

Leap year condition :

-Year must be divisible by 4

-Year is divisible by 400 and not divisible by 100.

```c
#include<stdio.h>
main()
{
    int year;

    printf("Enter a year: ");
    scanf("%d", &year);

    if((  (year % 4 == 0) && (year % 100!= 0)  )    || (year%400 == 0)  )
    {
        printf("%d is a leap year...", year);
    }
    else
    {
        printf("%d is not a leap year..", year);
    }
}
```

Swapping of two numbers without third variable.

```c
#include<stdio.h>
main()
{
    int a=10, b=20;

    printf("\n\n a = %d",a);
    printf("\n\n b = %d",b);

    a=a+b;
    b=a-b;
    a=a-b;

    printf("\n\n After Swapping....");
    printf("\n\n a = %d",a);
    printf("\n\n b = %d",b);
}
```

Factorial Number:

factorial of n (n!) = 1 * 2 * 3 * 4....n

Factorial for negative numbers doesn't exist .

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

    printf("\n\n Enter a number for factorial  : ");
    scanf("%d",&n);

    if(n<0)
        printf("\n\n Factorial is not possible with the entered number.. ");

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

```
Enter a number for factorial  : 5

1 * 2 * 3 * 4 * 5 *

Factorial Number  = 120
```

Fibonacci Series:

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

    printf("\n\n Input a number : ");
    scanf("%d",&n);

    i=0;
    j=1;
    printf("\n\n %d %d",i,j);

    k=i+j;
    while(k<=n)
    {
        printf(" %d",k);
        i=j;
        j=k;
        k=i+j;
    }

}
```

```
Enter the number of terms: 10
Fibonacci Series: 0, 1, 1, 2, 3, 5, 8, 13, 21, 34,
```

Reverse Number

```c
#include<stdio.h>
main()
{
    int num, rem=0;

    printf("\n\n Enter a number to reverse : ");
    scanf("%d",&num);

    while(num>0)
    {
        rem=num%10;
        printf("%d",rem);
        num=num/10;
    }
}
```

Sum of Digits

```c
#include<stdio.h>
main()
{
    int num, rem=0,sum=0;

    printf("\n\n Enter a number : ");
    scanf("%d",&num);

    while(num>0)
    {
        rem=num%10;
        sum=sum+rem;
        num=num/10;
    }

    printf("\n\n Sum of digits : %d",sum);
}
```

```
Enter a number : 12345


Sum of digits : 15
```

Find max digit from the number

```c
#include<stdio.h>
main()
{
    int num, rem=0, max=0;

    printf("\n\n Enter a number to reverse : ");
    scanf("%d",&num);
    printf("\n\n");
    while(num>0)
    {
        rem=num%10;

        if(rem>max)
        max=rem;

        printf("%d",rem);
        num=num/10;
    }

    printf("\n\n The max digit : %d",max);
}
```

```
 Enter a number to reverse : 16453


35461

 The max digit : 6
```

Sum of First & Last Digit

```c
#include<stdio.h>
main()
{
    int num, sum=0, firstdig, lastdig;

    printf("\n\n Enter a number to reverse : ");
    scanf("%d",&num);

    lastdig=num%10;
    printf("\n\n");
    while(num>=10)
    {

        num=num/10;
    }

    firstdig=num;
    sum=firstdig+lastdig;

    printf("\n\n The sum of first & last digit : %d",sum);
}
```

```
Enter a number to reverse : 123456


The sum of first & last digit : 7
--------------------------------
```

To find length of the string

```c
#include<stdio.h>
main()
{
    char str[20];
    int count=0, i;

    printf("\n\n Input your name : ");
    gets(str);

    i=0;
    while(str[i]!='\0')
    {
        count++;

        i++;
    }

    printf("\n\n Total length of your name : %d",count);
}
```

Palindrome String Example : RACECAR

```c
#include<stdio.h>
main()
{
    char str[20];
    int flag, i, len=0;

    printf("\n\n Input your name : ");
    gets(str);

    len=strlen(str);

    for(i=0;i<len;i++)
    {
            if(str[i] != str[len-i-1])
            {
                flag=1;
                break;
            }
    }

    if(flag)
        printf("\n\n string is not palindrome.. ");
    else
        printf("\n\n String is palindrome.. ");

}
```

To find the max number from 1-D array.

```c
#include<stdio.h>
main()
{
    int arr[20],i, size, biggest=0;

    printf("\n\n Input array size : ");
    scanf("%d",&size);

    for(i=0;i<size;i++)
    {
            printf("\n\n Input element[%d] : ",i);
            scanf("%d",&arr[i]);
    }

    biggest=arr[0];

    for(i=0;i<size;i++)
    {
        if(arr[i]>biggest)
            biggest=arr[i];
    }

    printf("\n\n Biggest Element : %d", biggest);

}
```

To find the min number from 1-D array.

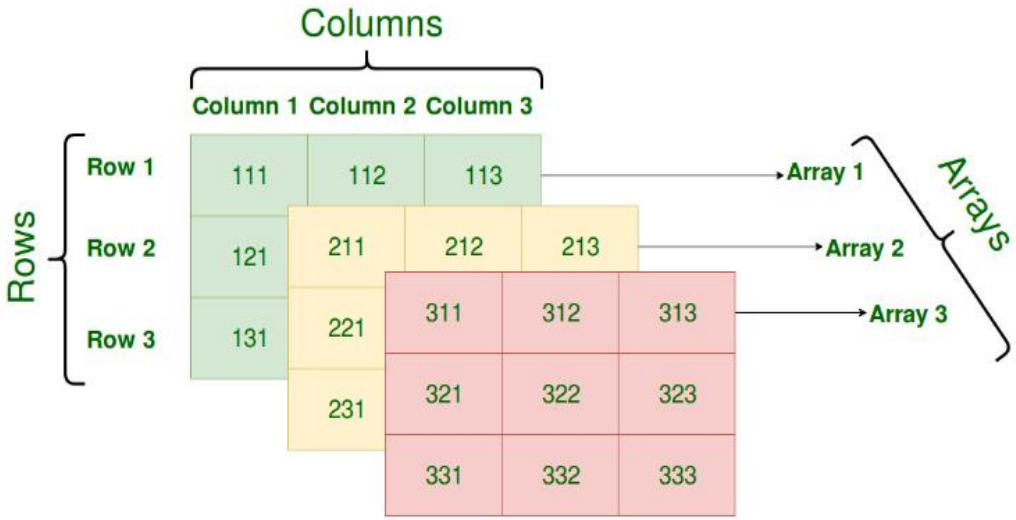
```c
#include<stdio.h>
main()
{
    int arr[20],i, size, min;

    printf("\n\n Input array size : ");
    scanf("%d",&size);

    for(i=0;i<size;i++)
    {
            printf("\n\n Input element[%d] : ",i);
            scanf("%d",&arr[i]);
    }

    min=arr[0];

    for(i=0;i<size;i++)
    {
        if(arr[i]<min)
            min=arr[i];
    }

    printf("\n\n Minimum Element : %d", min);

}
```

Ascending Order: 1-D array.

```c
#include<stdio.h>
main()
{
    int size, i, j, arr[30], temp;

    printf("\n\n Input size of array : ");
    scanf("%d",&size);

    for(i=0;i<size;i++)
    {
        printf("\n\n Input array [%d] : ",i);
        scanf("%d",&arr[i]);
    }

    for(i=0;i<size;i++)
    {
        for(j=i+1;j<size;j++)
        {
            if(arr[i]>arr[j])
            {
                temp=arr[i];
                arr[i]=arr[j];
                arr[j]=temp;
            }

        }
    }

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

}
```

Three-Dimensional Array in C

A **Three Dimensional Array** or **3D** array in C is a collection of two-dimensional arrays. It can be visualized as multiple 2D arrays stacked on top of each other.



Graphical Representation of Three-Dimensional Array of Size 3 x 3 x 3

Syntax:

```
data_type array_name[x][y][z];
```

- **data_type:** Type of data to be stored in each element.
- **array_name:** name of the array
- **x:** Number of 2D arrays.
- **y:** Number of rows in each 2D array.

Example:

```
int array[3][3][3];
```

```
int x[2][3][4] =
 {
   { {0,1,2,3}, {4,5,6,7}, {8,9,10,11} },
   { {12,13,14,15}, {16,17,18,19}, {20,21,22,23} }
 };
```

```
int x[2][3][4];

for (int i=0; i<2; i++) {
    for (int j=0; j<3; j++) {
        for (int k=0; k<4; k++) {
            x[i][j][k] = (some_value);
        }
    }
}
```

```c
// C program to print elements of Three-Dimensional Array

#include <stdio.h>

int main(void)
{
    // initializing the 3-dimensional array
    int x[2][3][2] = { { { 0, 1 }, { 2, 3 }, { 4, 5 } },
                       { { 6, 7 }, { 8, 9 }, { 10, 11 } } };

    // output each element's value
    for (int i = 0; i < 2; ++i) {
        for (int j = 0; j < 3; ++j) {
            for (int k = 0; k < 2; ++k) {
                printf("Element at x[%i][%i][%i] = %d\n", i,
                       j, k, x[i][j][k]);
            }
        }
    }
    return (0);
}
```

Output

```
Element at x[0][0][0] = 0
Element at x[0][0][1] = 1
Element at x[0][1][0] = 2
Element at x[0][1][1] = 3
Element at x[0][2][0] = 4
Element at x[0][2][1] = 5
Element at x[1][0][0] = 6
Element at x[1][0][1] = 7
Element at x[1][1][0] = 8
Element at x[1][1][1] = 9
Element at x[1][2][0] = 10
Element at x[1][2][1] = 11
```