

## Lower Triangular Matrices

A square matrix is called lower triangular if all the entries above the main diagonal are zero.

### Lower Triangular Matrix

1	0	0
4	2	0
6	5	1

### C program to implement Lower Triangular Matrices

```
#include<stdio.h>

#include<conio.h>

void main()

{
    int array[3][3], i, j, flag = 0 ;

    printf("\n\t Enter the value of Matrix : ");

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

    {
        for (j = 0; j < 3; j++)

        {
            scanf("%d", &array[i][j]);
        }
    }
}
```

```
}

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

{

    for (j = 0; j < 3; j++)

    {

        if (array[i] < array[j] && array[i][j] == 0)

        {

            flag = flag + 1;

        }

    }

}

if (flag == 3)

printf("\n\n Matrix is a Lower triangular matrix");

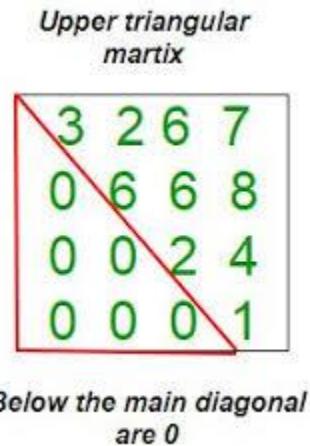
else

printf("\n\n Matrix is not a lower triangular matrix");

}
```

## Upper Triangular Matrices

A square matrix is called upper triangular if all the entries below the main diagonal are zero.



### C program to implement Upper Triangular Matrices

```
#include <stdio.h>

#include<conio.h>

void main()

{

    int i, j, r, c, array[10][10];

    printf("Enter the r and c value:");

    scanf("%d%d", &r, &c);

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

```
{  
    for (j = 1; j <= c; j++)  
    {  
        printf("array[%d][%d] = ", i, j);  
        scanf("%d", &array[i][j]);  
    }  
  
    printf("matrix is");  
    for (i = 1; i <= r; i++)  
    {  
        for (j = 1; j <= c; j++)  
        {  
            printf("%d", array[i][j]);  
        }  
        printf("\n");  
    }  
  
    for (i = 1; i <= r; i++)  
    {  
        printf("\n");
```

```
for (j = 1; j <= c; j++)
{
    if (i >= j)
    {
        printf("%d", array[i][j]);
    }
    else
    {
        printf("\t");
    }
}

printf("\n\n");

for (i = 1; i <= r; i++)
{
    printf("\n");
    for (j = 1; j <= c; j++)
    {
        if (j >= i)
```

```
{  
    printf("%d", array[i][j]);  
}  
  
else  
  
{  
    //printf("\t");  
}  
  
// printf("\n");  
  
}  
}
```