Tridiagonal space matrices

Tridiagonal matrix : A Tridiagonal matrix is a band matrix that has nonzero elements on the main diagonal, the first diagonal below this, and the first diagonal above the main diagonal only.

For example, the following matrix is tridiagonal:

$$\begin{pmatrix} 1 & 7 & 0 & 0 \\ 2 & 3 & 8 & 0 \\ 0 & 5 & 6 & 4 \\ 0 & 0 & 9 & 10 \end{pmatrix}$$

Tri Diagonal Matrix

C Program to print Tridiagonal Matrices

```
#include<stdio.h>

#include<conio.h>

void main()

{

int i,j,k;

clrscr();

int mat[5][5]={{1,2,3,4,5},{6,7,8,9,10},{11,12,13,14,15},{16,17,18,19,20},{21,22,23,24,25}};

printf("Entered matrix is:\n\n");

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

  {

  for(j=0;j<5;j++)

    {
```

```c
        printf("%d\t",mat[i][j]);

        }

    printf("\n");

    }


printf("\nTridiagnal matrix:\n\n");

printf("%d\t%d\n",mat[0][0],mat[0][1]);

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

    {

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

        {

        printf("\t");

        }

    if(i==4)

        printf("%d\t%d\n",mat[4][3],mat[4][4]);

    else

        {

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

            {

            if(i==j)

            printf("%d\t%d\t%d",mat[i][j-1],mat[i][j],mat[i][j+1]);

            }

        printf("\n");

        }

    }
```

```
	getch();

}
```