

IMPLEMENTATION OF SPARCE MATRIX USING ARRAY

PROGRAM

```
#include<stdio.h>
void main()
{
int row,col,arr[50][50],i,j,k=1,count=0;
printf("enter the rows and colum\n");
scanf("%d%d",&row,&col);
printf("enter the elements\n");
for(i=0;i<row;i++){
for(j=0;j<col;j++){
scanf("%d",&arr[i][j]);
}
}
struct sparse{
int row,col,value;
}s[100];
for(i=0;i<row;i++){
for(j=0;j<col;j++){
if(arr[i][j]!=0){
s[k].row=i;
s[k].col=j;
s[k].value=arr[i][j];
k++;
count++;
}
}
s[0].row=row;
s[0].col=col;
s[0].value=count;
}
}

printf("The Tuple matrix of the given matrix\n");
printf("Row\tCol\tval\n");
for(i=0;i<=count;i++){
printf("%d\t%d\t%d",s[i].row,s[i].col,s[i].value);
printf("\n");
}
}
```

OUTPUT

```
csea1@sjcet-H81M-DS2:~$ cd anush
csea1@sjcet-H81M-DS2:~/anush$ gcc sparse.c
csea1@sjcet-H81M-DS2:~/anush$ ./a.out
enter the rows and column
6 6
enter the elements
0 0 0 0 0 1
0 0 3 0 0 0
2 0 0 0 0 0
0 4 0 0 0 0
0 0 4 0 0 0
5 0 0 0 0 0
The Tuple matrix of the given matrix


| Row | Col | Nonzeroes |
|-----|-----|-----------|
| 6   | 6   | 6         |
| 0   | 5   | 1         |
| 1   | 2   | 3         |
| 2   | 0   | 2         |
| 3   | 1   | 4         |
| 4   | 2   | 4         |
| 5   | 0   | 5         |


```