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LAB - 9

BFS & DFS traversals.

```
#include <stdio.h>
int queue [10];
int front =0 , rear =0.
int a[10][10];
void enqueue (int var)
{
        queue[rear] = var;
        rear ++;
}
void dequeue ()
{       front ++;
}

void bfs (int n)
{
        int visited [10] = {0};
        equeue (0);
        visited [0] = 1 ;
        while (front != rear)
        {
                int current = queue [front];
                printf("%d" , current);
                dequeue ();
                for(int i=0 ; i<n;i++)
                {
                        if ( a[current][i]   && !visited [i])
                        {
```

```
                    visited [i] = 1;
                    enqueue(i);
                }
            }
        }
}

void dfs(int a[][10] , int n, int start,
              int visited2[10]) {
        visited 2[start] = 1 ;
        printf ("%d ", start);
        for(int i=0 ; i<n ; i++) {
            if (a [start][i] && !visited2[i]){
                dfs (a , n, i, visited2);
            }
        }
}

void main ( )
{
        int n ;
        int start = 0;
        int visited2 [10];
        printf(" Enter no. of vertices: ");
        scanf(" %d " , &n);
        printf(" Enter ~~no~~ adjacency matrix :\n");
        for (int i=0 ; i<n ; i++)
        {
            for (int j=0 ; j<n ; j++)
                scanf("%d", &a[i][j]);
        }
```

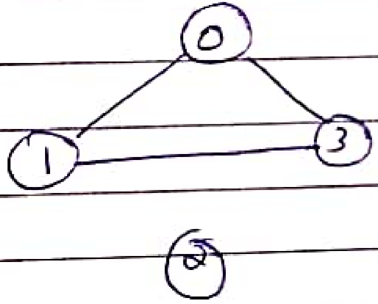
```
    printf ("BFS traversal: \n");
    bfs(n);

    for(int i=0 ; i<10 ; i++){
        visited2[i]=0;
    }

    printf("DFS traversal : \n");
    dfs(a, n, start, visited2);
}
```

OUTPUT -

```
Enter no of vertices: 4
Enter adjacency matrix:
 0 1 0 1
 1 0 0 1
 0 0 0 0
 1 1 0 0
BFS traversal :
 1 0 3
DFS traversal :
 0 1 3
Disconnected graph
```



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