

Experiment No :8.3

DFS :

```
#include<iostream>

#define max 100

using namespace std;

class DFS
{
    int adj[max][max],n,top=-1,arr[max],check[max];

    public:
    void getdata()
    {
        cout<<"How many vertices are there? : ";
        cin>>n;
        cout<<"\n\n";
        for(int i=1;i<=n;i++)
        {
            cout<<"\n";
            for(int j=1;j<=n;j++)
            {
                cout<<"Enter 1 if edge is present otherwise 0 between "<<i<<"and
" <<j<<": ";
                cin>>adj[i][j];
            }
            check[i]=0;
        }
        for(int i=1;i<=n;i++)
```

```

        {
            cout<<"\n";
            for(int j=1;j<=n;j++)
            {
                cout<<" "<<adj[i][j];
            }

        }
    }

void graph()
{
    int i=1;
    for(int cnt=1;cnt<=n;cnt++)
    {

        if(check[i]==0)
        {
            push(i);
            check[i]=1;
        }

        pop();

        for(int j=1;j<=n;j++)
        {
            if(adj[i][j]==1 && check[j]==0)
            {
                push(j);
                check[j]=1;
            }
        }
    }
}

```

```

        }
    }
    i=arr[top];
}
}
void push(int k)
{
    cout<<k<<" inserted in stack\n";
    arr[++top] = k;
}
void pop()
{
    cout<<arr[top]<<" Deleted";
    arr[top--]=0;
}

};

int main()
{
    DFS b1;
    b1.getdata();
    b1.graph();
}

```

*****Output*****

```
How many vertices are there? : 3

Enter 1 if edge is present otherwise 0 between 1and 1: 1
Enter 1 if edge is present otherwise 0 between 1and 2: 0
Enter 1 if edge is present otherwise 0 between 1and 3: 1

Enter 1 if edge is present otherwise 0 between 2and 1: 1
Enter 1 if edge is present otherwise 0 between 2and 2: 1
Enter 1 if edge is present otherwise 0 between 2and 3: 0

Enter 1 if edge is present otherwise 0 between 3and 1: 0
Enter 1 if edge is present otherwise 0 between 3and 2: 0
Enter 1 if edge is present otherwise 0 between 3and 3: 0

  1  0  1
  1  1  0
  0  0  01 inserted in stack
1 Deleted3 inserted in stack
3 Deleted-1 inserted in stack
-1 Deleted2 inserted in stack
```