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Prac- 8 : Write a program to check whether the graph is planar or not.

```
#include<bits/stdc++.h>
using namespace std;
int flag;
vector<int>graph[100];
int vis[101];

void circuit(int i){
    vis[i]=1;
    if(flag!=0)return;
    for(auto &x:graph[i]){
        if(vis[x]==1){
            flag++;
            return;
        }
        else{
            circuit(x);
        }
    }
}

int main(){
    int n,m;
    cin>>n>>m;

    for(int i=0;i<m;i++){
        int x,y;
        cin>>x>>y;
        graph[x].push_back(y);
        graph[y].push_back(x);
    }
    for(int i=1;i<=n;i++){
        if(vis[i]==0){
            circuit(i);
            if(flag!=0)break;
        }
    }

    if(flag!=0){
        if(m<=(3*n-6)){
            cout<<"\nIt is a PLANAR Graph.\n";
        }
        else{
            cout<<"\nIt is a NonPLANAR Graph.\n";
        }
    }
}
```

```

    }
}
else{
    if(m<=(2*n-4)){
        cout<<"\nIt is a PLANAR Graph.\n";
    }
    else{
        cout<<"\nIt is a NonPLANAR Graph.\n";
    }
}
}
}

```

OUTPUT :

```

----- Square ( PLANER ) -----
4 3
1 2
2 3
3 4
1 4

```

It is a PLANAR Graph.

```

----- K5 ( NONPLANER ) -----
5 10
1 2
2 3
3 4
4 5
1 5
1 3
1 4
2 5
2 4
3 5

```

It is a NonPLANAR Graph.