


```

    }
}

```

4 Graph

4.1 2sat

```

//harki mesle i khodesh 2 * i notesh 2 * i + 1 he
//yale u -> v yani agar u yek baseh v ham bayad yek bashe
vector<int> out[maxn * 2] , in[maxn * 2] , topol , adj[maxn];

bool visited[maxn * 2];

int color[maxn * 2] , c , val[maxn] , r[maxn] ;

void add_edge(int v , int u)
{
    out[v].pb(u);
    in[u].pb(v);
}

void dfs(int v)
{
    visited[v] = 1;

```

```

        for(auto u : out[v])
            if(!visited[u])
                dfs(u);

        topol.pb(v);
    }

void sfd(int v)
{
    visited[v] = 1;
    color[v] = c;
    for(auto u : in[v])
        if(!visited[u])
            sfd(u);
}

for(int i = 0; i < 2 * n; i++)
    if(!visited[i])
        dfs(i);

reverse(topol.begin() , topol.end());
memset(visited , 0 , sizeof visited);
for(int v = 1 ; v <= 2 * m + 1 ; v++)
    if(!visited[v])
        sfd(v) , c++;

for(int i = 1; i <= m; i++)
    if(color[2 * i] == color[2 * i + 1])
        return cout << "NO" << endl , 0;

```