Depth First Search
(C++)

#csspree Online

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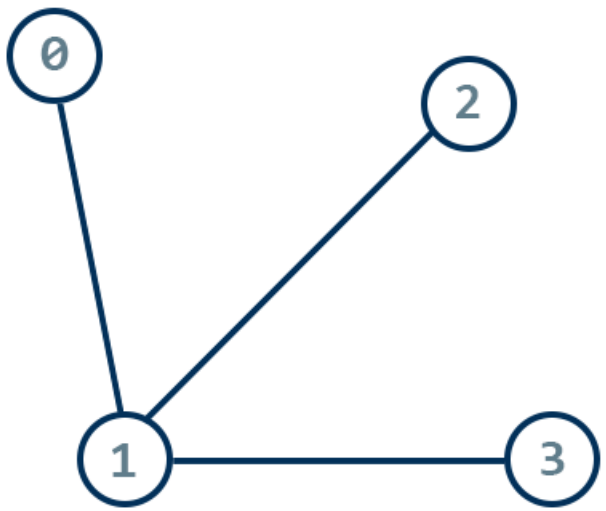

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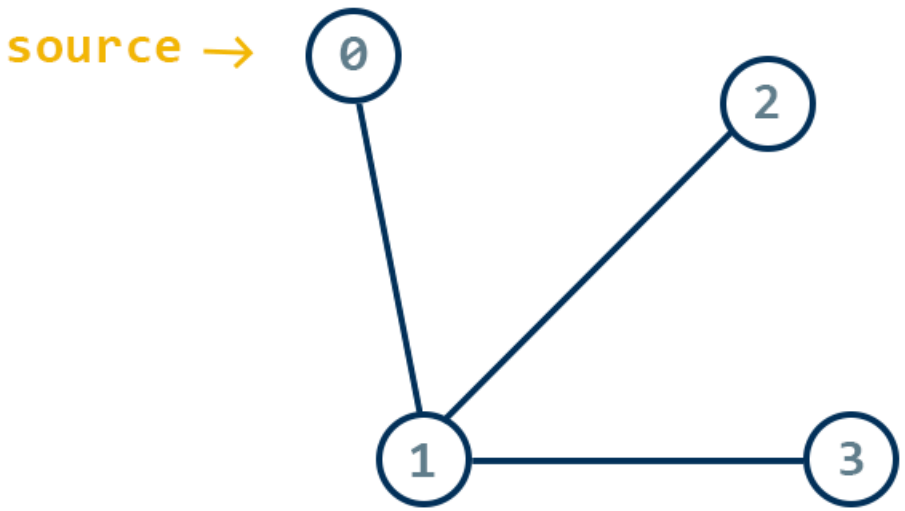

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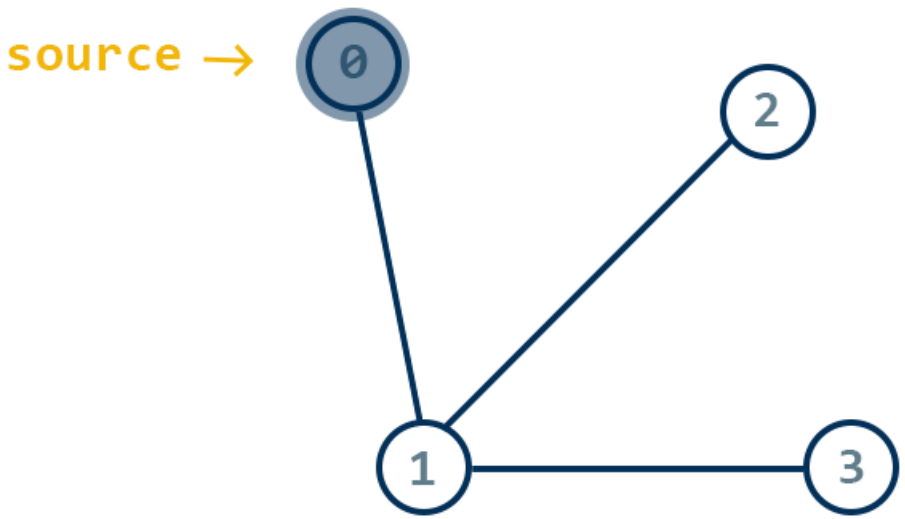

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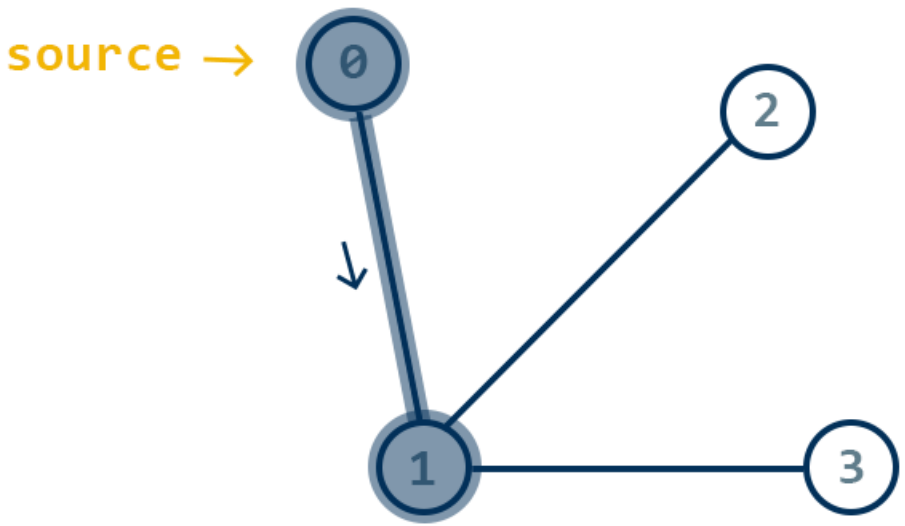

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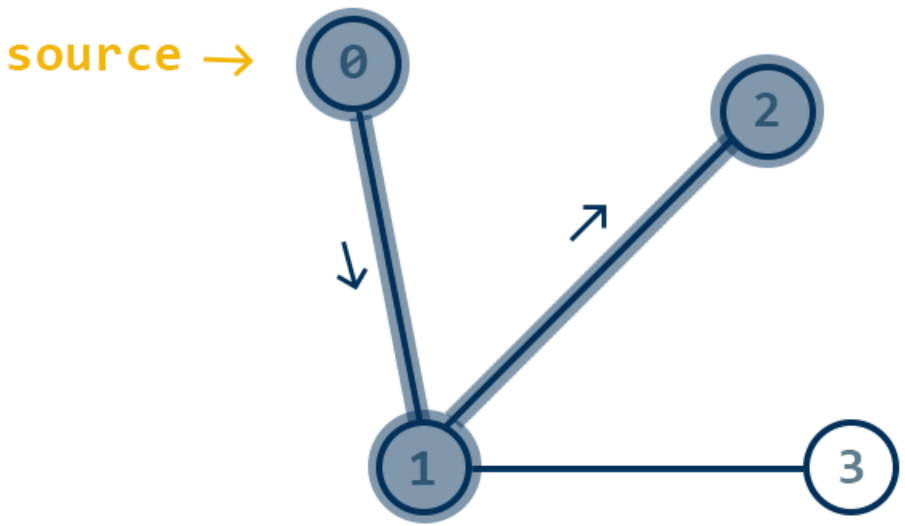

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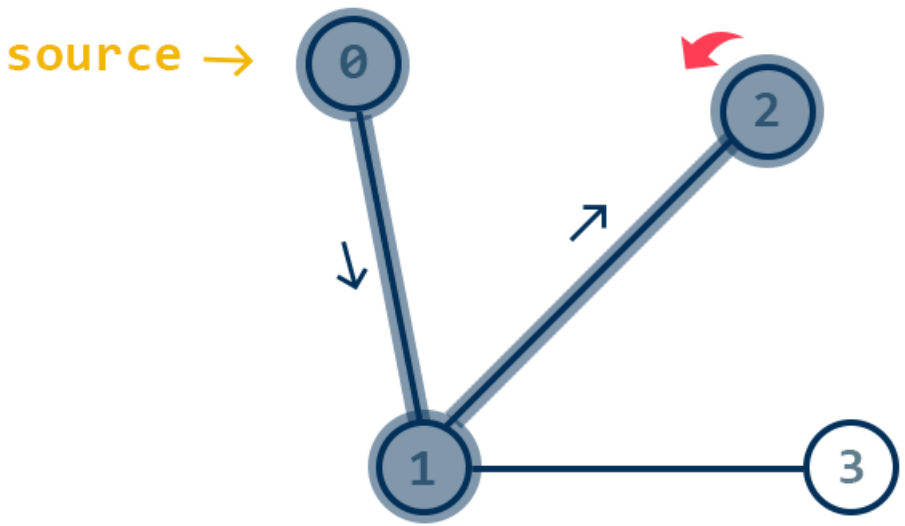

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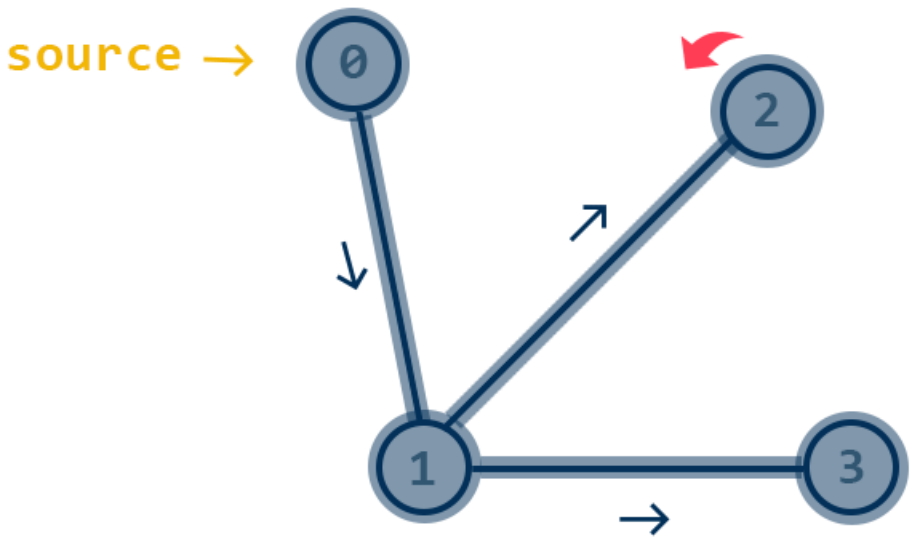

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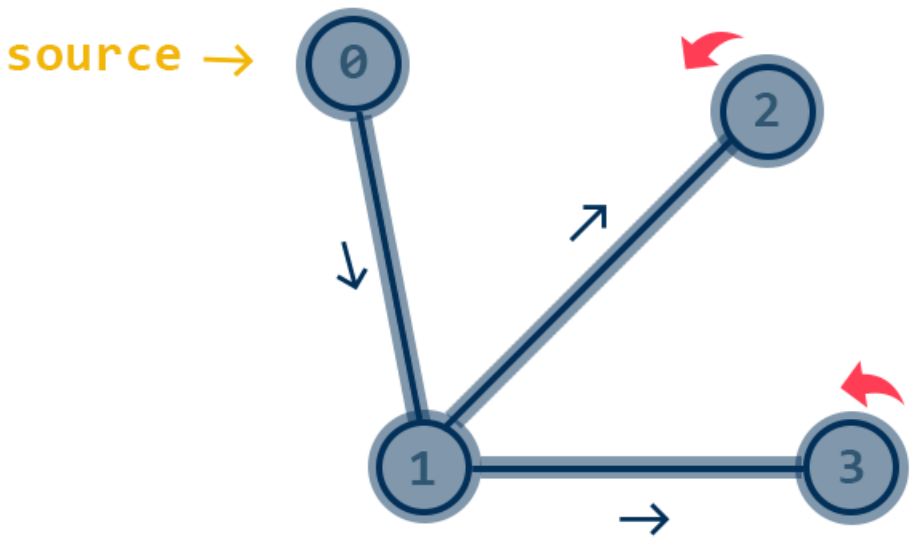

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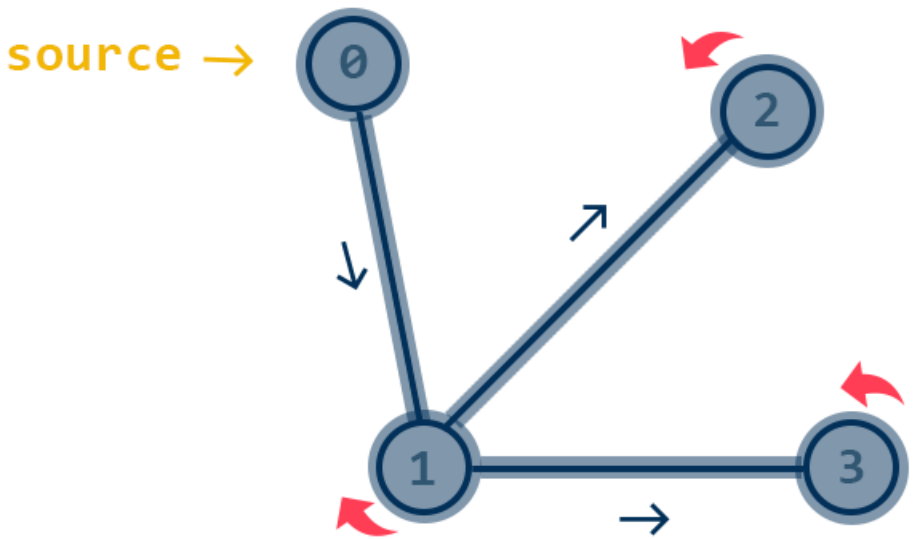

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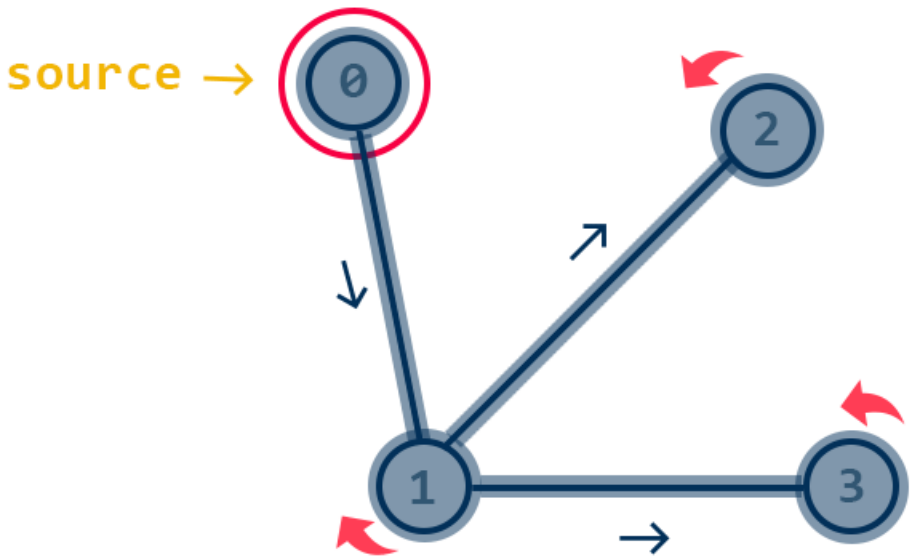

when the dfs is back to the starting source, the "traversal" for that call is done!

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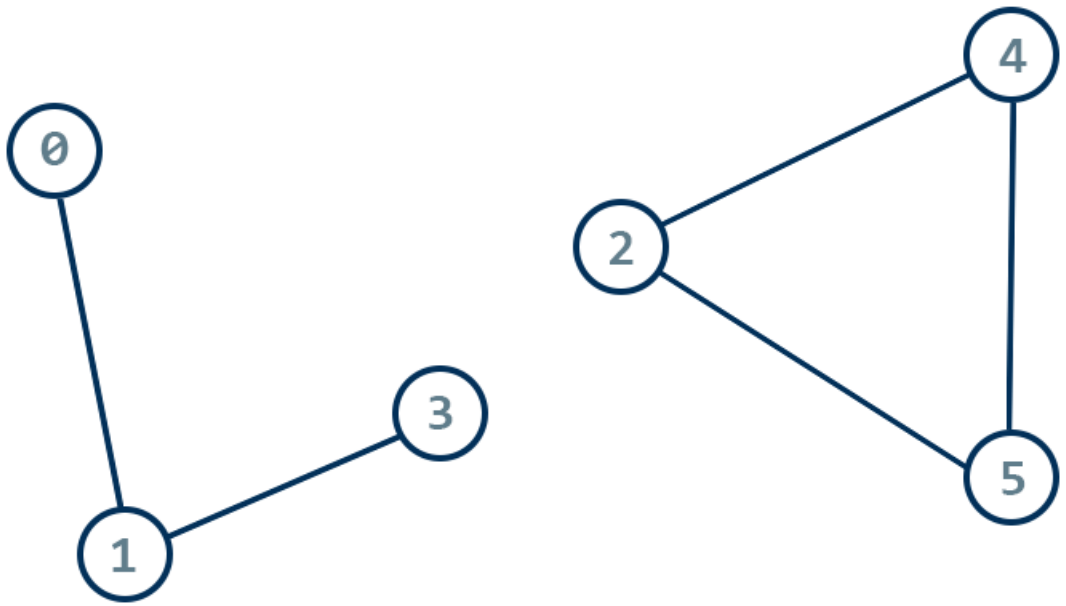

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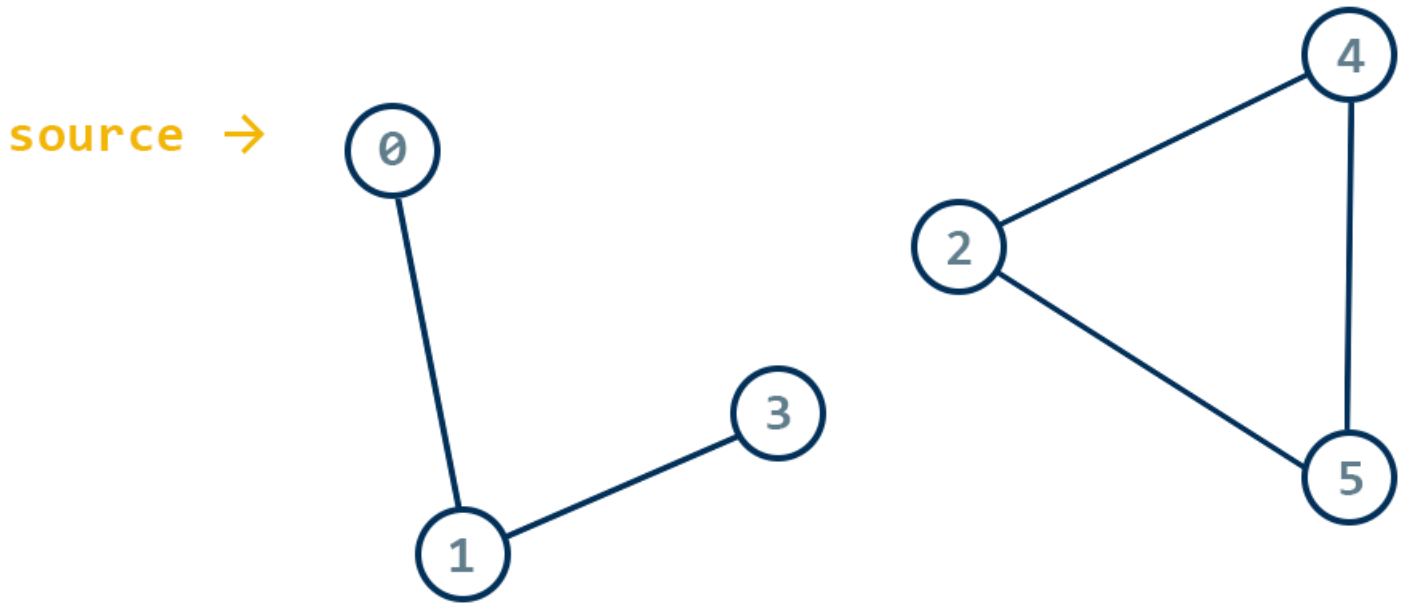

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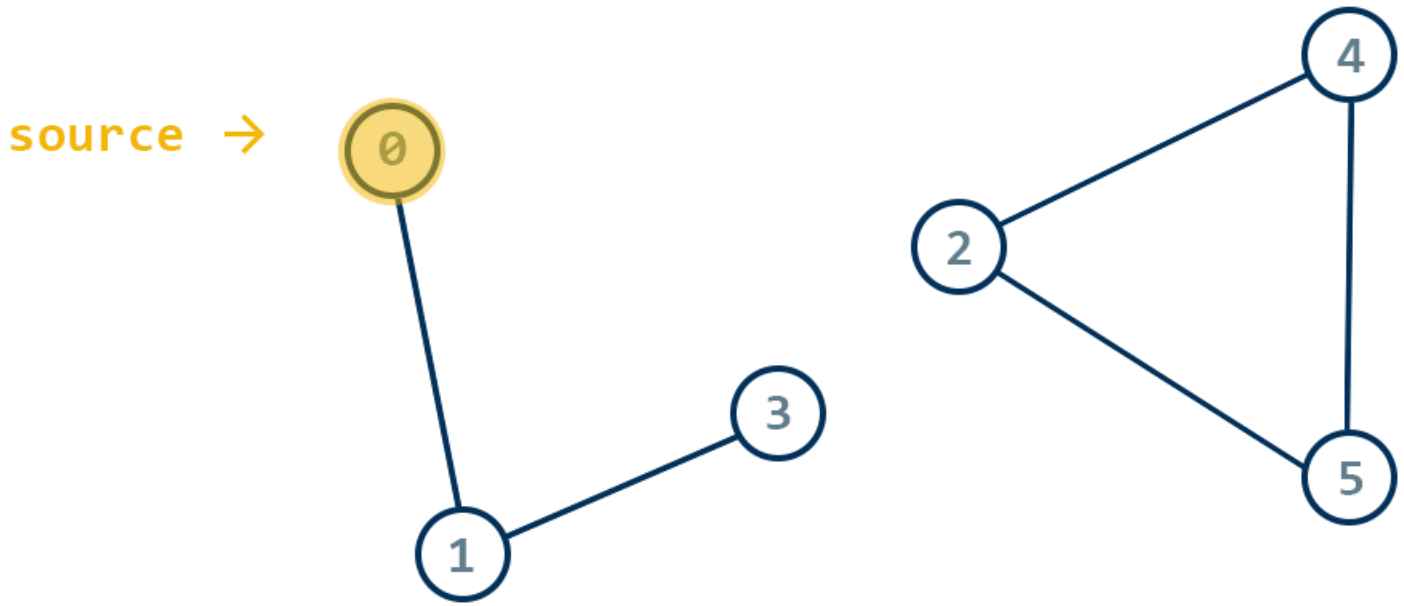

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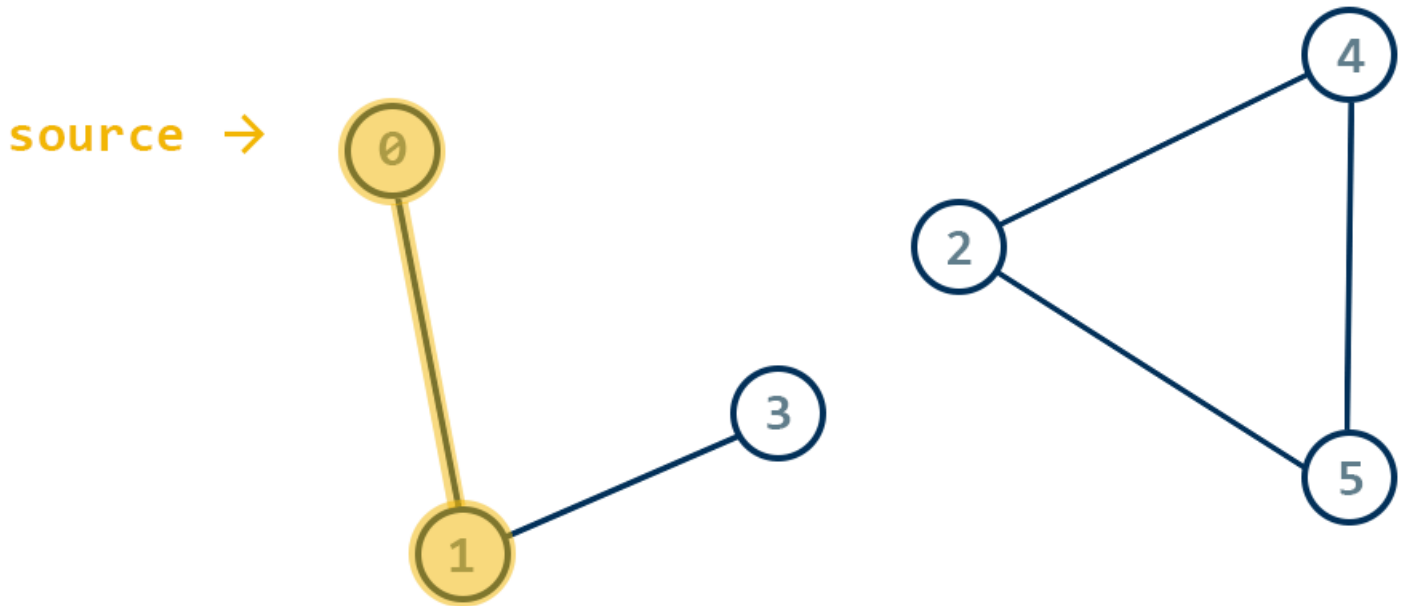

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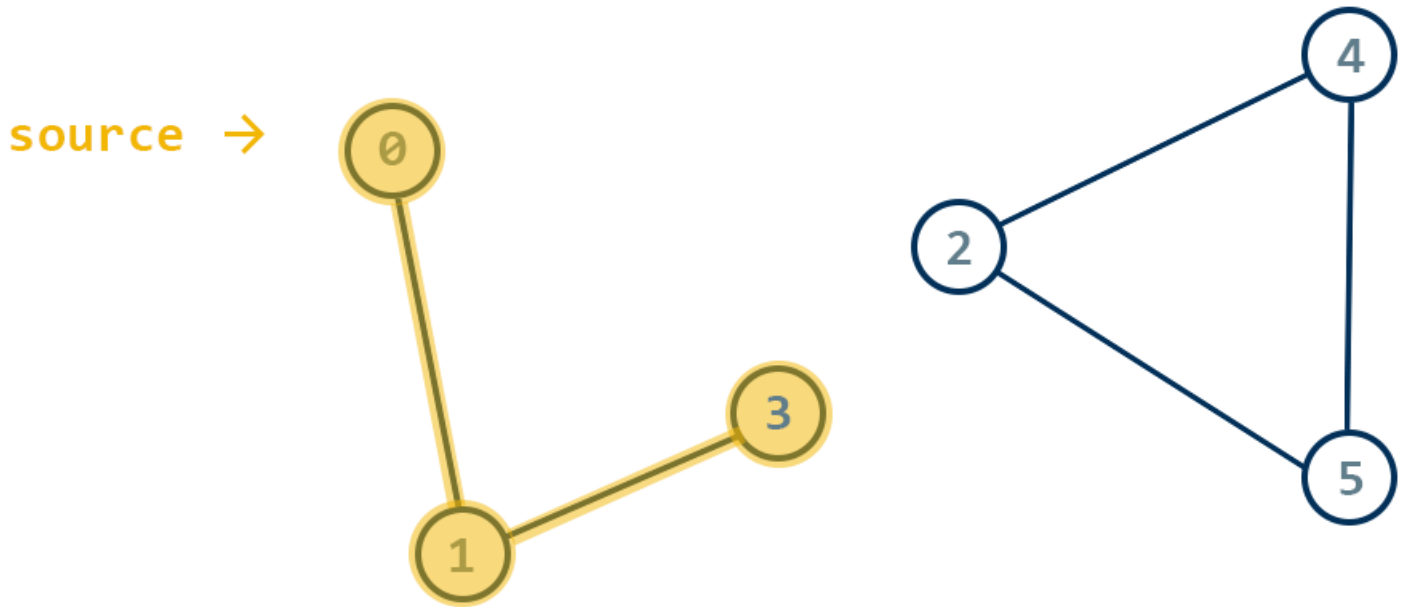

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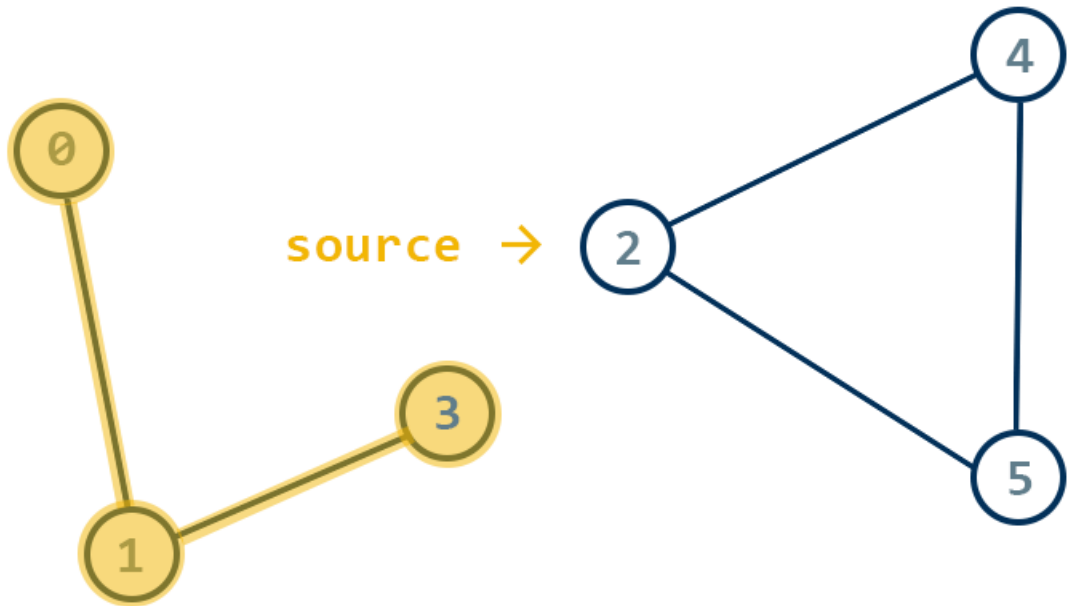

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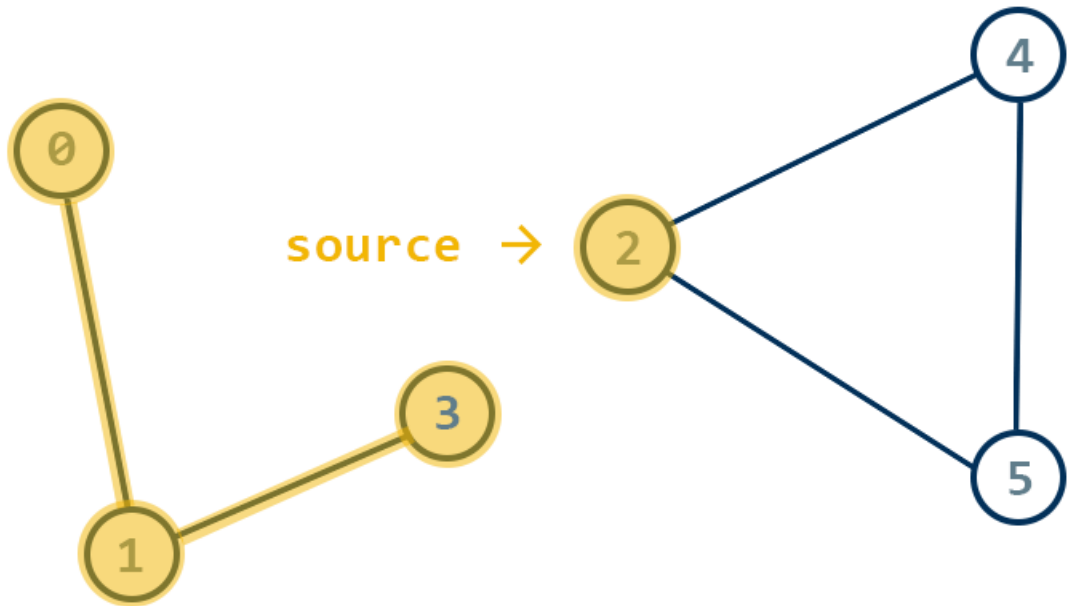

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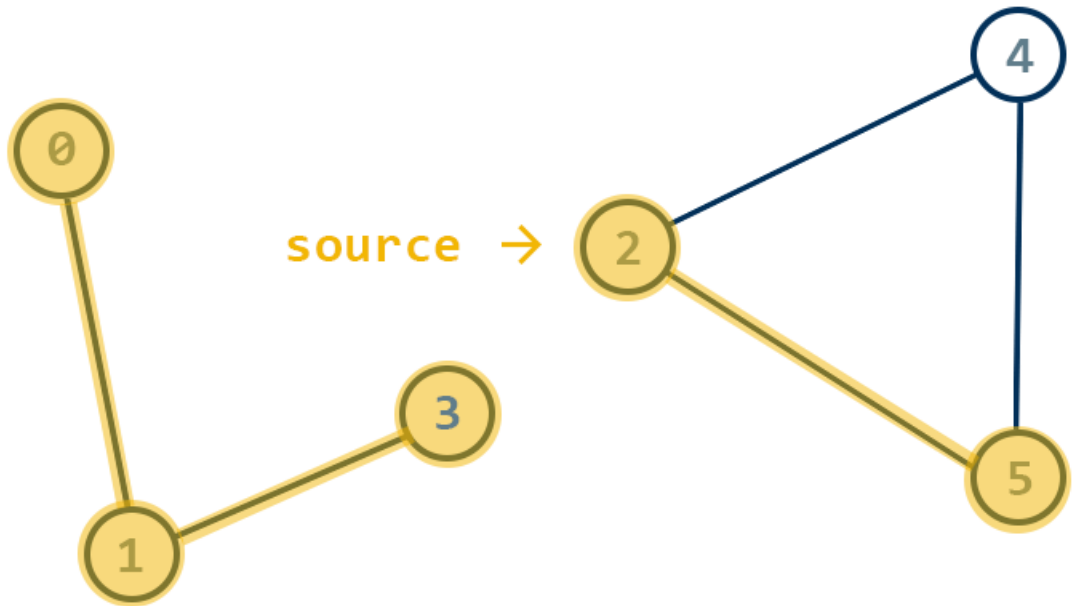

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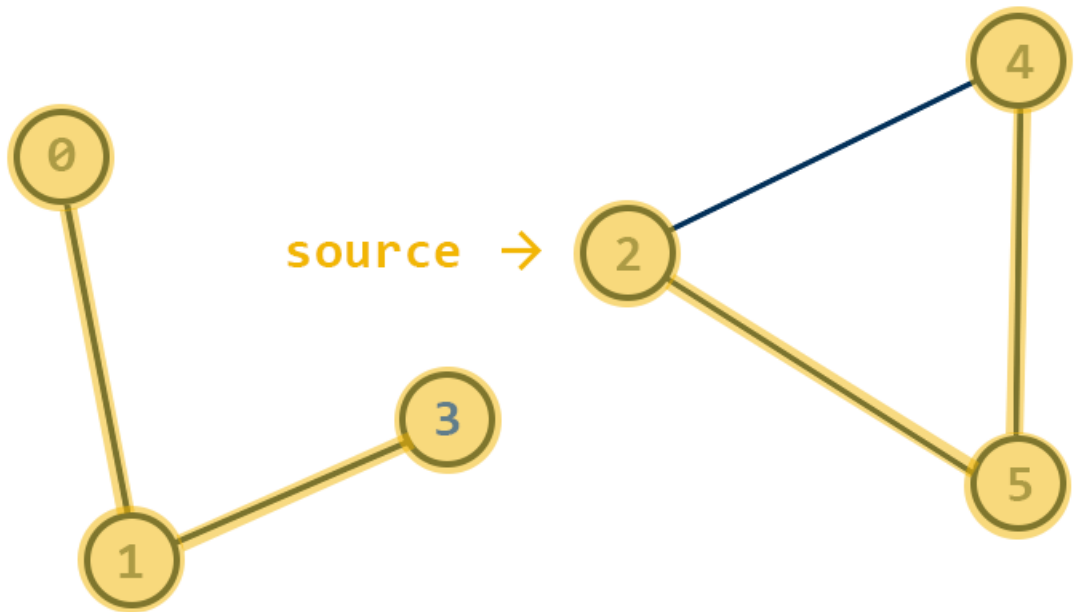

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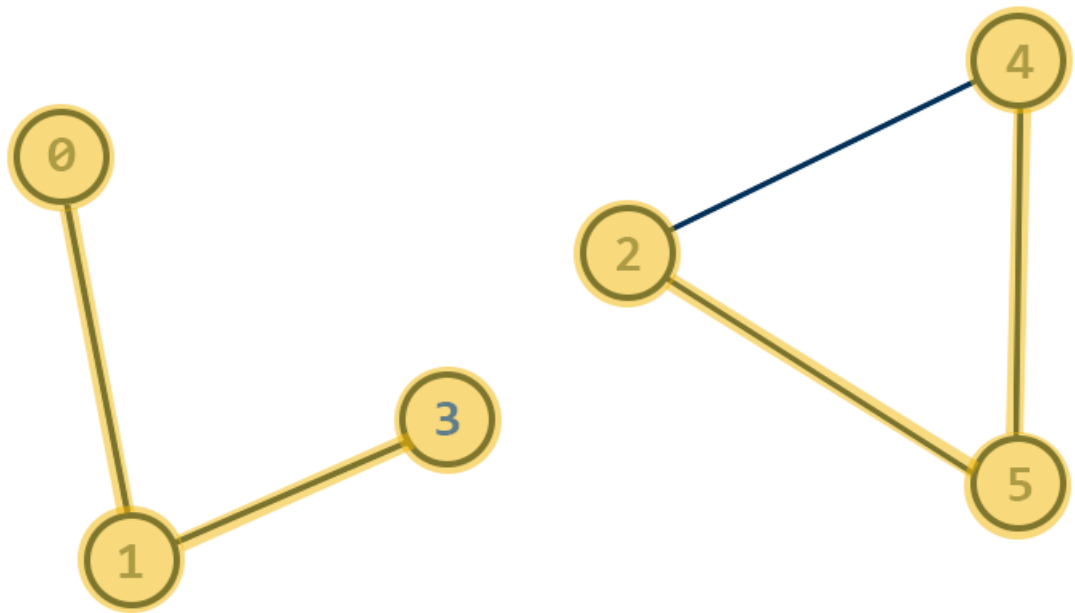


```
Total dfs call = 2
```

DFS Simulation

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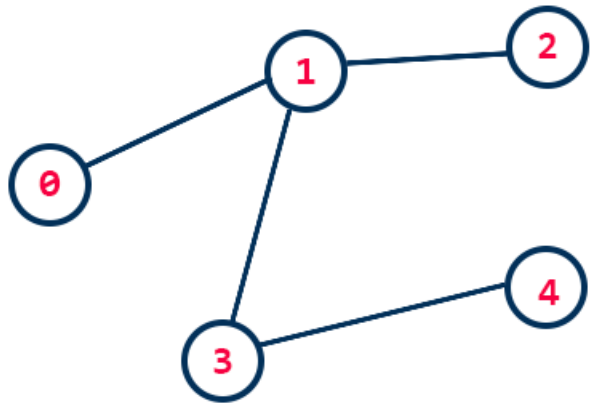

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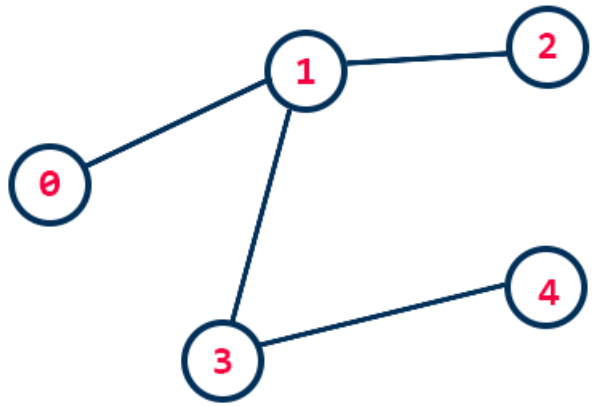

0	1
1	0, 2, 3
2	1
3	1, 4
4	3

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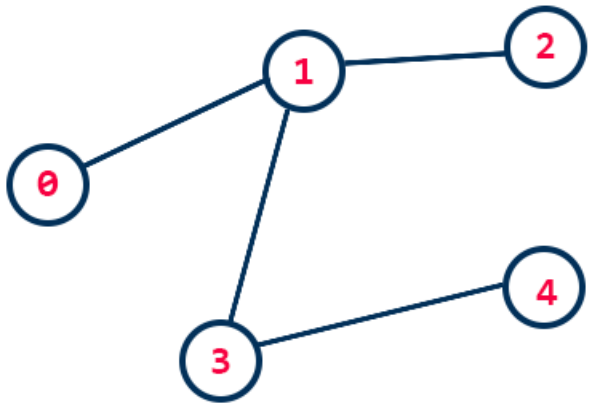
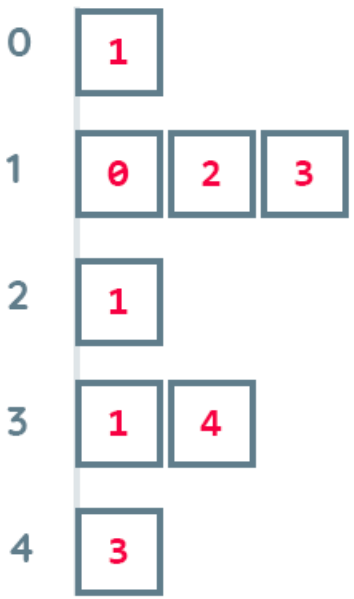



```
bool visited[5];
```



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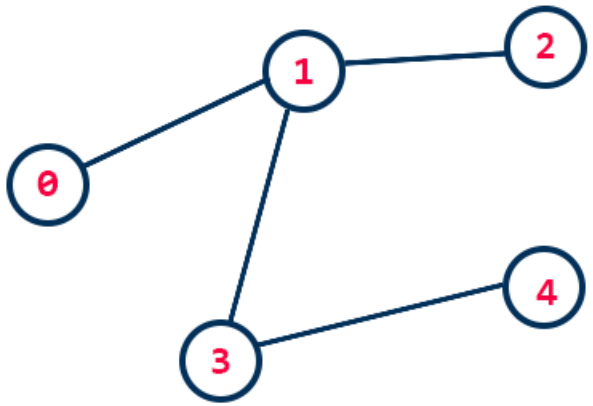


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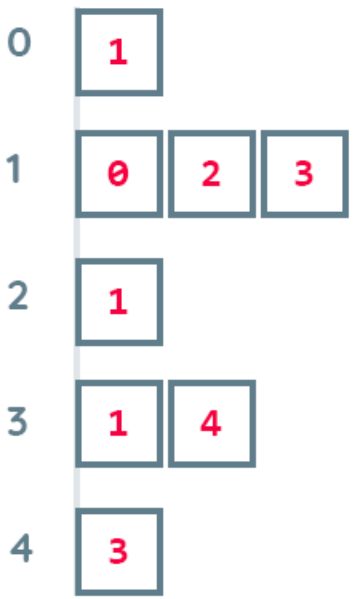
0	0	0	0	0
0	1	2	3	4



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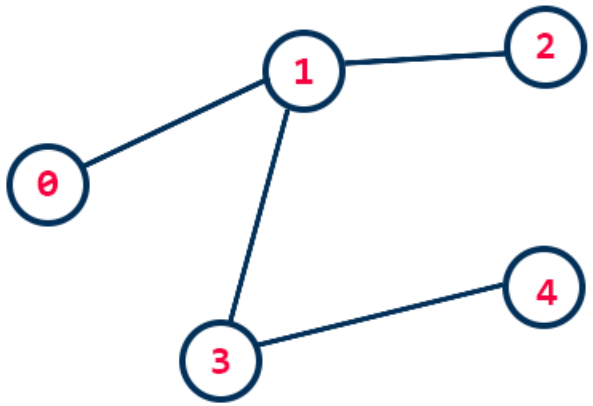


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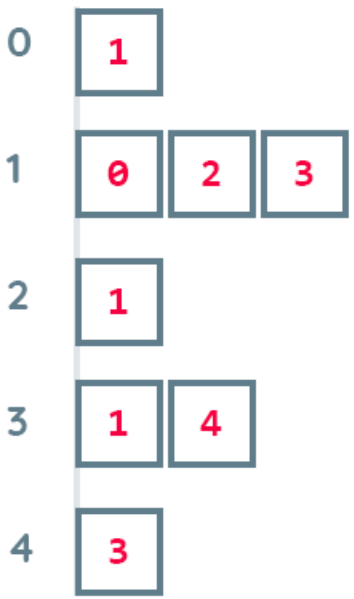


```
nodes: 0  1  2  3  4
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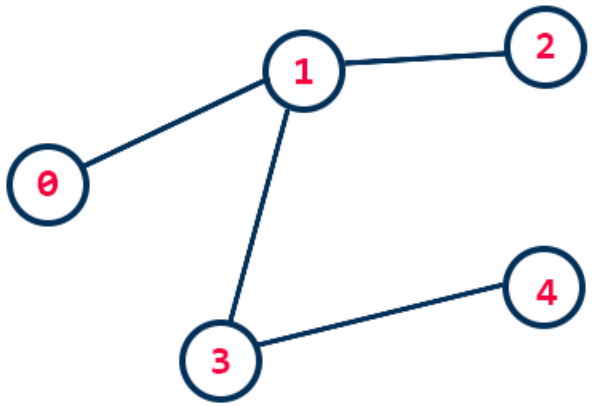


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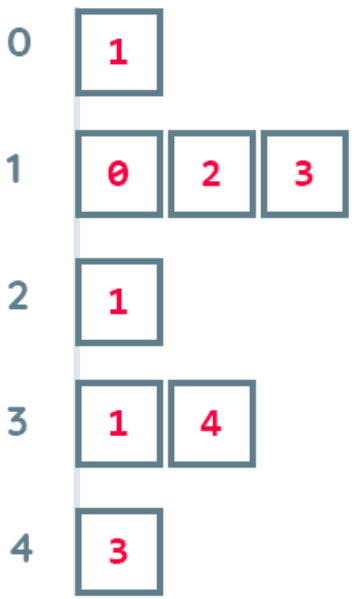


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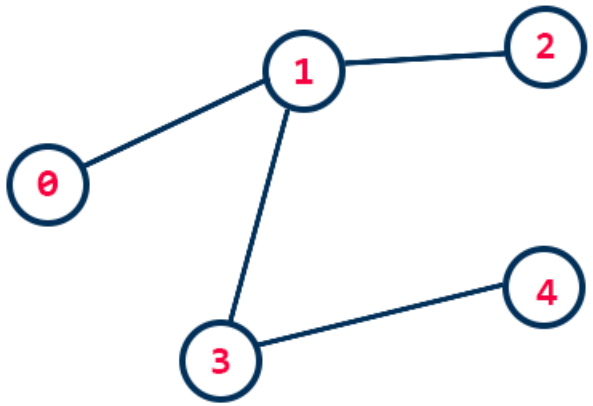

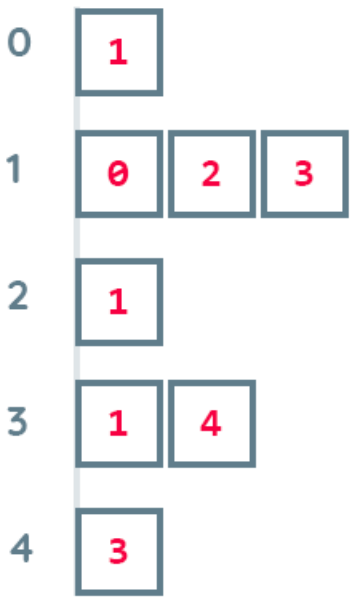


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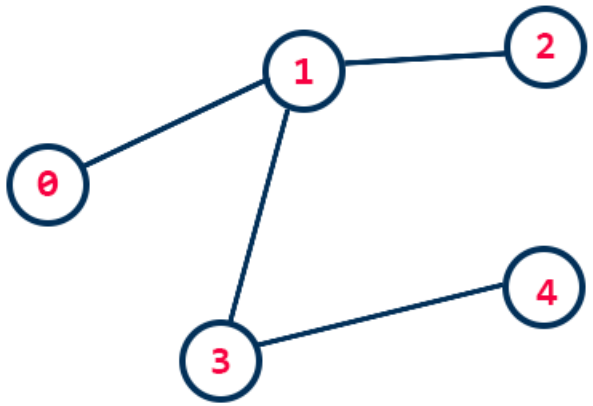

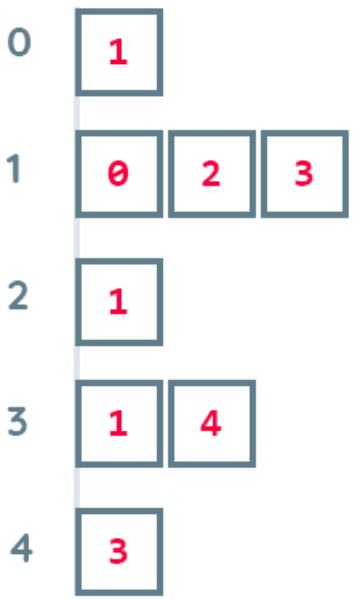


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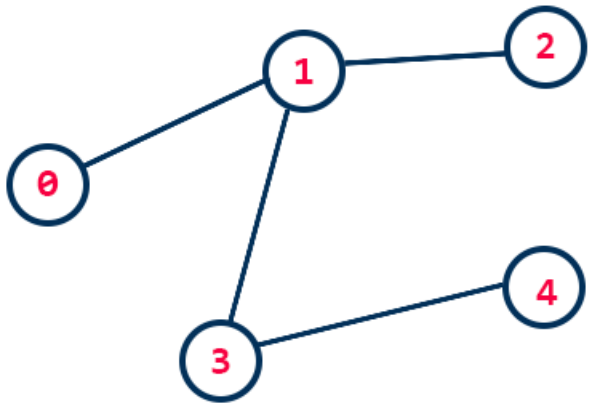

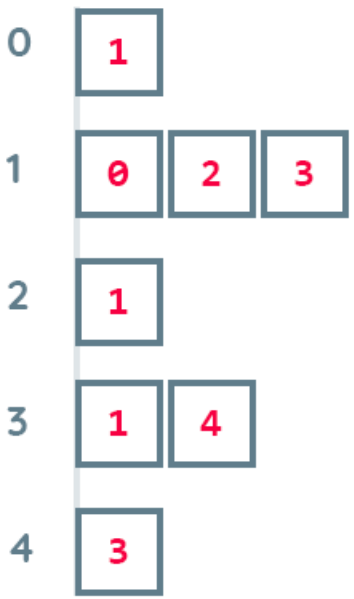


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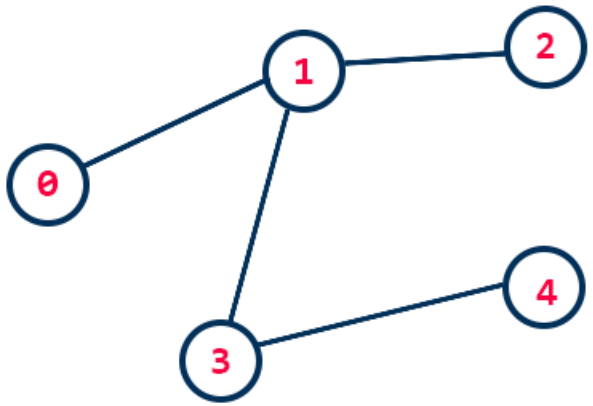

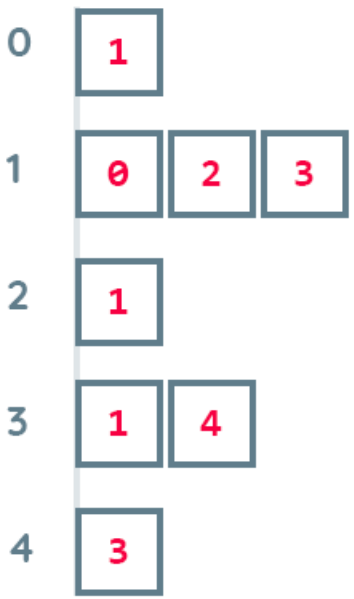


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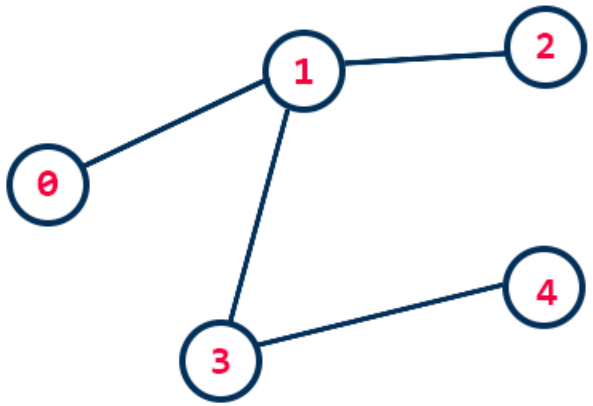

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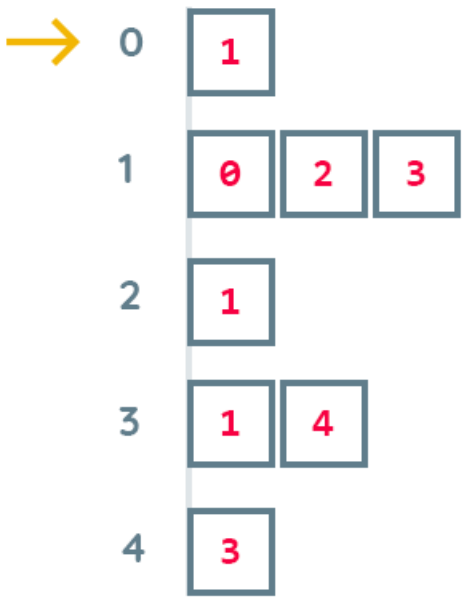


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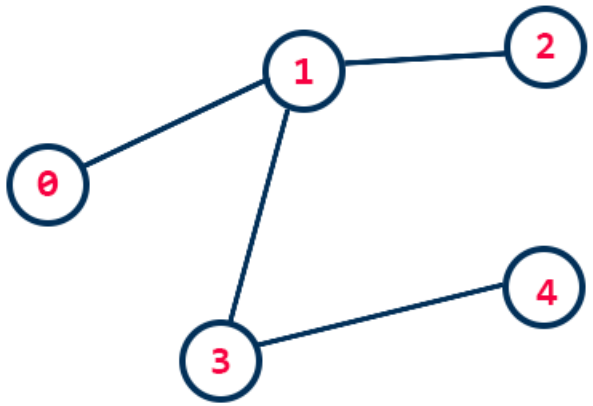

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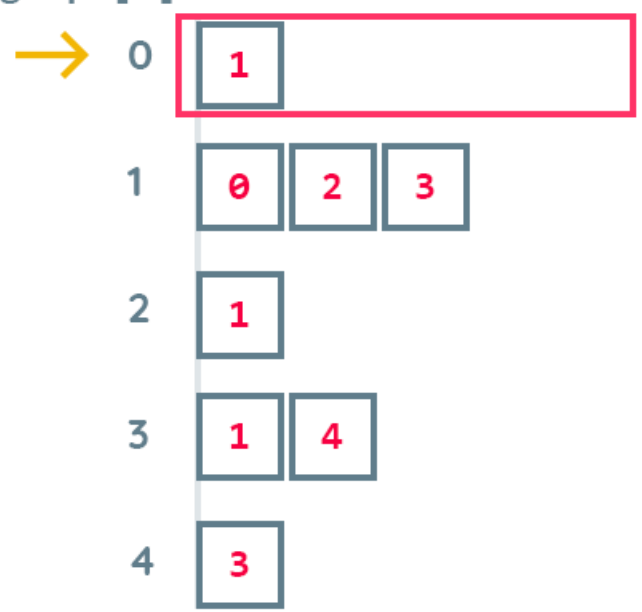


```
bool visited[5];
```

1	0	0	0	0
0	1	2	3	4

```
// 1 means that index(node)
// is visited
```

nodes: 0 1 2 3 4

source: 0

```
dfs(source):
   visited[source] = 1
   for next in graph[source]:
      if not visited[next]:
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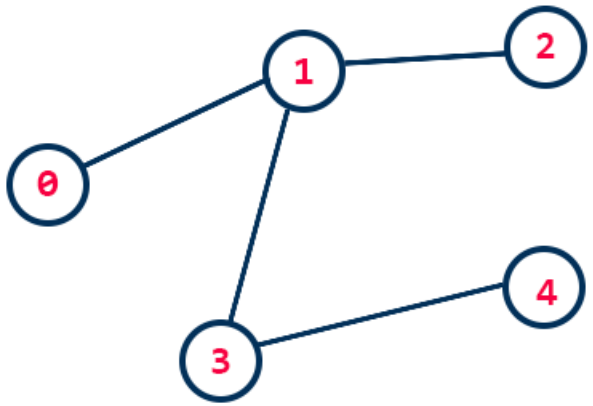
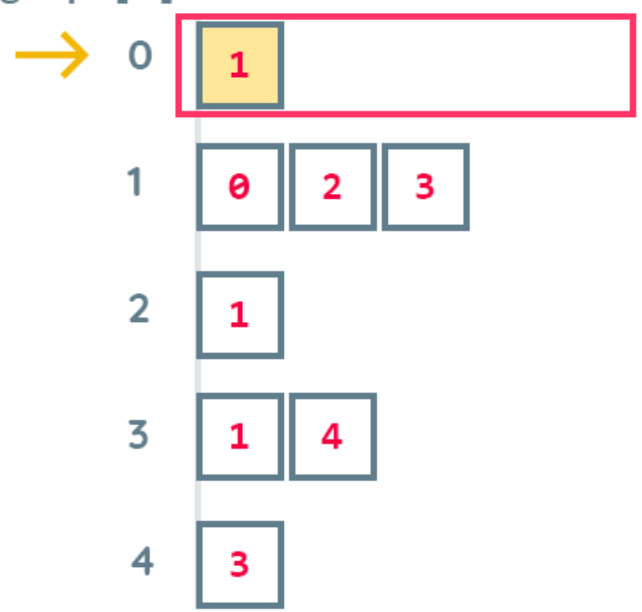
```

DFS Simulation



graph[0]

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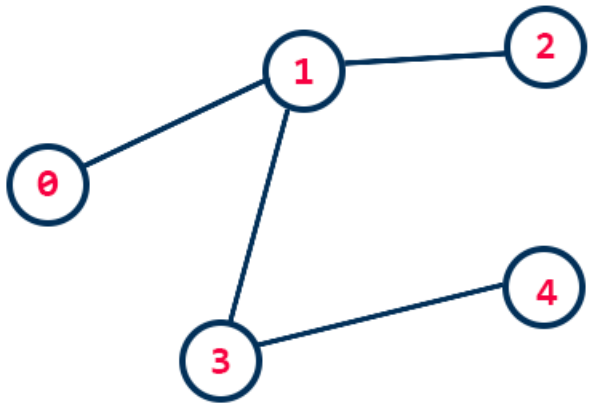

graph[0]

0	1
1	0 2 3
2	1
3	1 4
4	3

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bool visited[5];
```

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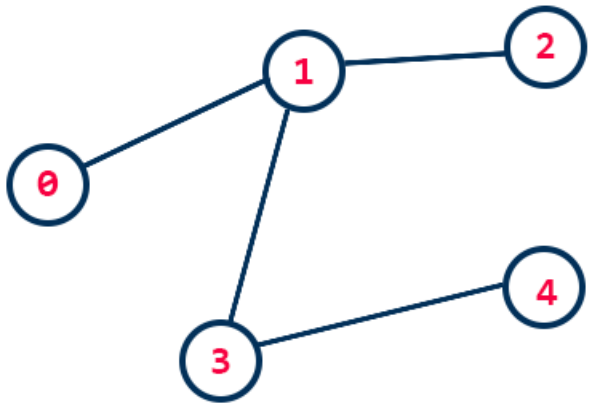


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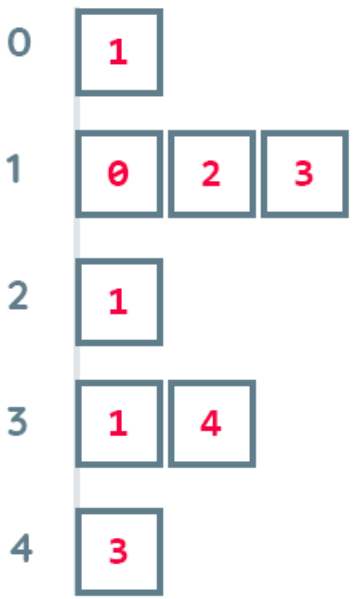

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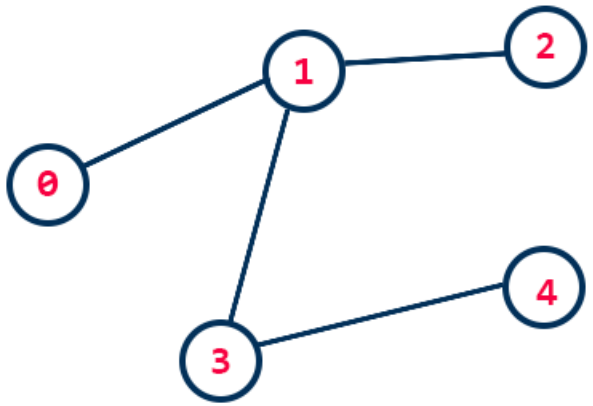

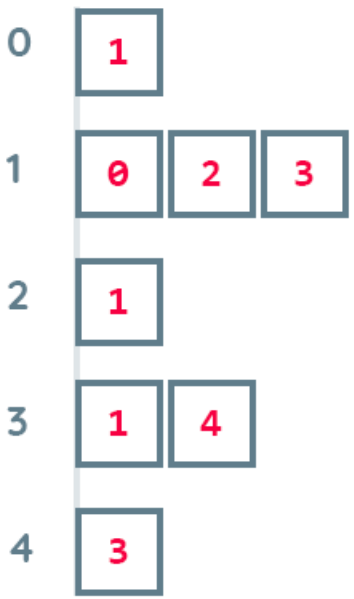


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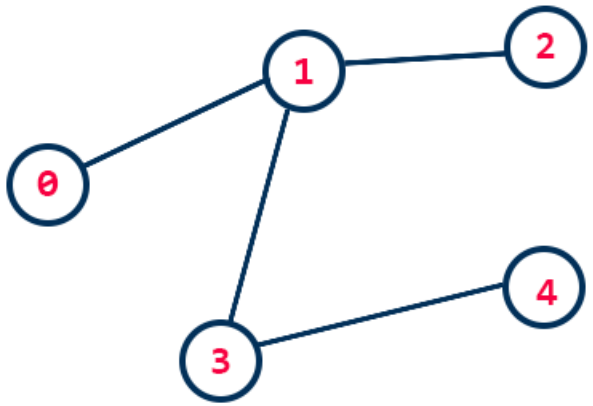


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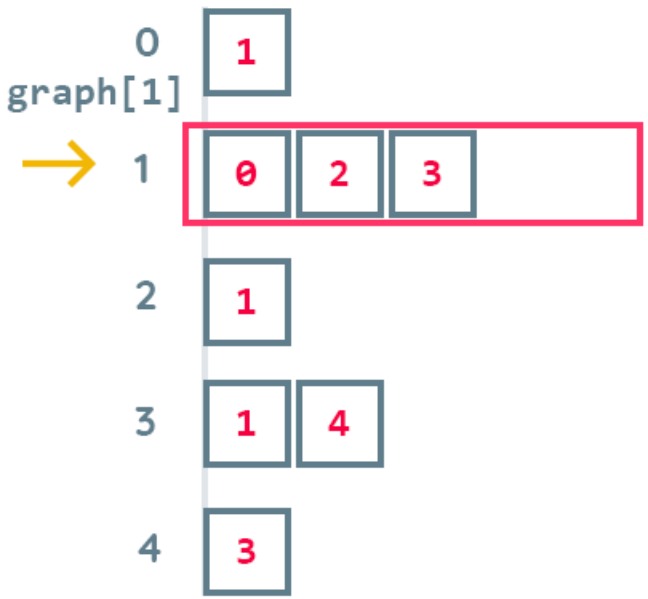

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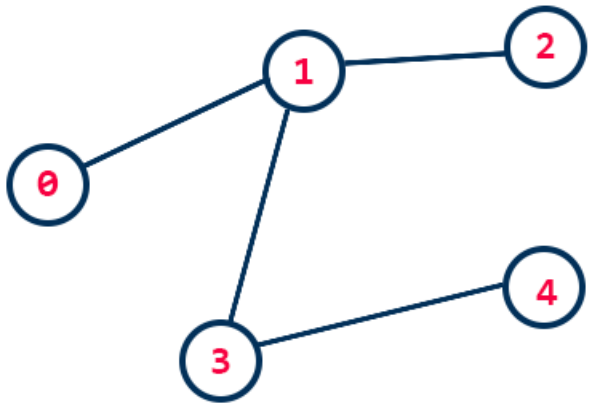


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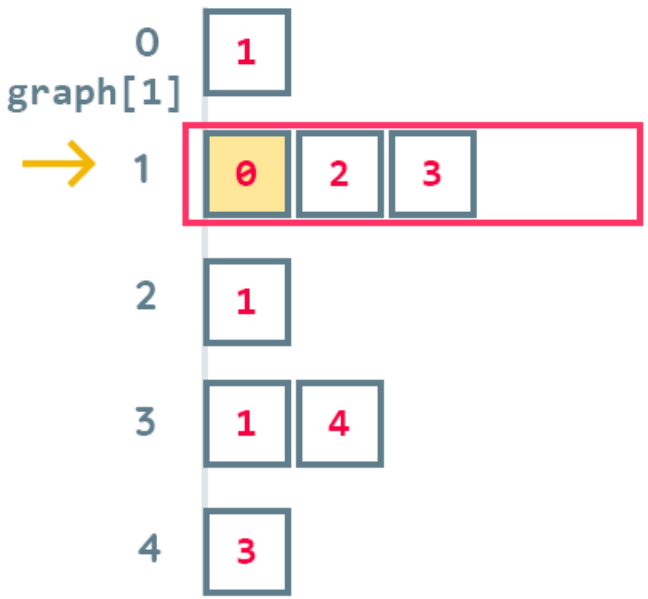

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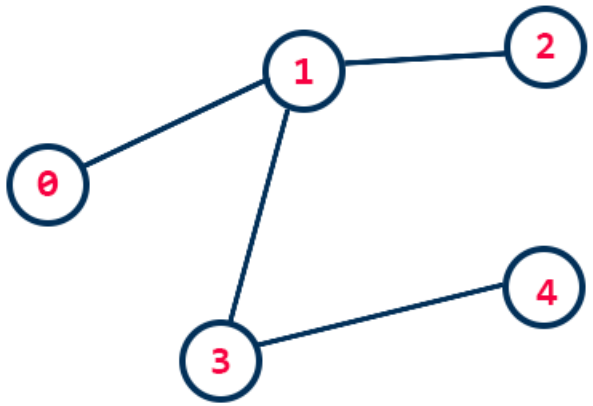


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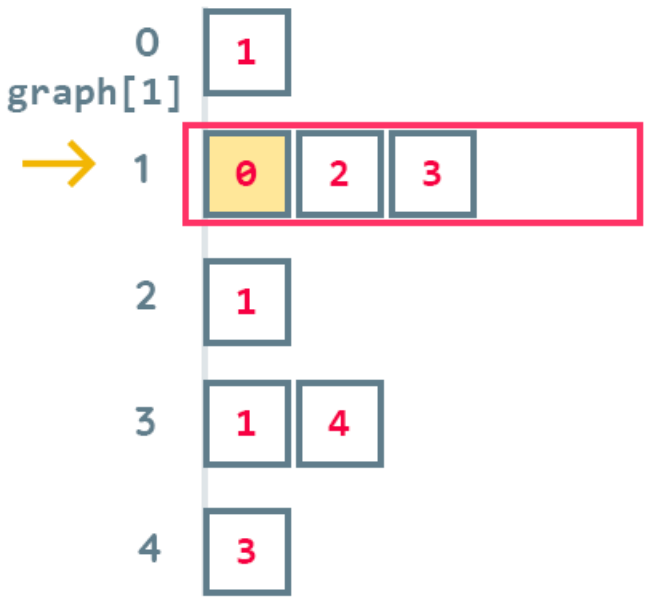

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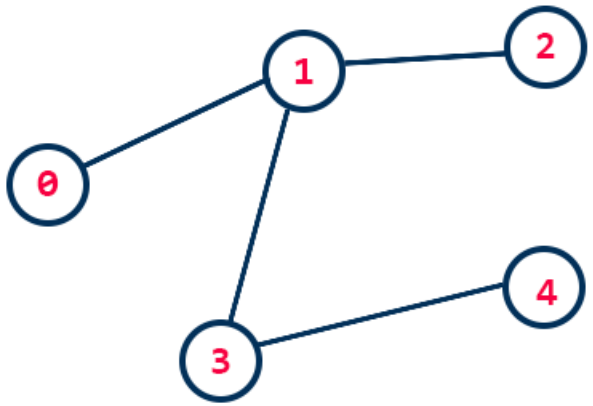


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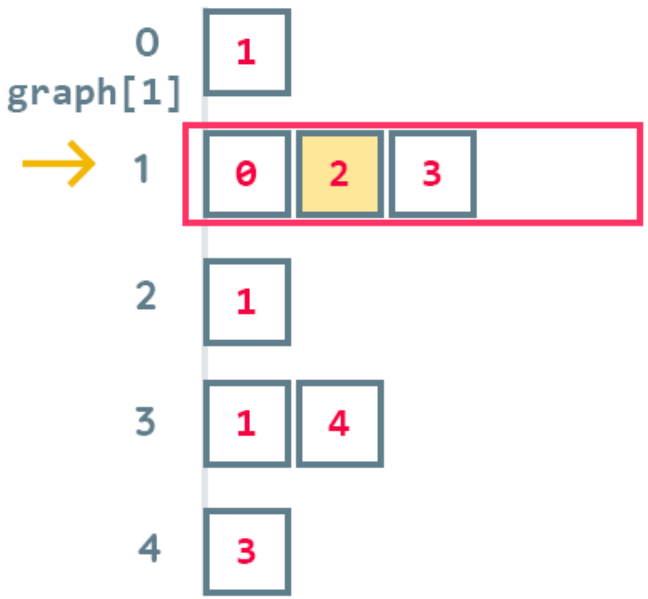

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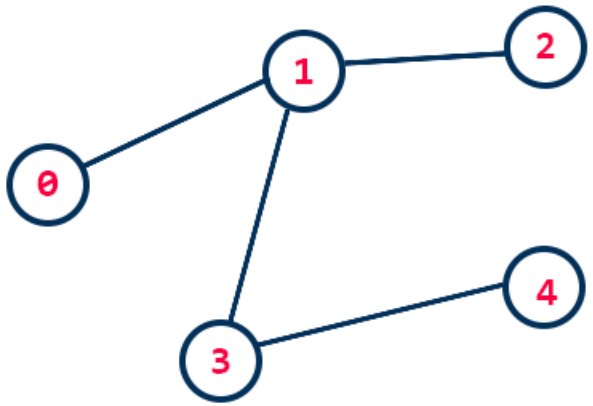


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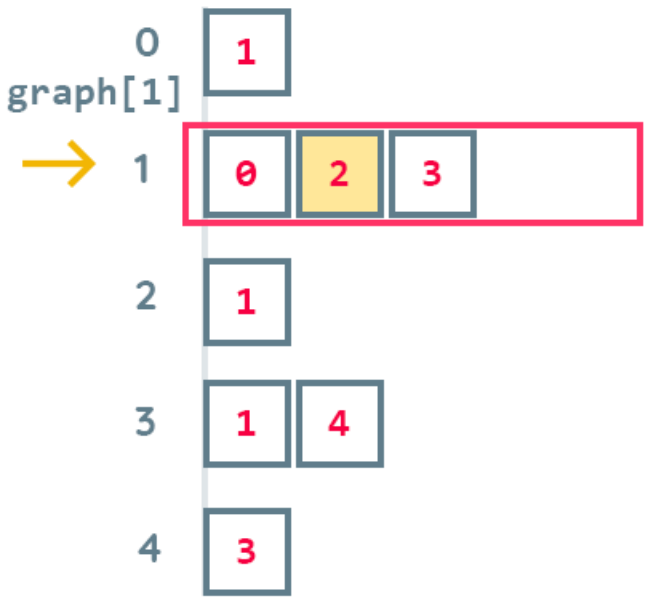

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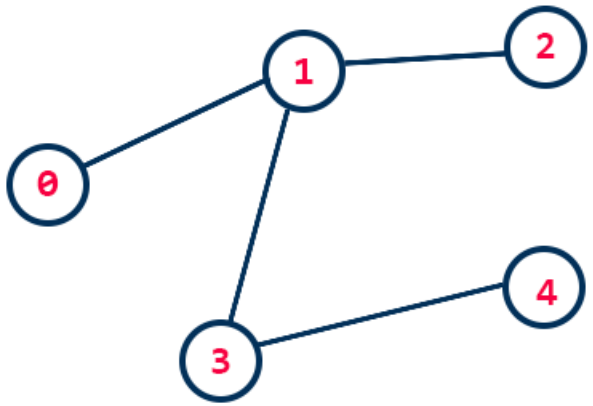


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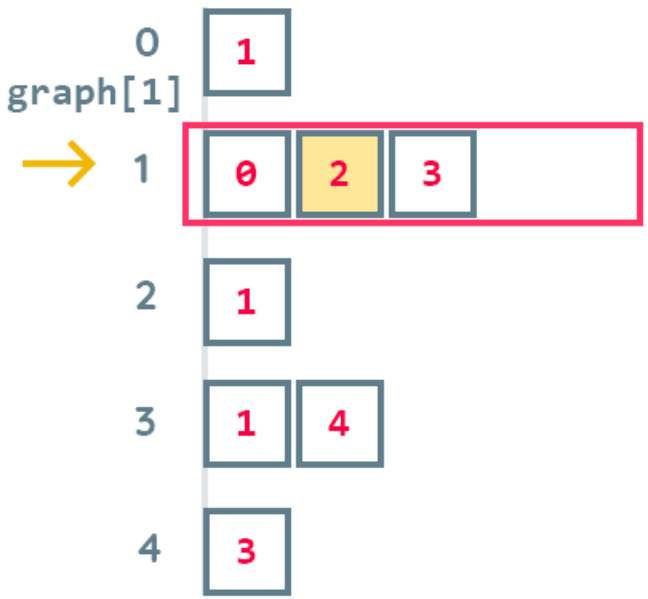

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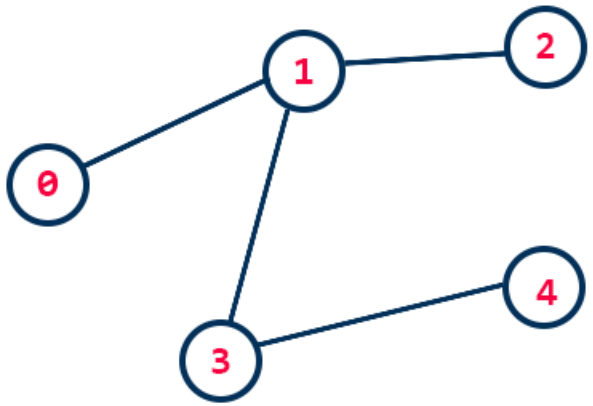
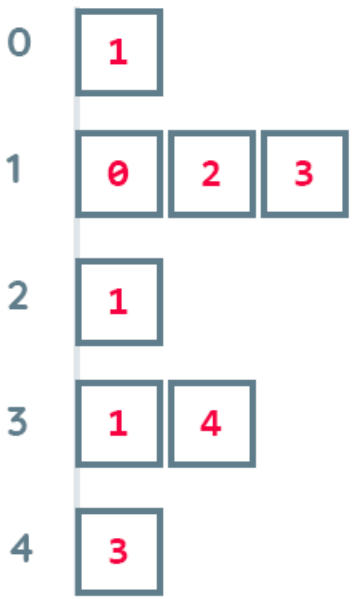
DFS Simulation






```
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1	1	0	0	0
0	1	2	3	4

```
// 1 means that index(node)
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```

nodes: 0 1 2 3 4

source: 2

```
dfs(source):
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   for next in graph[source]:
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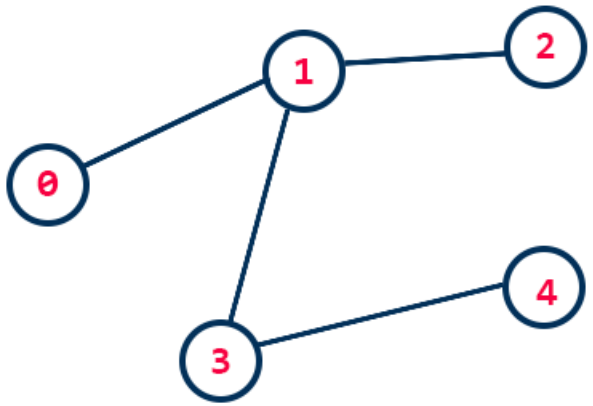
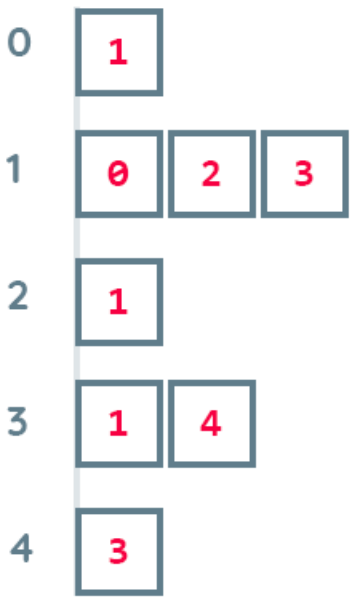
DFS Simulation



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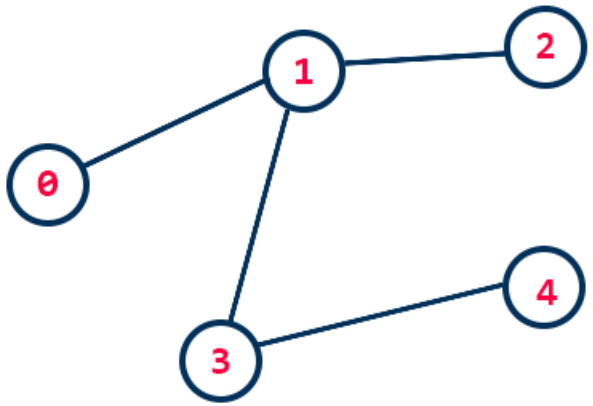


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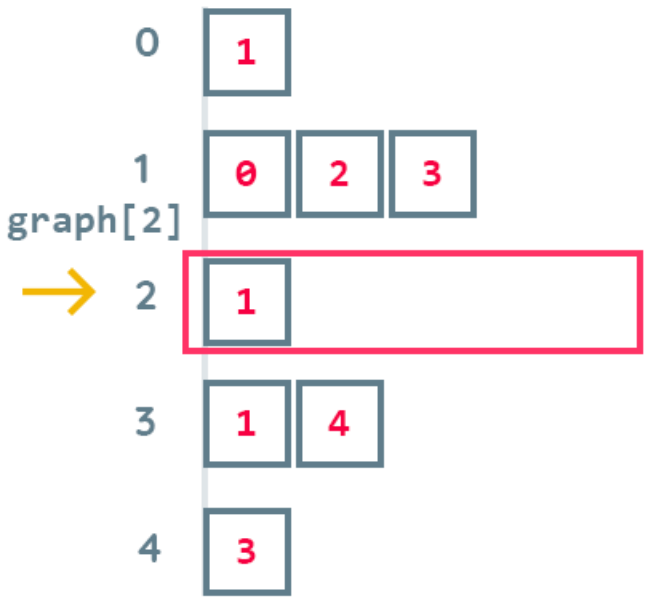

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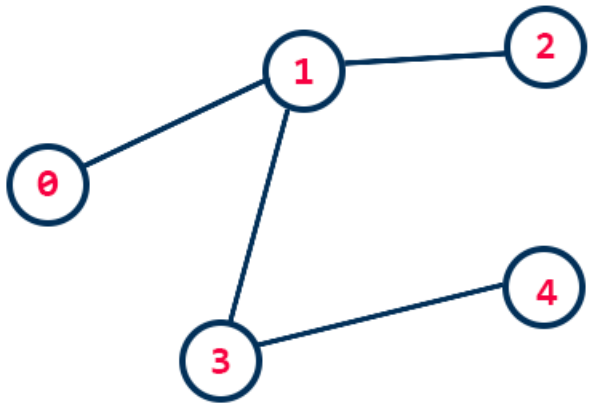

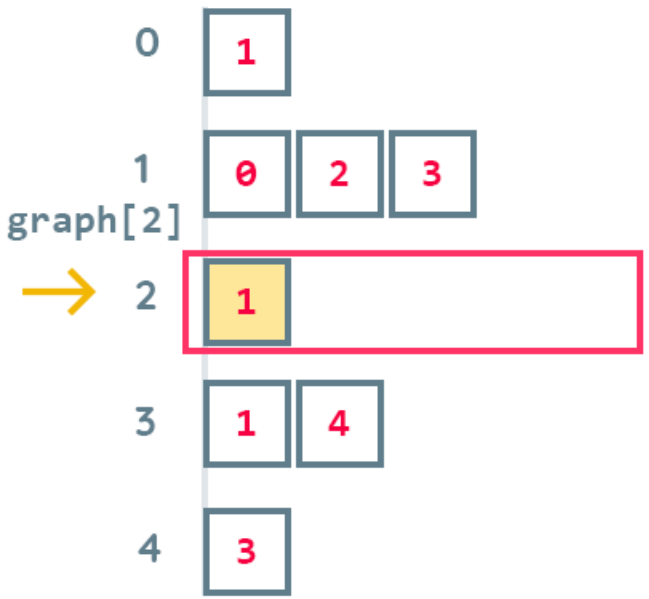


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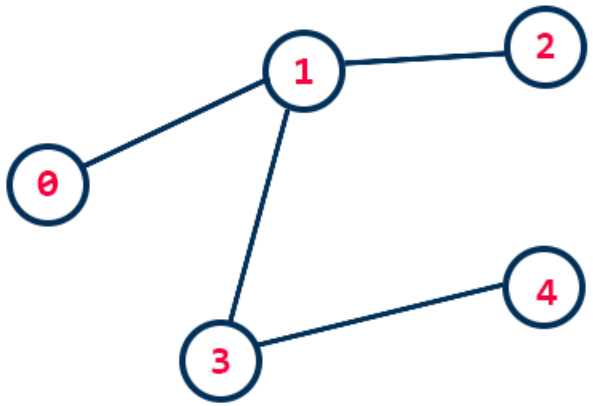

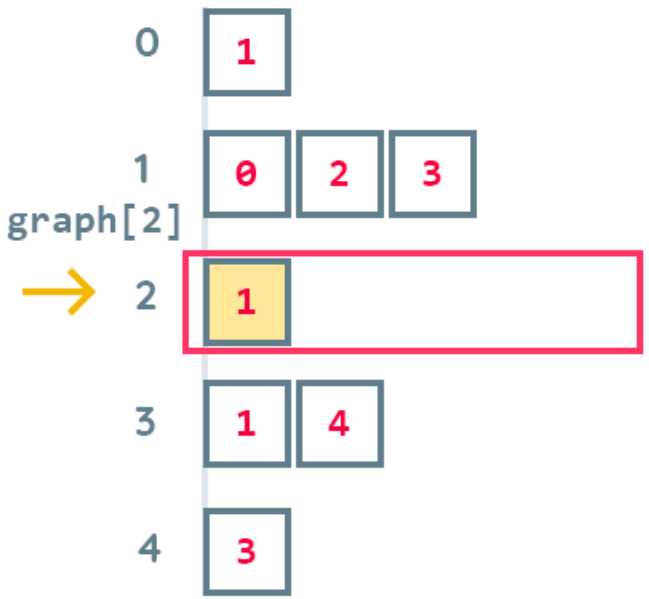


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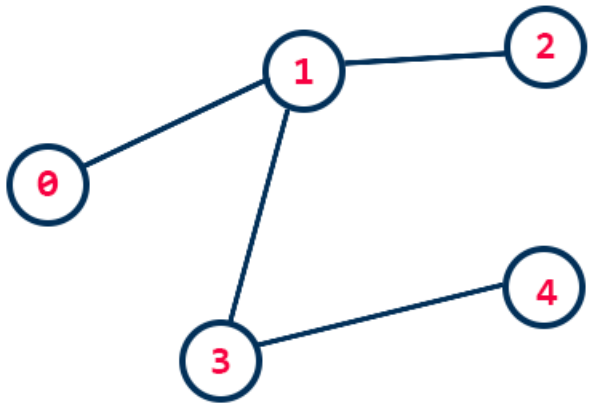


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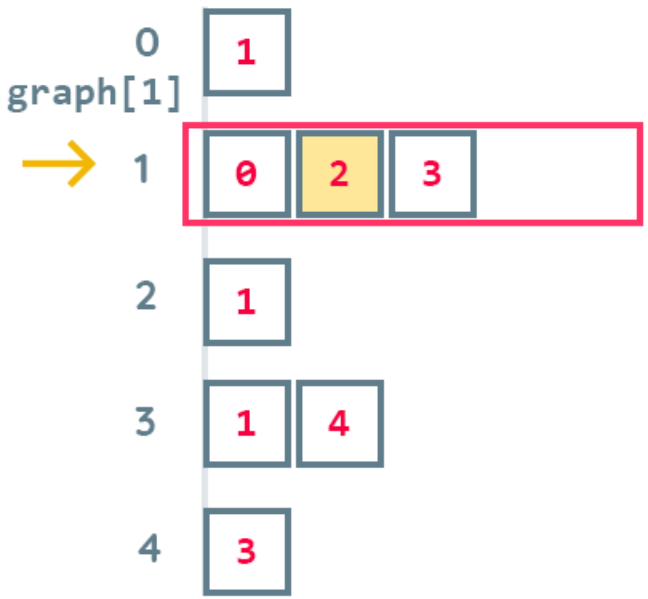

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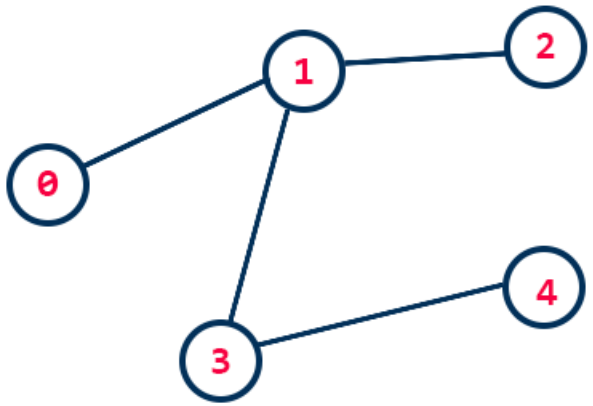


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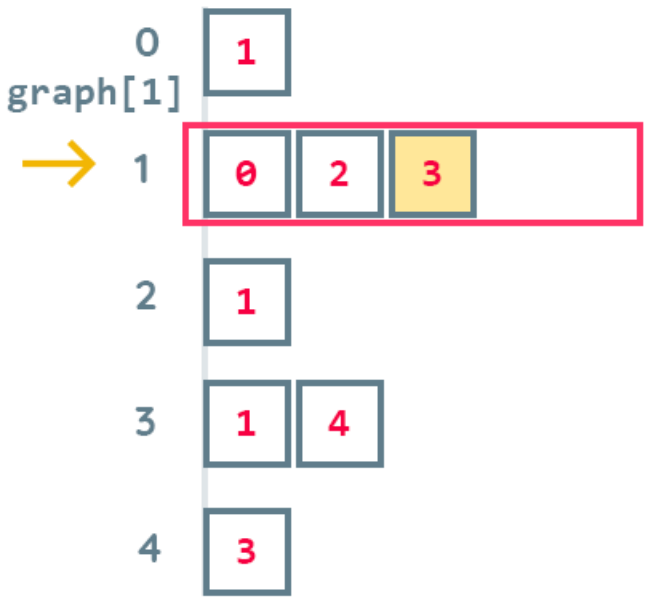

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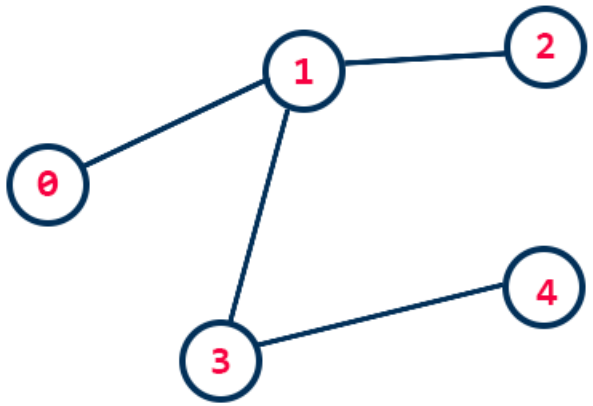


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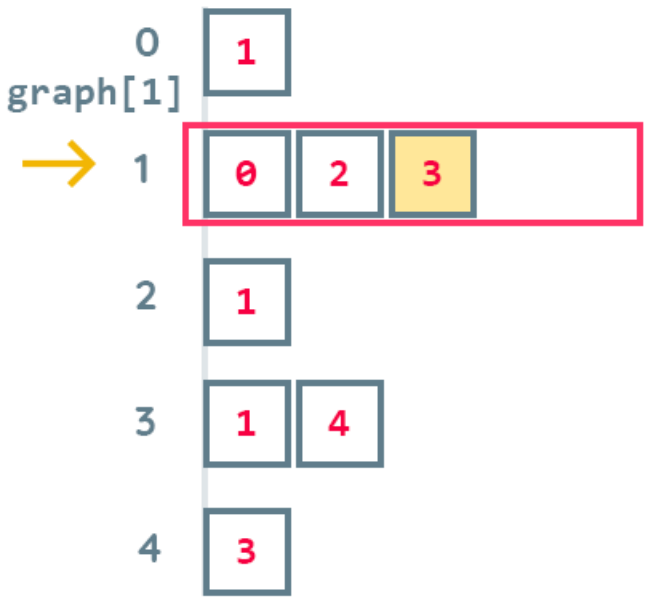
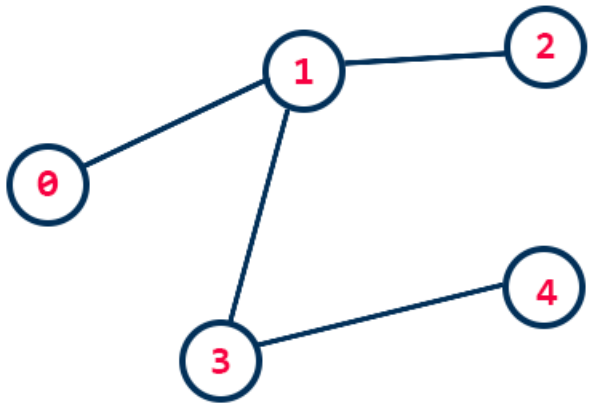


nodes: 0 1 2 3 4

source: 1

```
dfs(source):
   visited[source] = 1
   for next in graph[source]:
      if not visited[next]:
         dfs(next)
```

DFS Simulation




```
bool visited[5];
```

1	1	1	0	0
0	1	2	3	4

```
// 1 means that index(node)
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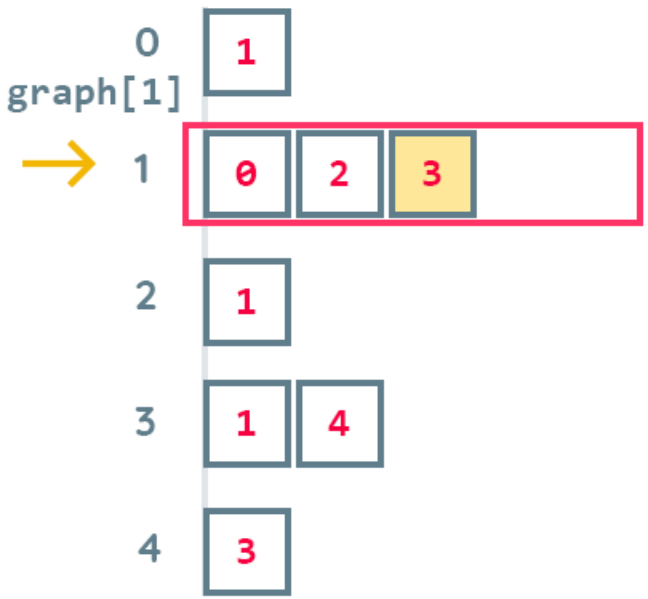
```



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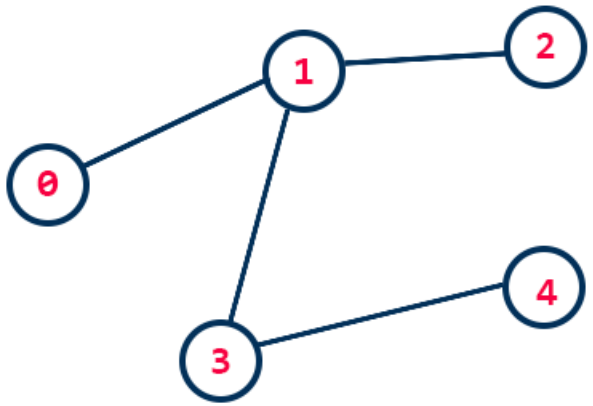
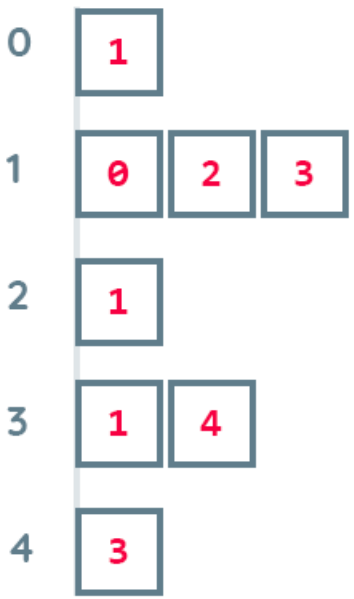
DFS Simulation






```
bool visited[5];
```

1	1	1	0	0
0	1	2	3	4

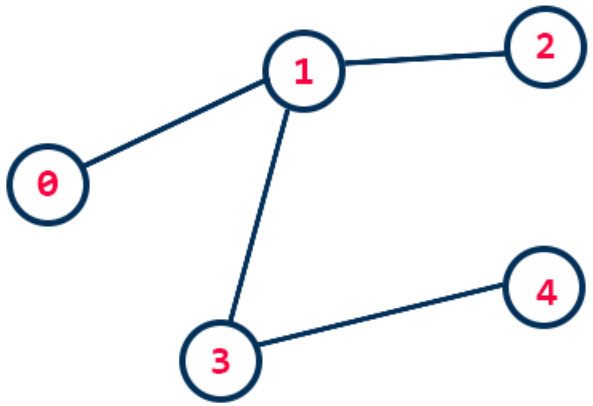
```
// 1 means that index(node)
// is visited
```

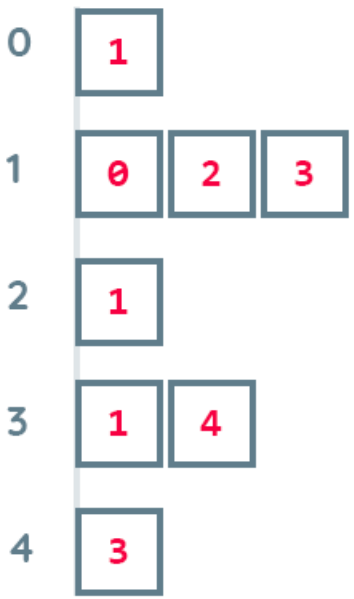
nodes: 0 1 2 3 4

source: 3

```
dfs(source):
   visited[source] = 1
   for next in graph[source]:
      if not visited[next]:
         dfs(next)
```

DFS Simulation



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nodes: 0 1 2 3 4

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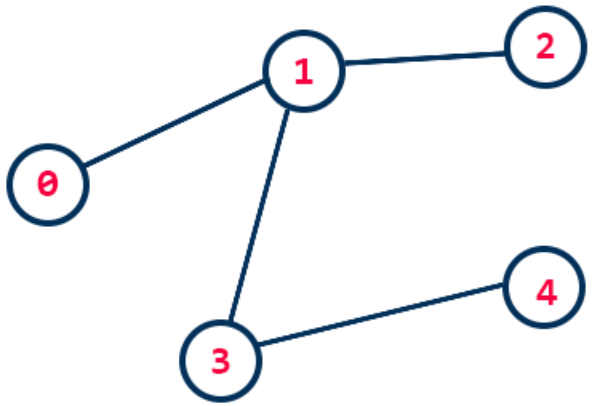
DFS Simulation

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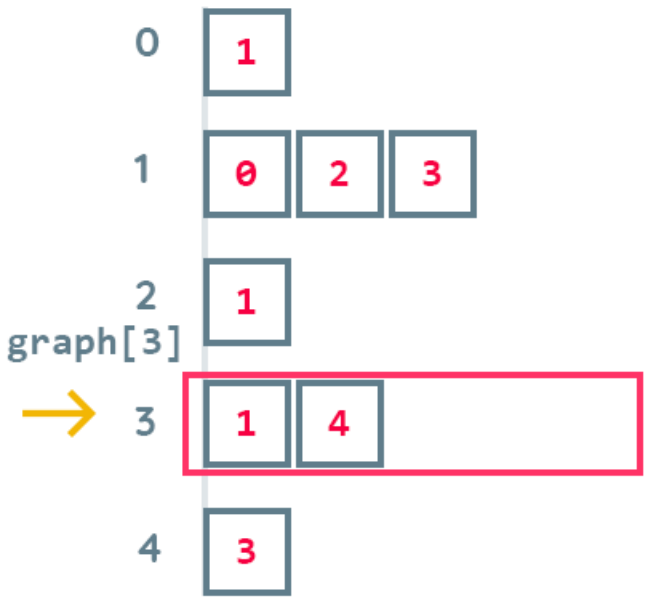

nodes: 0 1 2 3 4

source: 3

```
dfs(source):
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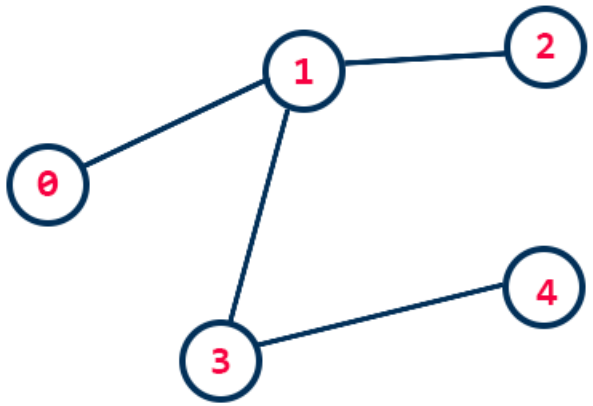
DFS Simulation

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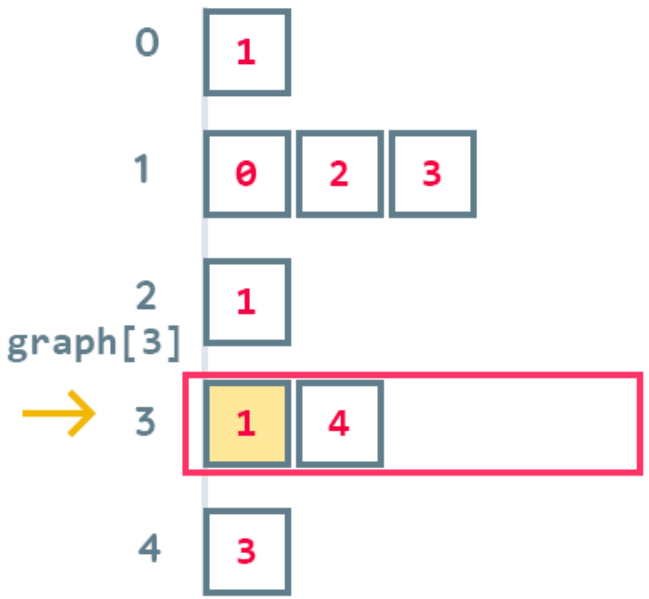

nodes: 0 1 2 3 4

source: 3

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   for next in graph[source]:
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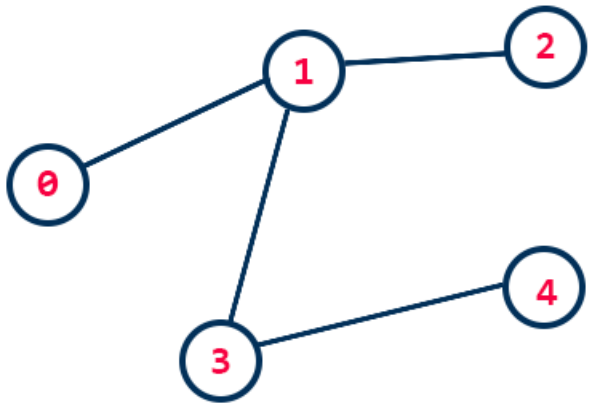
DFS Simulation

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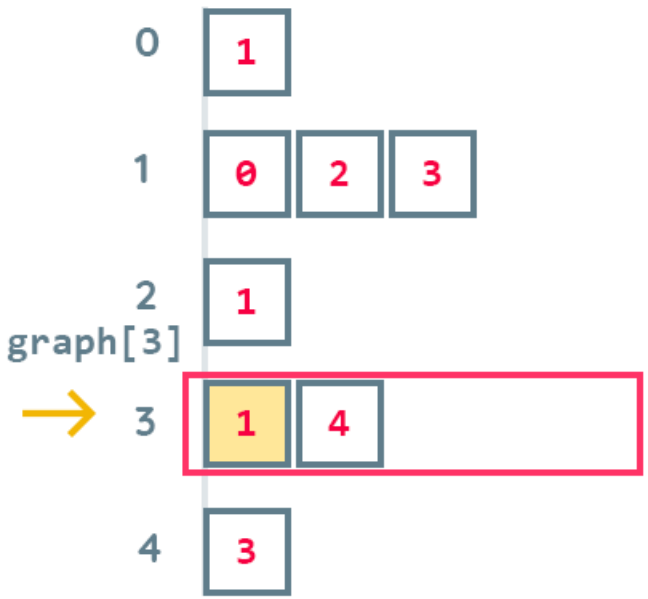

nodes: 0 1 2 3 4

source: 3

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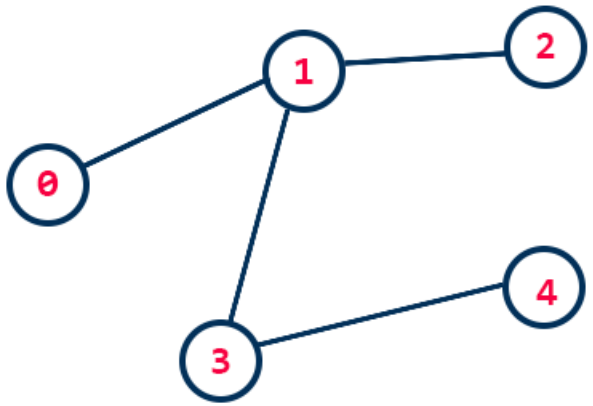
DFS Simulation

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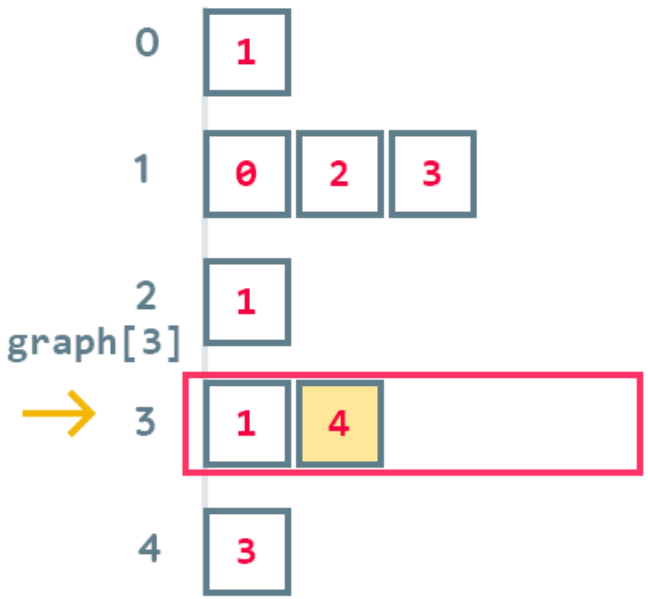

nodes: 0 1 2 3 4

source: 3

```
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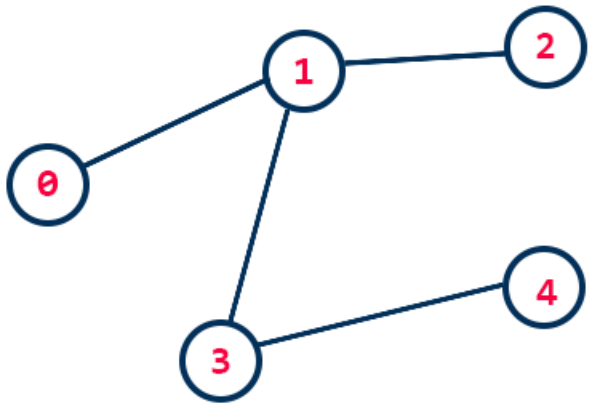
DFS Simulation

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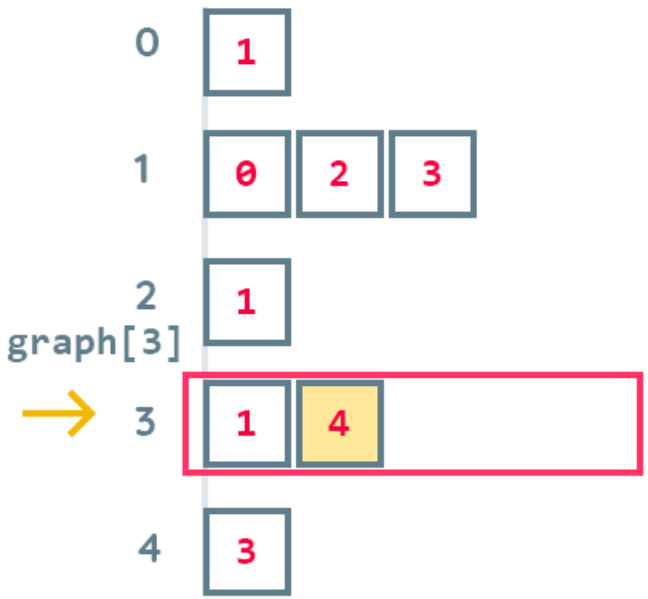

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source: 3

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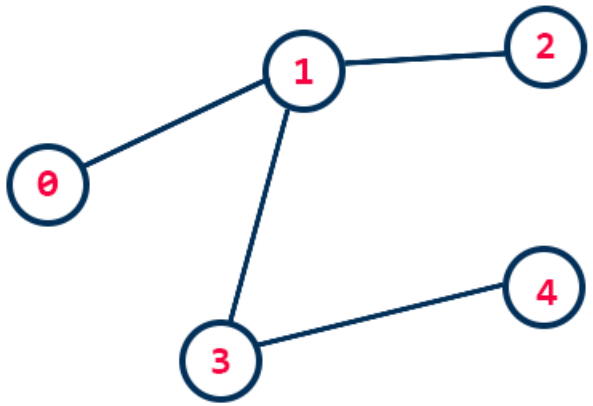
DFS Simulation

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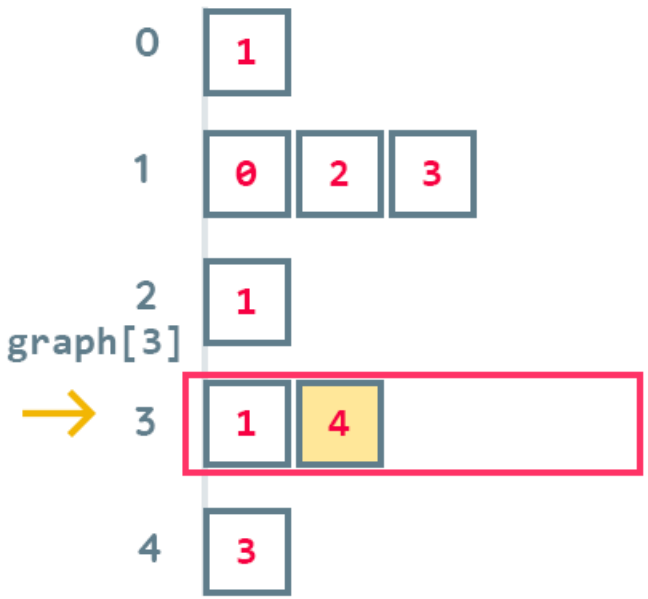

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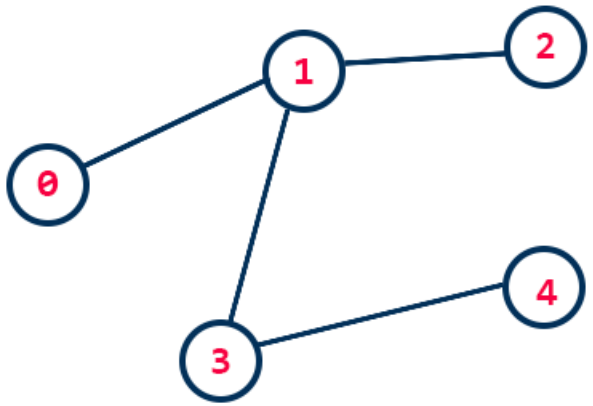
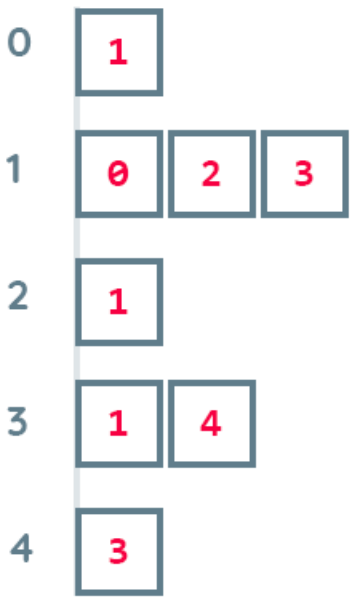
DFS Simulation






```
bool visited[5];
```

1	1	1	1	0
0	1	2	3	4

```
// 1 means that index(node)
// is visited
```

nodes: 0 1 2 3 4

source: 4

```
dfs(source):
   visited[source] = 1
   for next in graph[source]:
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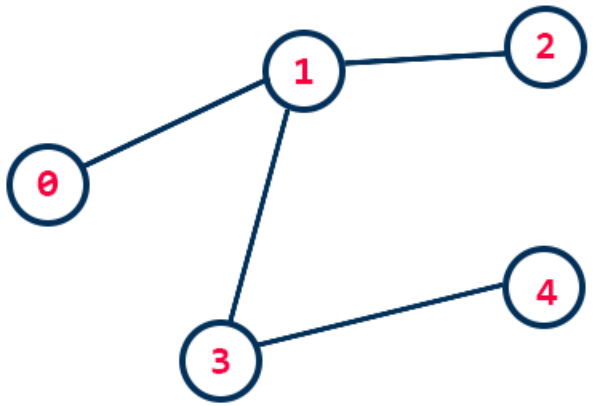
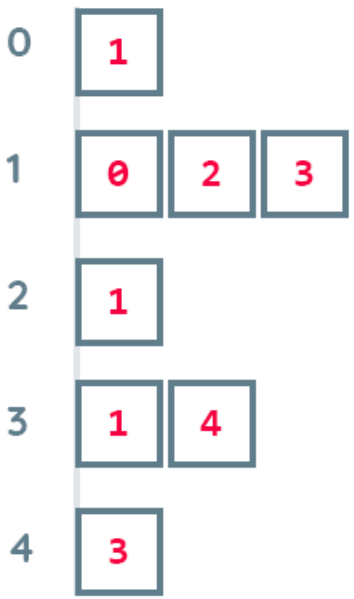
```

DFS Simulation



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nodes: **0** 1 2 3 4

source: 4

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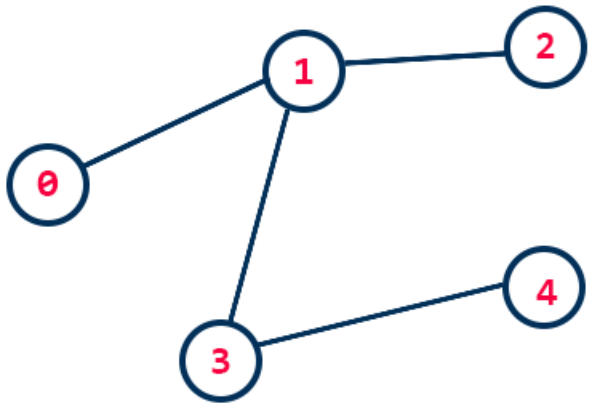
DFS Simulation

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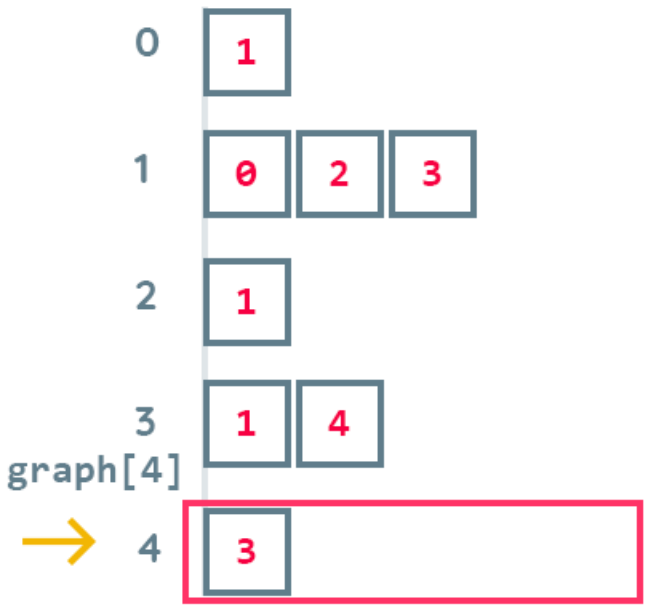

nodes: 0 1 2 3 4

source: 4

```
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   visited[source] = 1
   for next in graph[source]:
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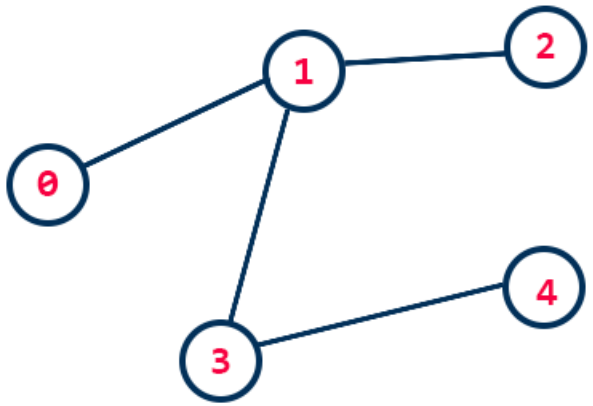
DFS Simulation

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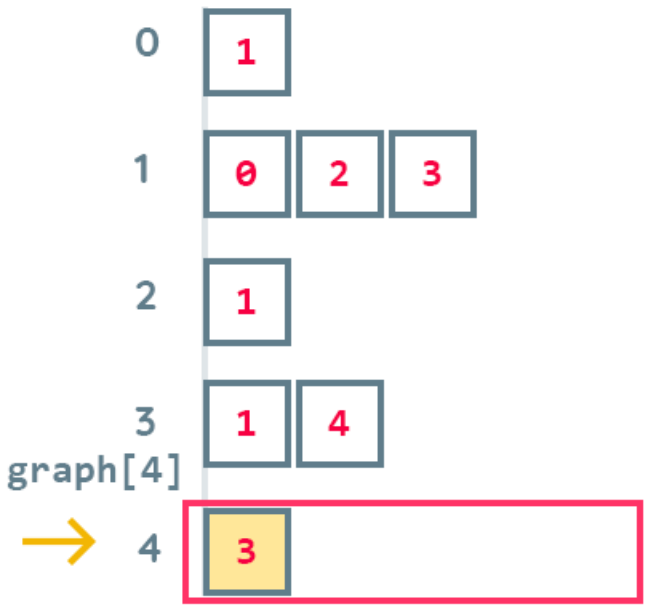

nodes: 0 1 2 3 4

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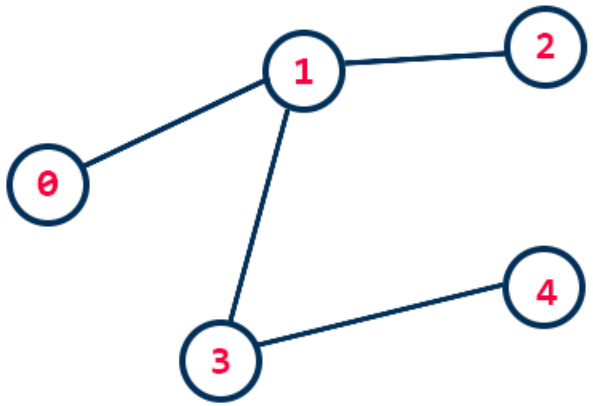
DFS Simulation

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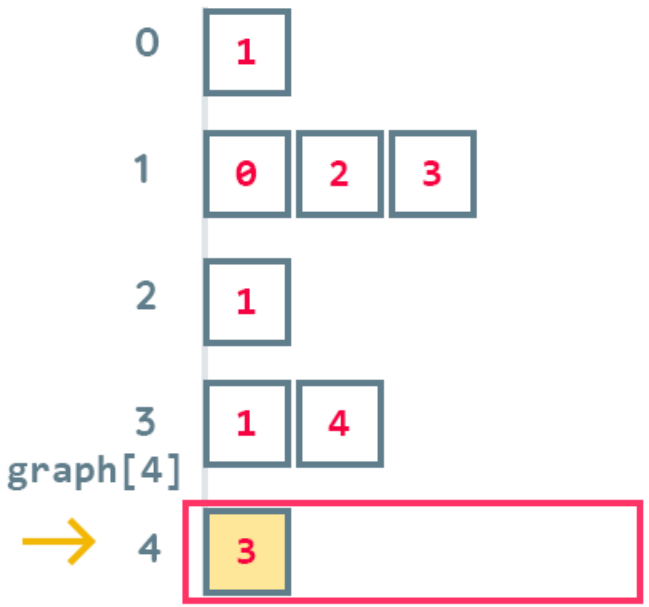

nodes: 0 1 2 3 4

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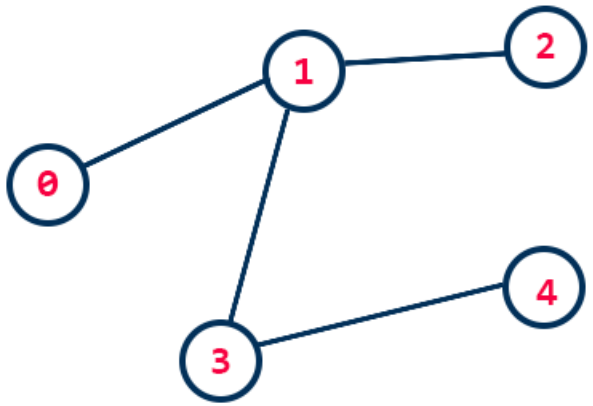
DFS Simulation

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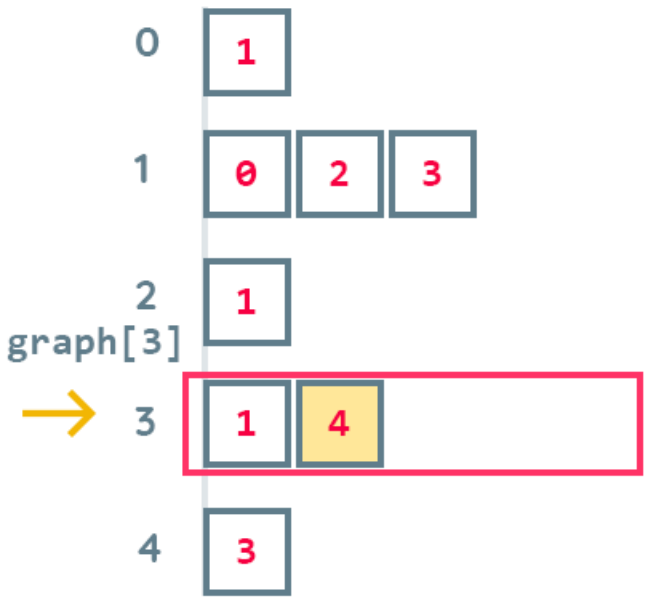

nodes: 0 1 2 3 4

source: 3

```
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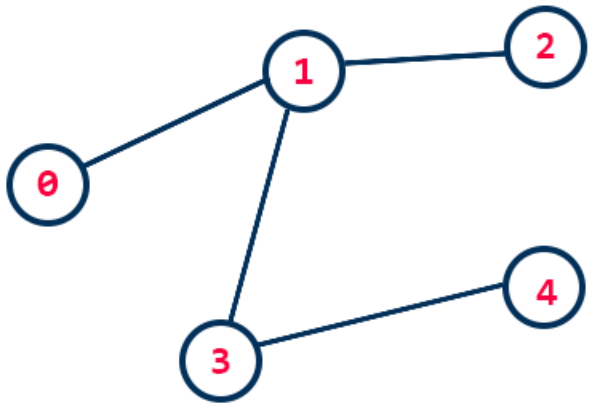
DFS Simulation

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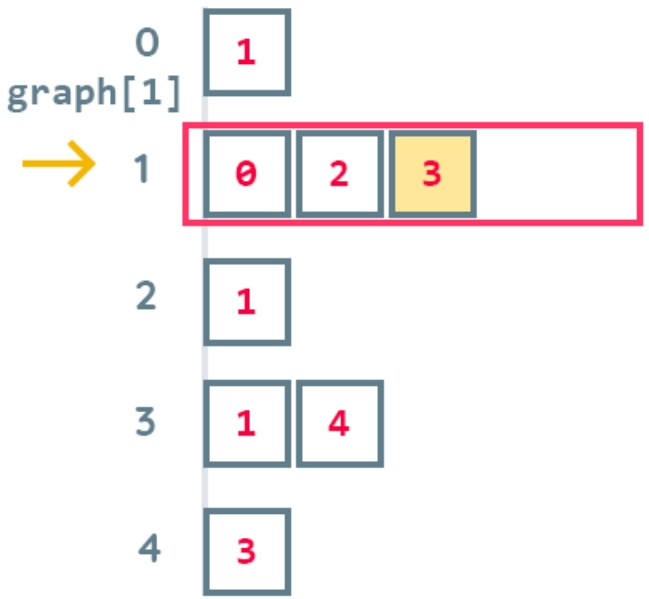

nodes: 0 1 2 3 4

source: 1

```
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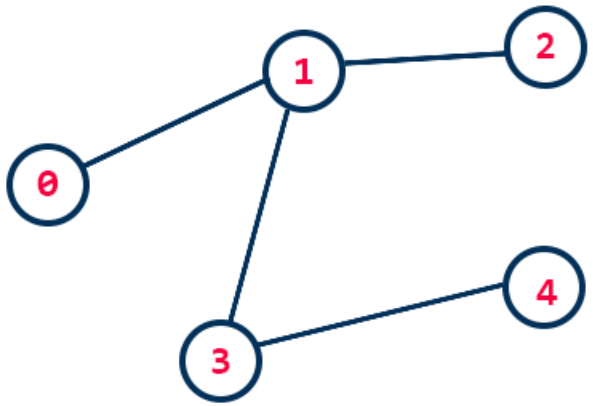
         dfs(next)
```

DFS Simulation



graph[0]

0	1
1	0 2 3
2	1
3	1 4
4	3

```
bool visited[5];
```

1	1	1	1	1
0	1	2	3	4

```
// 1 means that index(node)
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```

nodes: 0 1 2 3 4

source: 0

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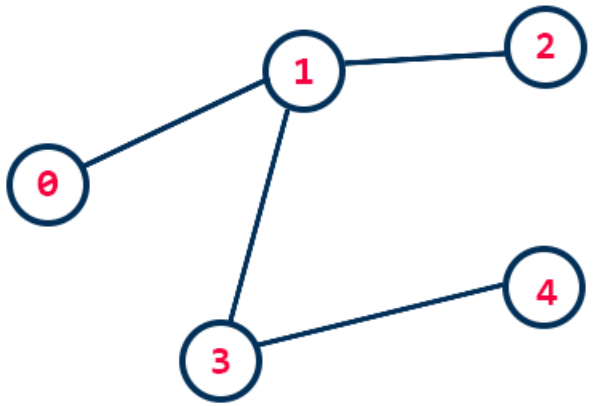
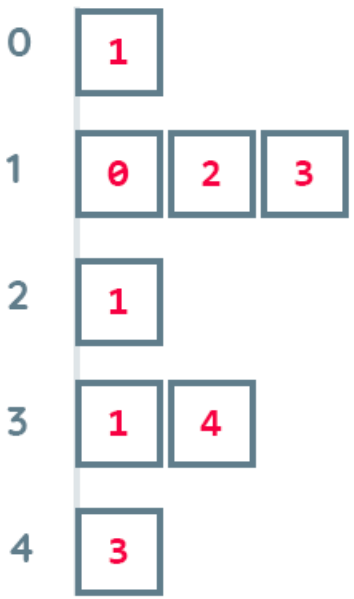
DFS Simulation



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```
nodes: 0  1  2  3  4

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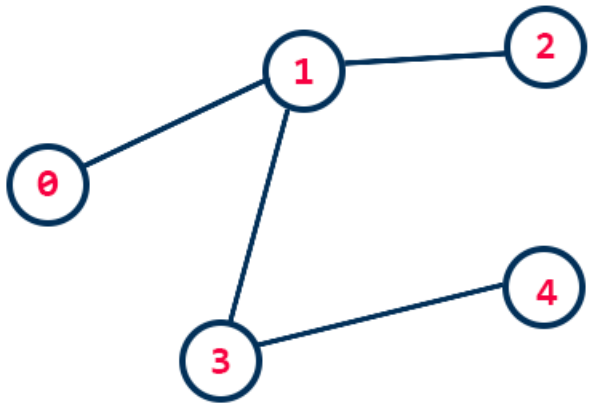
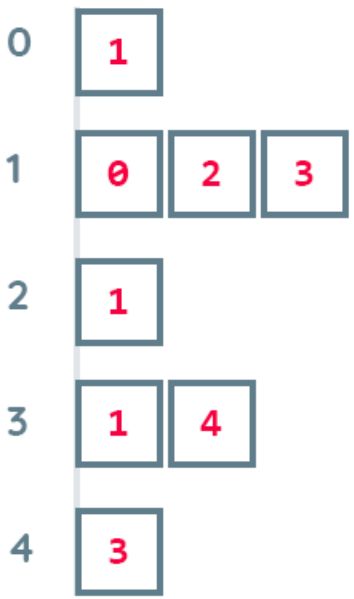
DFS Simulation



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bool visited[5];
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1	1	1	1	1
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// 1 means that index(node)
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nodes: 0 **1** 2 3 4

source: 0

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dfs(source):
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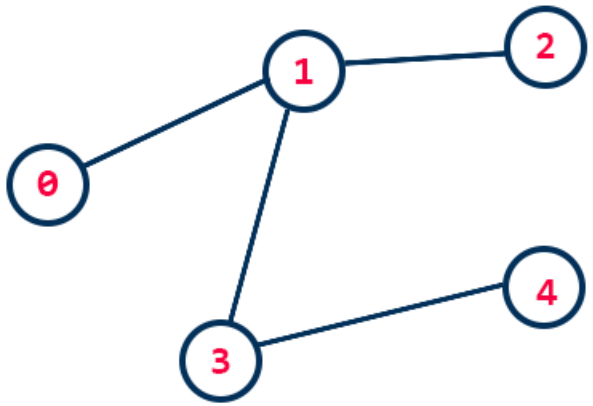

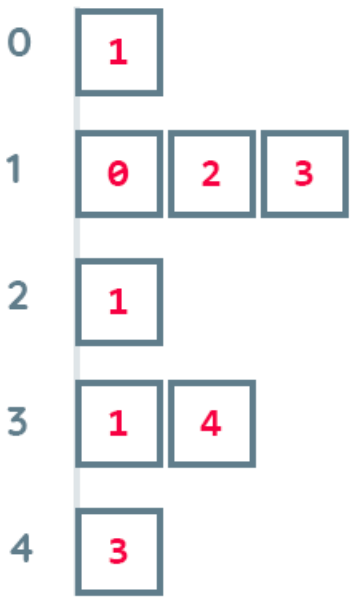


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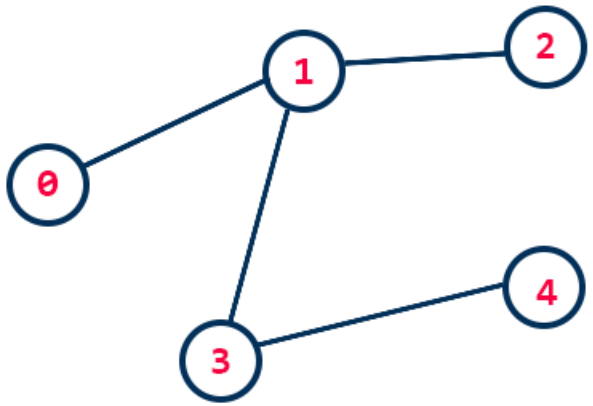

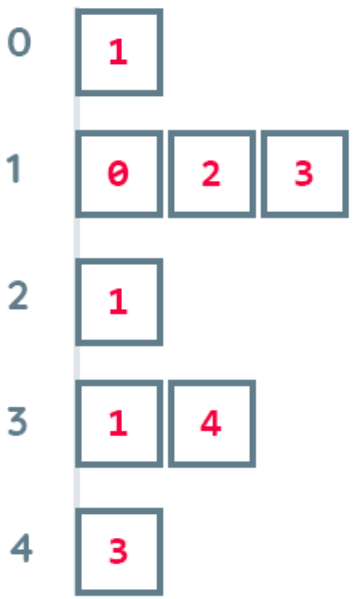


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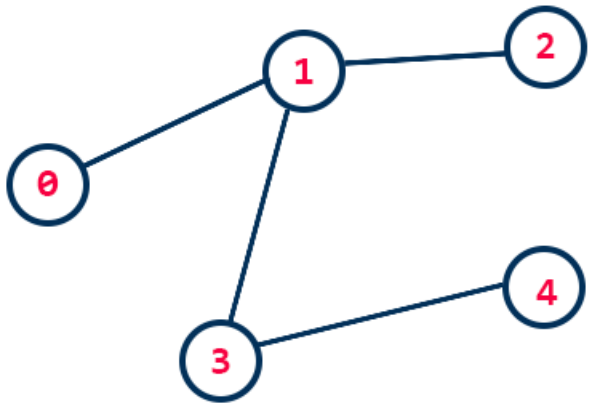

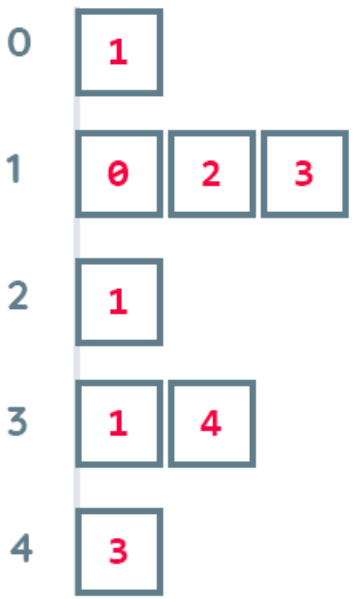


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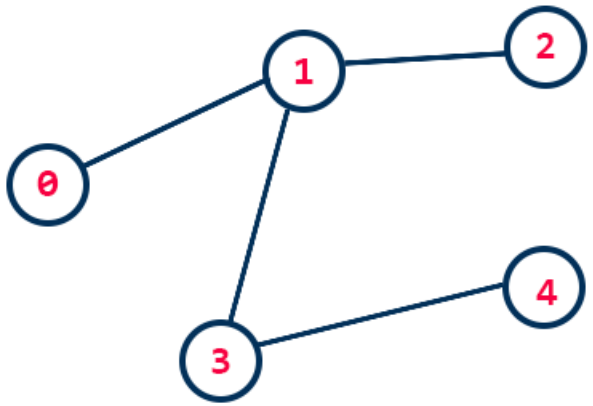


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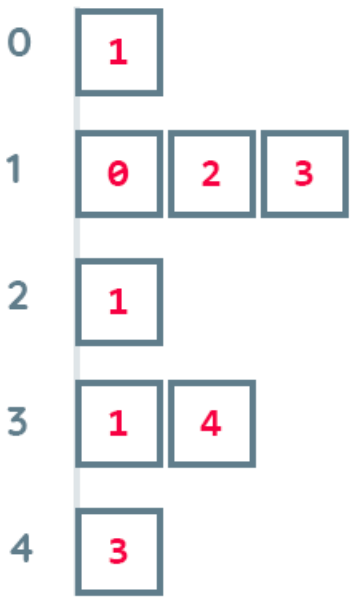

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