HW 1 #1

Look for

```
4
```

```
4
```

```
0 0 0 0 0
```

"universal sink"

```
5
```

While Q not empty,

\[ u = \text{dequeue}(Q) \]

look at each \( v \) with \( (u,v) \in E \)

where \( v \) unvisited

\[ \text{process}(u,v) \]

mark \( v \) visited

\[ \text{put} v \text{ on} Q \]

\[ v \text{.dist} = u \text{.dist} + 1 \]
BFS Time

Adj List: $O(n+m)$

Adj Matrix: $O(n^2)$

Use?

Shortest Paths (unweighted)

Bipartite Testing
Weighted graph?

\[ \sqrt{3} \]

\[ \begin{array}{c|c}
2 & 20000000 \\
\hline
\end{array} \]

\[ \begin{array}{c}
\text{DFS}\quad \text{start/finish}
\end{array} \]