## We want a path from $s$ to $t$ that is both short and has few edges (less than $k$ edges)

for each vertex $v$ and each integer $i \leq k, \operatorname{dist}(v, i)=$ the length of the shortest path from $s$ to $v$ that uses i edges


$$
\operatorname{dist}(v, i)=\min _{(u, v) \in E}\{\operatorname{dist}(u, i-1)+\ell(u, v)\}
$$

|  | 0 | 1 | 2 | 3 | 4 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| S | 0 | $\infty$ |  |  |  |
| A | $\infty$ | 1 |  |  |  |
| B | $\infty$ | $\infty$ |  |  |  |
| C | $\infty$ | 2 |  |  |  |
| D | $\infty$ | 5 |  |  |  |
| T | $\infty$ | $\infty$ |  |  |  |

