Floyd-Warshall Algorithm

The input to Floyd Warshall is a graph $G = (V, E)$ with non-negative weights on its edges, denoted by $w(v_i, v_j)$, where $(v_i, v_j) \in E$.

Floyd-Warshall computes subproblems **M[i,j,k]:**

- $M[i, j, k]$ is the length of the shortest path P from v_i to v_j such that $MAX(P) \leq k$.
- If $i = j$, we set $M[i, j, k] = 0$.
- If $i \neq j$ and there is no path between v_i and v_j satisfying $MAX(P) \leq k$, then we set $M[i, j, k] = \infty$.
- We let $k = 0, 1, 2, \ldots, n$, and $1 \leq i, j \leq n$.

Questions:

- What does $M[1, 2, 0]$ mean?
- What does $M[1, 2, 2]$ mean?
- What does $M[1, 2, 3]$ mean?
- What does $M[1, 2, 5]$ mean?