

Floyd-Warshall Algorithm

Remember $M[i, j, k]$ is the length of the shortest path P from v_i to v_j such that $MAX(P) \leq k$.

Suppose we were able to compute (correctly) all $M[i, j, k]$, for $1 \leq i, j \leq n$ and $0 \leq k \leq n$.

- ▶ Question: How could we compute the length of the shortest path from v_i to v_j ?
- ▶ Answer: it is the same as $M[i, j, n]$.

So once we have computed all entries in the 3-dimensional matrix M , we return the 2-dimensional matrix obtained by setting $k = n$.