

Figure 6-18. Floyd-Warshall fact sheet

For values of k>0, we assume when computing  $dist_k$  that we have already computed dist<sub>k-1</sub> (in dynamic programming, one must solve the subproblems in an appropriate order).

FLOYD-WARSHALL proceeds by incrementing k from 0 to n until  $dist_n[][]$  is computed. When computing  $dist_k[i][j]$ , we need to know whether a shortest path from  $v_i$  to  $v_j$  (which may only pass through vertices  $v_1, v_2, ..., v_k$  in addition to  $v_i$ and  $v_i$ ) passes through vertex  $v_k$ :

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