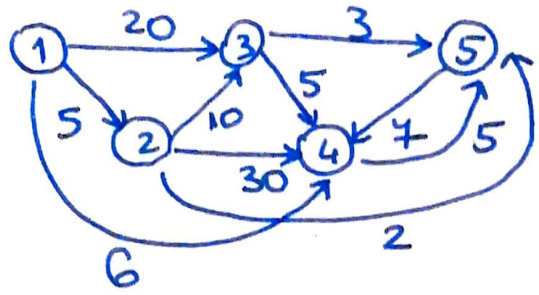
Graph: 5 vertices and 10 edges



D_i = cost matrices, P_i = previous matrices

k=1 : using vertex 1 as an intermediate vertex

$$D_1 = \begin{pmatrix} 0 & 5 & 20 & 6 & \infty \\ \infty & 0 & 10 & 30 & 2 \\ \infty & \infty & 0 & 5 & 3 \\ \infty & \infty & \infty & 0 & 5 \\ \infty & \infty & \infty & 7 & 0 \end{pmatrix} \quad P_1 = \begin{pmatrix} 0 & 1 & 1 & 1 & 0 \\ 0 & 0 & 2 & 2 & 2 \\ 0 & 0 & 0 & 3 & 3 \\ 0 & 0 & 0 & 0 & 4 \\ 0 & 0 & 0 & 5 & 0 \end{pmatrix}$$

k=2 : using vertex 2 as an intermediate vertex

$$D_2 = \begin{pmatrix} 0 & 5 & \boxed{15} & 6 & \boxed{7} \\ \infty & 0 & 10 & 30 & 2 \\ \infty & \infty & 0 & 5 & 3 \\ \infty & \infty & \infty & 0 & 5 \\ \infty & \infty & \infty & 7 & 0 \end{pmatrix} \quad P_2 = \begin{pmatrix} 0 & 1 & \boxed{2} & 1 & \boxed{2} \\ 0 & 0 & 2 & 2 & 2 \\ 0 & 0 & 0 & 3 & 3 \\ 0 & 0 & 0 & 0 & 4 \\ 0 & 0 & 0 & 5 & 0 \end{pmatrix}$$

k=3 : using vertex 3 as an intermediate vertex

$$D_3 = \begin{pmatrix} 0 & 5 & 15 & 6 & 7 \\ \infty & 0 & 10 & \boxed{15} & 2 \\ \infty & \infty & 0 & 5 & 3 \\ \infty & \infty & \infty & 0 & 5 \\ \infty & \infty & \infty & 7 & 0 \end{pmatrix} \quad P_3 = \begin{pmatrix} 0 & 1 & 2 & 1 & 2 \\ 0 & 0 & 2 & \boxed{3} & 2 \\ 0 & 0 & 0 & 3 & 3 \\ 0 & 0 & 0 & 0 & 4 \\ 0 & 0 & 0 & 5 & 0 \end{pmatrix}$$

k=4 : using vertex 4 as an intermediate vertex

$$D_4 = \begin{pmatrix} 0 & 5 & 15 & 6 & 7 \\ \infty & 0 & 10 & 15 & 2 \\ \infty & \infty & 0 & 5 & 3 \\ \infty & \infty & \infty & 0 & 5 \\ \infty & \infty & \infty & 7 & 0 \end{pmatrix} \quad P_4 = \begin{pmatrix} 0 & 1 & 2 & 1 & 2 \\ 0 & 0 & 2 & 3 & 2 \\ 0 & 0 & 0 & 3 & 3 \\ 0 & 0 & 0 & 0 & 4 \\ 0 & 0 & 0 & 5 & 0 \end{pmatrix}$$

k=5 : using vertex 5 as an intermediate vertex

$$D_5 = \begin{pmatrix} 0 & 5 & 15 & 6 & 7 \\ \infty & 0 & 10 & 5 & 2 \\ \infty & \infty & 0 & 5 & 3 \\ \infty & \infty & \infty & 0 & 5 \\ \infty & \infty & \infty & 7 & 0 \end{pmatrix} \quad P_5 = \begin{pmatrix} 0 & 1 & 2 & 1 & 2 \\ 0 & 0 & 2 & 3 & 2 \\ 0 & 0 & 0 & 3 & 3 \\ 0 & 0 & 0 & 0 & 4 \\ 0 & 0 & 0 & 5 & 0 \end{pmatrix}$$

$|V| = 5$

$\Rightarrow$ stop

The minimum cost walk from $s=1$ to $t=5$ has the cost $D_5(1,5)=4$ and it is obtained from P_5 backwards, using line $1=s$:

$t=\underline{5}$, $P_5(1,5)=\underline{2}$, $P_5(1,2)=\underline{1}=s$

The minimum cost walk: $1 \xrightarrow{5} 2 \xrightarrow{3} 5$