$dp(u, v, K) =$

$$\underbrace{u \to \cdots \to \cdots \to \cdots \to \overbrace{x \to \cdots \to v}}_{\leq K \text{ edges}}$$

$\leq K-1$ edges

weight $= w(x, v)$

min possible value:
shortest path from u to x
using $\leq K-1$ edges: $DP(u, x, K-1)$

tot weight $= dp(u, x, K-1) + w(x, v)$

$$u \rightarrow \cdots \rightarrow \cdots \rightarrow \cdots \rightarrow v$$

$$\in \{ v_1, \ldots, v_{m-1}, \boxed{v_m} \}$$

$$u \rightarrow \cdots \rightarrow v_m \rightarrow \cdots \rightarrow v$$

shortest path from

u to v_m with middle

vertices $\in \{ v_1, \ldots, v_{m-1} \}$

weight $= dp(u, v_m, m-1)$