**Floyd-Warshall algorithm**

input: $\mathbb{R}$-weighted graph $G = (V, E, \lambda)$ without negative weighted cycles

output: shortest-path weights $D = (d_{u,v} \mid 1 \leq u, v \leq |V|)$

var: $\Delta^{(0)} = (\delta^{(0)}_{u,v} \mid 1 \leq u, v \leq |V|), \ldots, \Delta^{(|V|)} = (\delta^{(|V|)}_{u,v} \mid 1 \leq u, v \leq |V|)$: $|V| \times |V|$-matrices;

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1 begin
2     Δ^(0) := W_G;
3     for l:=1 to |V| do
4         for u:=1 to |V| do
5             for v:=1 to |V| do δ^(l)_{u,v} := min(δ^(l-1)_{u,v}, δ^(l-1)_{u,l} + δ^(l-1)_{l,v});
6     D := Δ^(|V|)
7 end
```

where $W_G = (w_{u,v} \mid 1 \leq u, v \leq |V|)$ with $w_{u,v} = \begin{cases} 0 & \text{if } u = v \\ \infty & \text{if } u \neq v, (u,v) \notin E \\ \lambda(u,v) & \text{if } u \neq v, (u,v) \in E. \end{cases}$