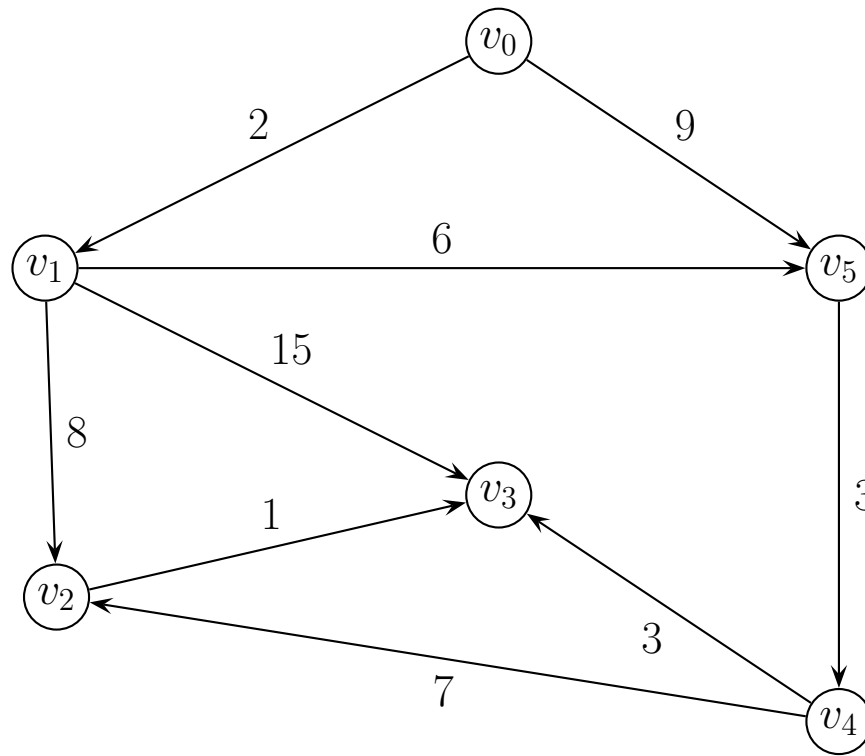


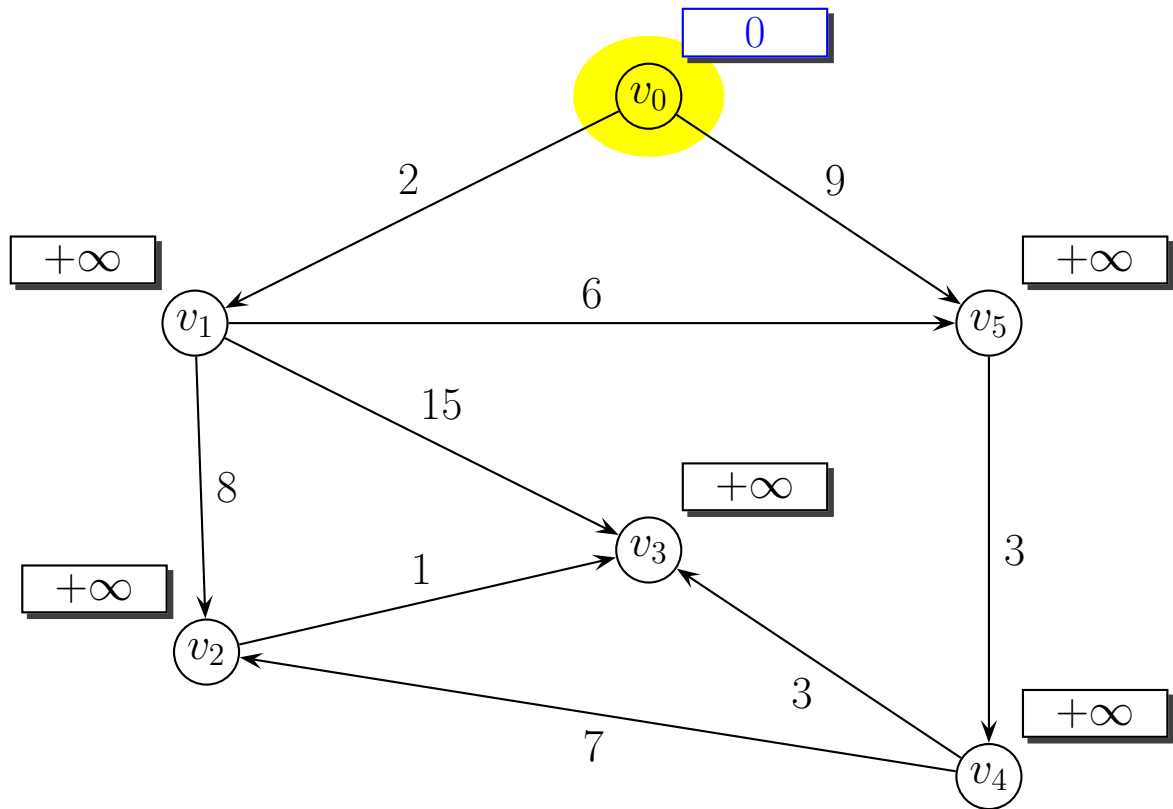
# Dijkstra's Shortest Path Algorithm

## An Example From Main

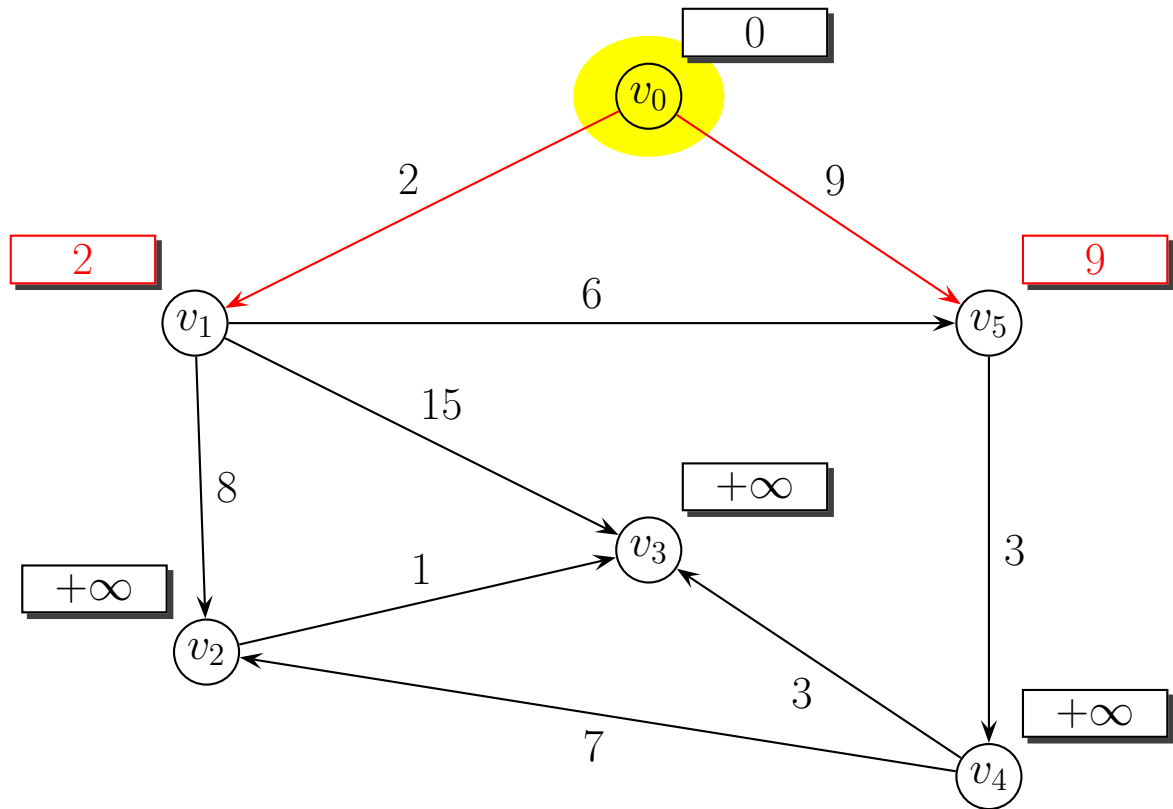
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`ryan@cs.fit.edu`

December 6, 2001

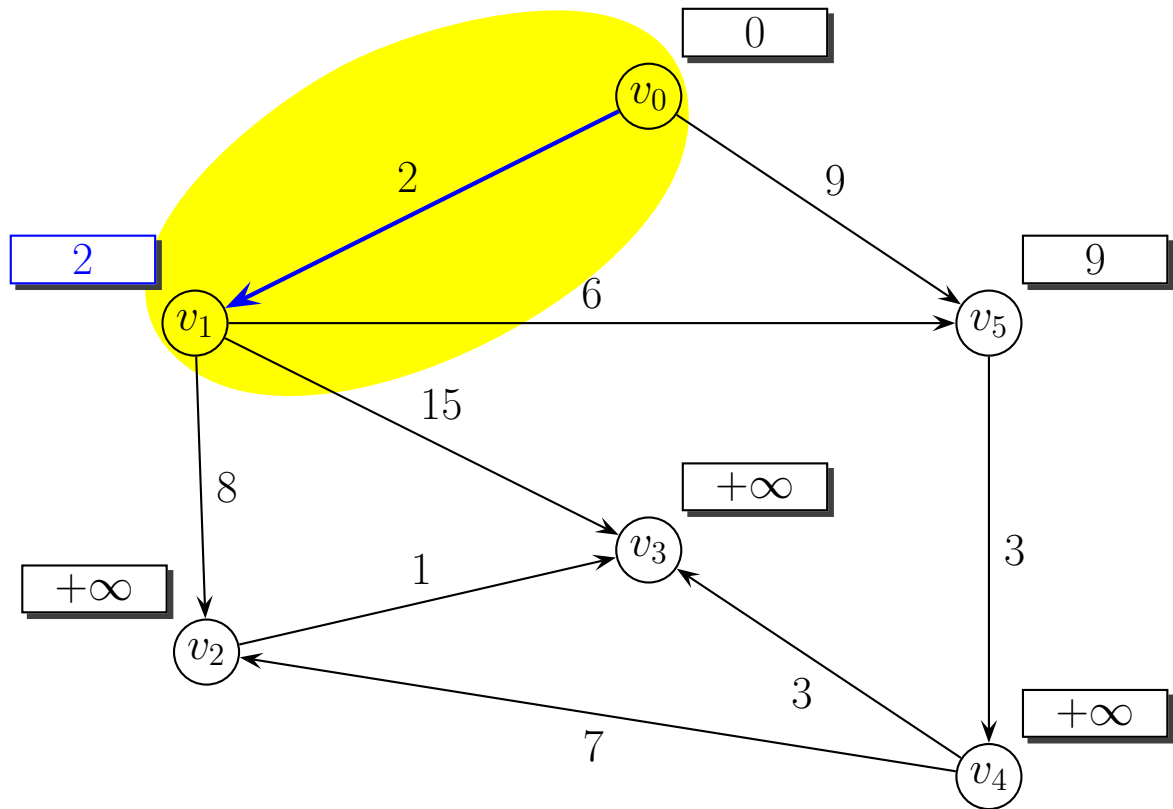




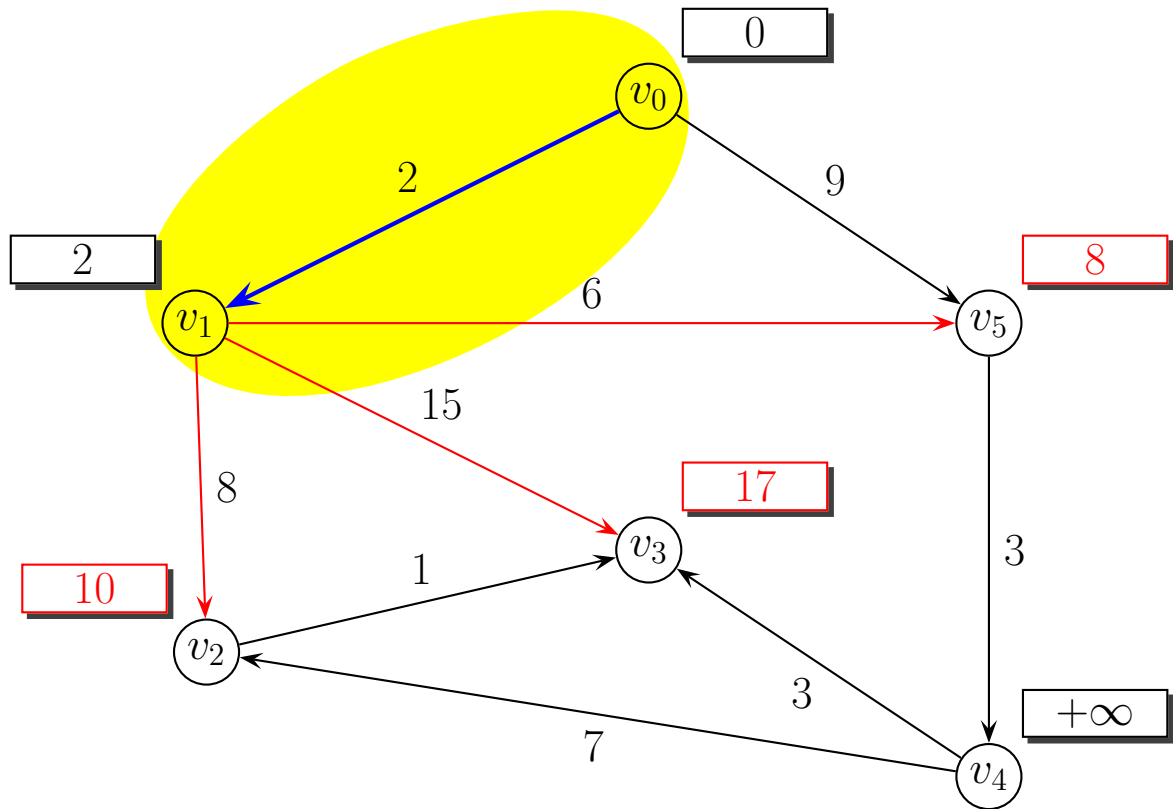
	$v_0$	$v_1$	$v_2$	$v_3$	$v_4$	$v_5$
dist	0	$+\infty$	$+\infty$	$+\infty$	$+\infty$	$+\infty$
pred	—	?	?	?	?	?



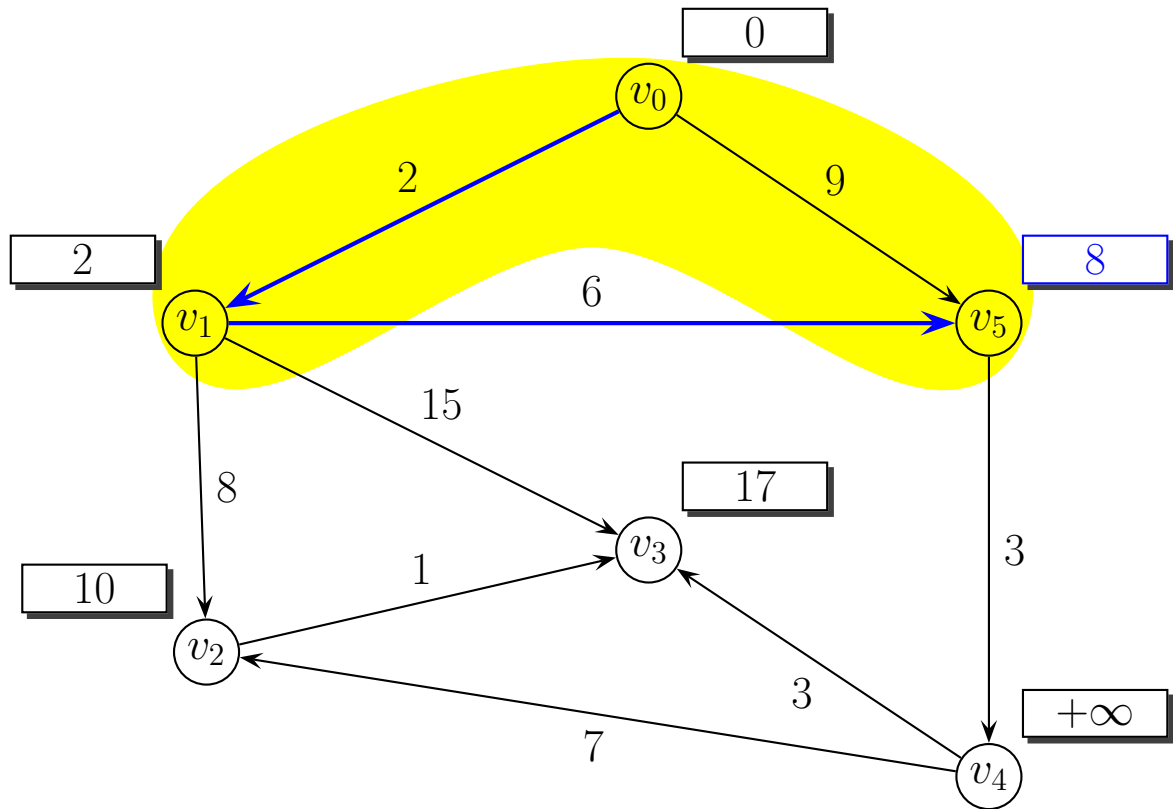
	$v_0$	$v_1$	$v_2$	$v_3$	$v_4$	$v_5$
dist	0	2	$+\infty$	$+\infty$	$+\infty$	9
pred	—	$v_0$	?	?	?	$v_0$



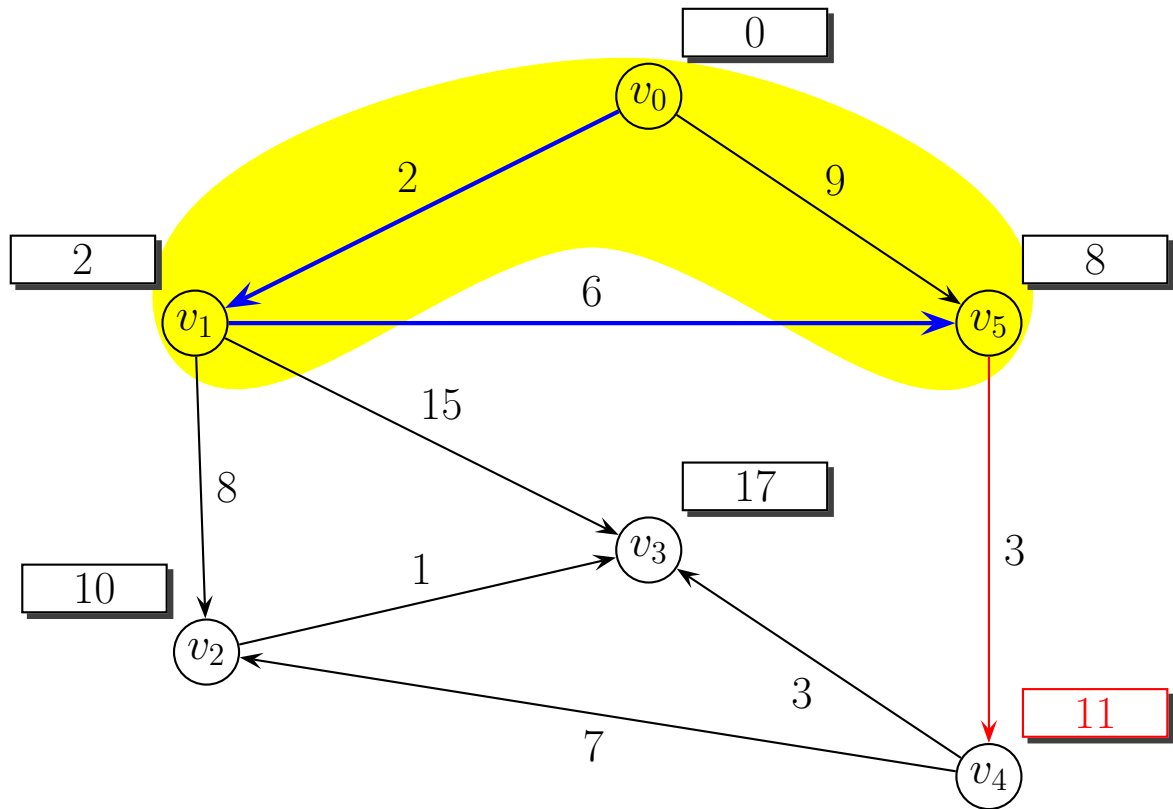
	$v_0$	$v_1$	$v_2$	$v_3$	$v_4$	$v_5$
dist	0	2	$+\infty$	$+\infty$	$+\infty$	9
pred	—	$v_0$	?	?	?	$v_0$



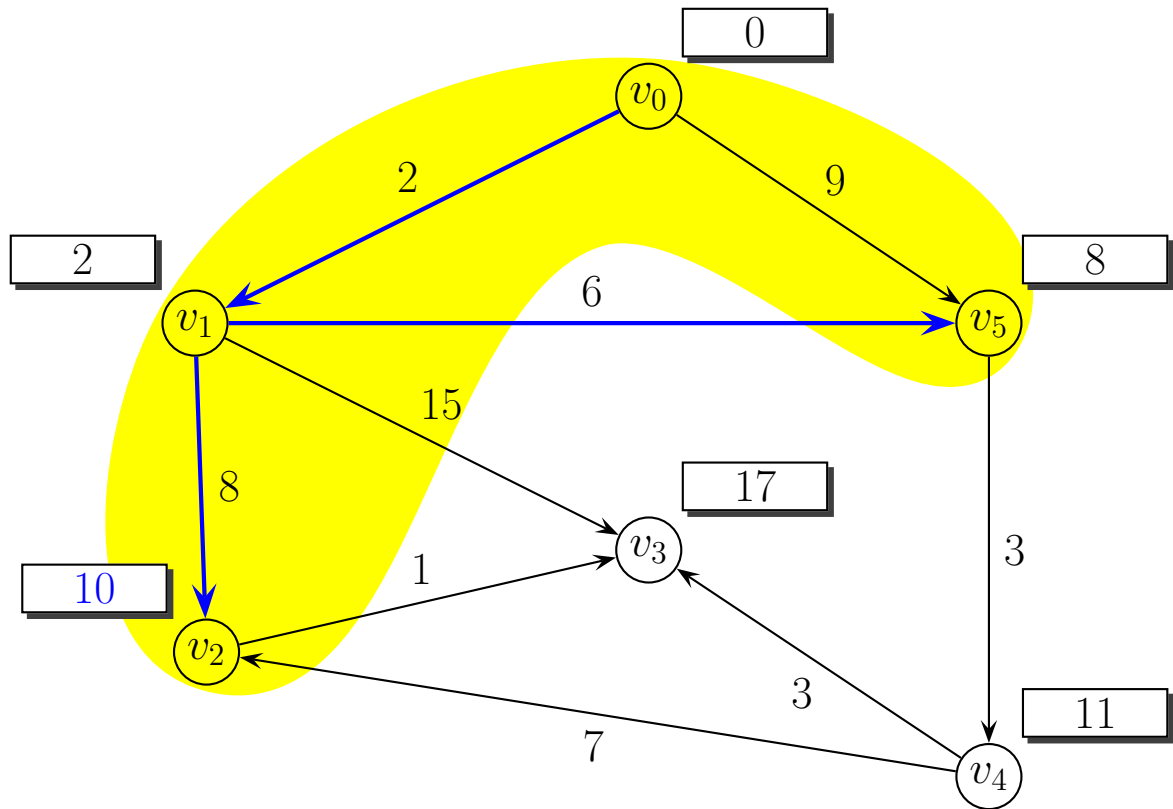
	$v_0$	$v_1$	$v_2$	$v_3$	$v_4$	$v_5$
dist	0	2	10	17	$+\infty$	8
pred	—	$v_0$	$v_1$	$v_1$	?	$v_1$



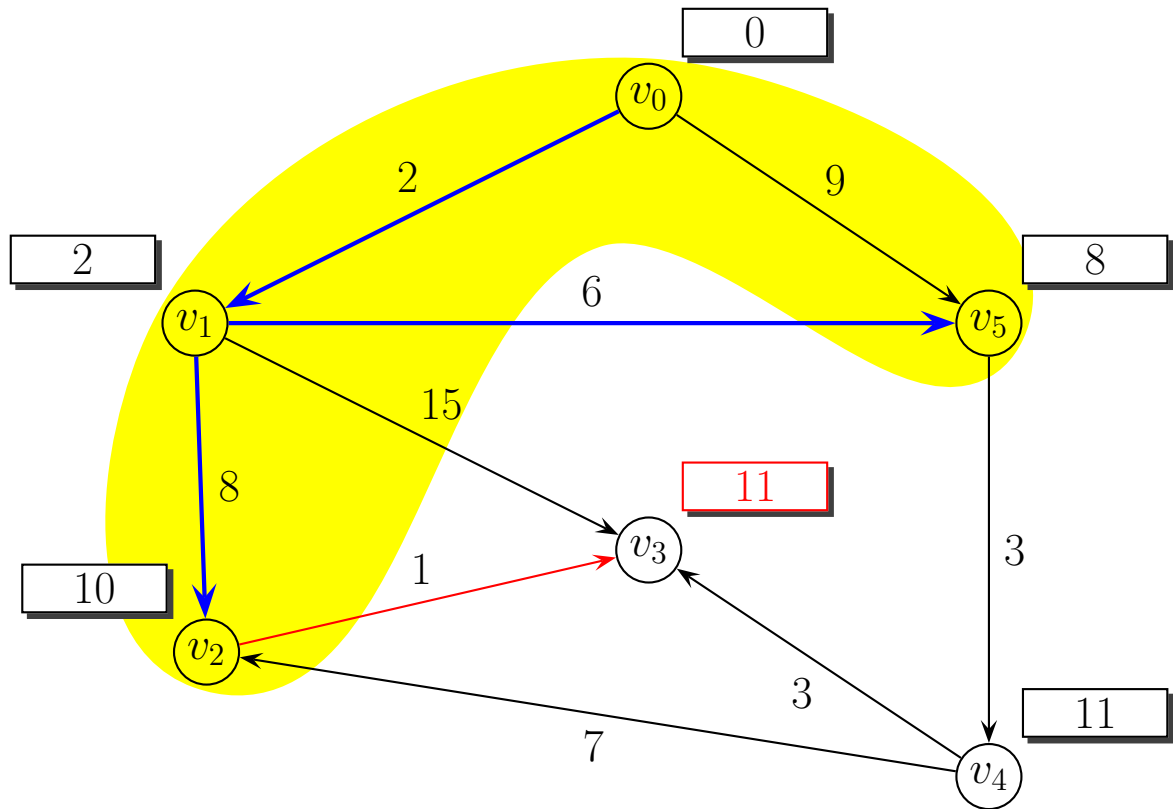
	$v_0$	$v_1$	$v_2$	$v_3$	$v_4$	$v_5$
dist	0	2	10	17	$+\infty$	8
pred	—	$v_0$	$v_1$	$v_1$	?	$v_1$



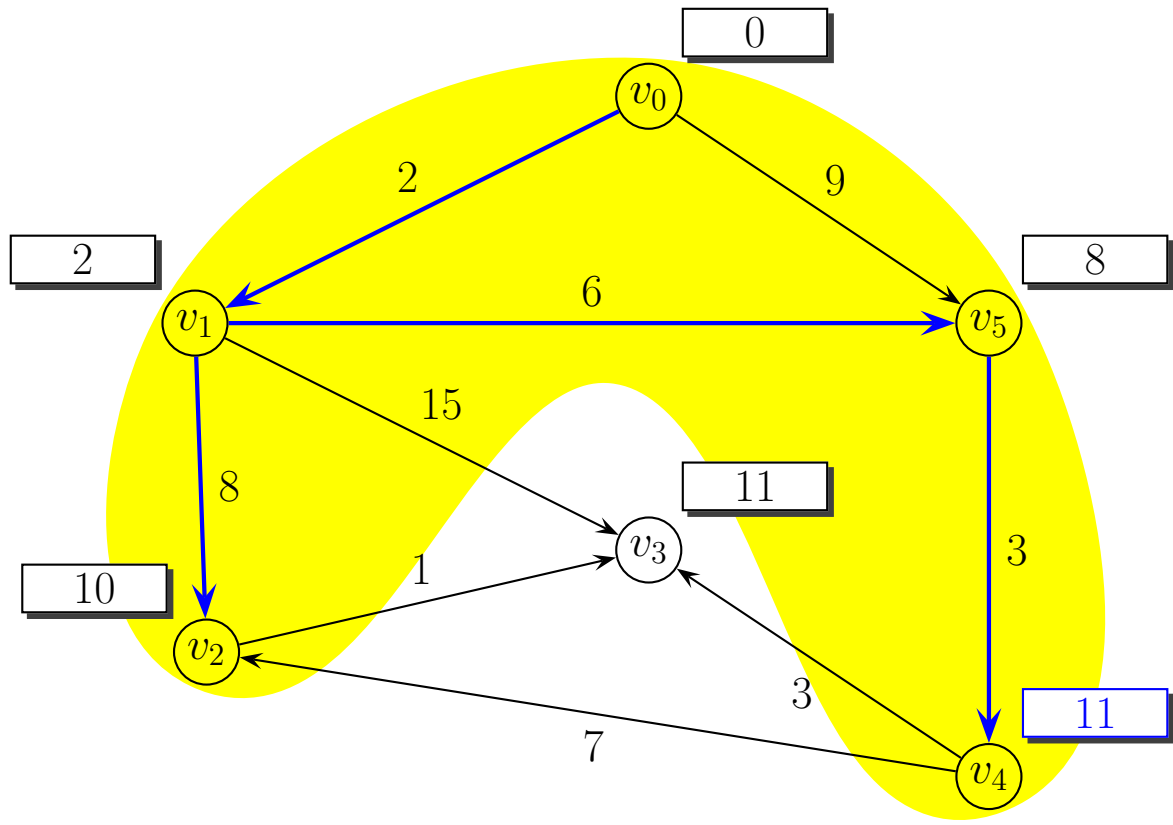
	$v_0$	$v_1$	$v_2$	$v_3$	$v_4$	$v_5$
dist	0	2	10	17	11	8
pred	—	$v_0$	$v_1$	$v_1$	$v_5$	$v_1$



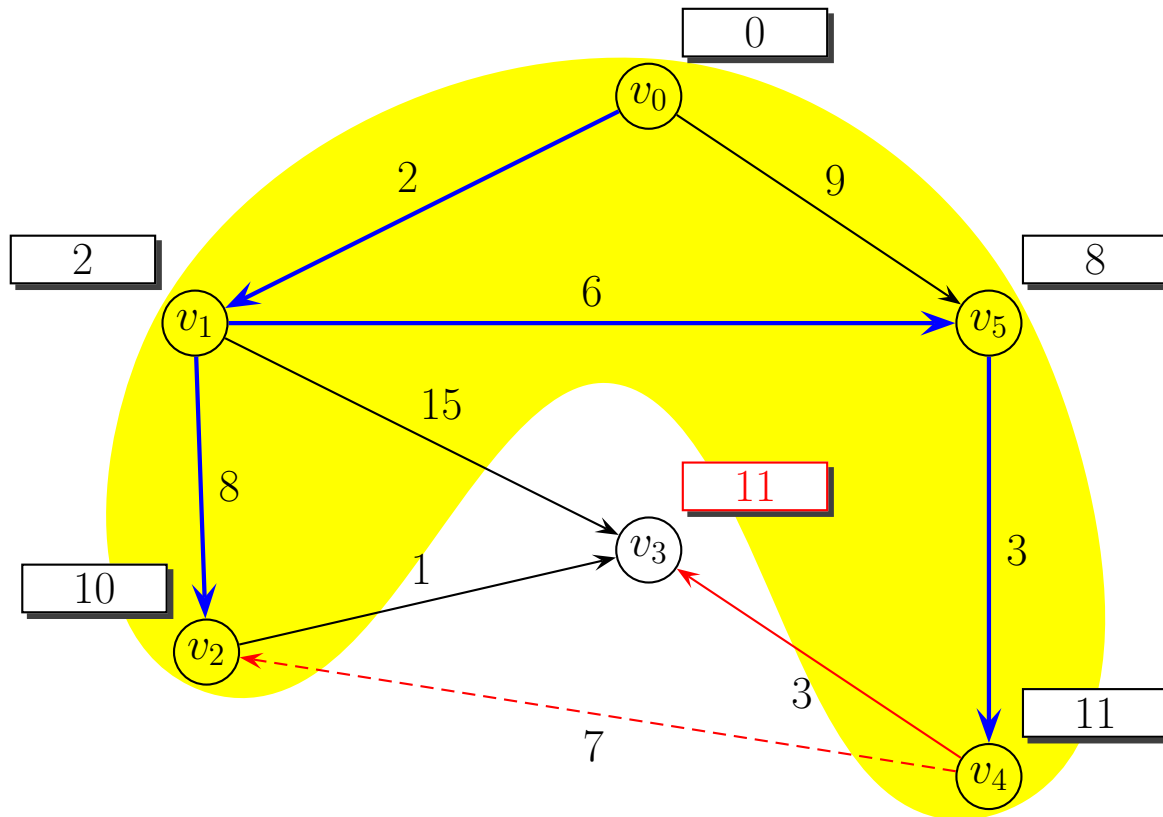
	$v_0$	$v_1$	$v_2$	$v_3$	$v_4$	$v_5$
dist	0	2	10	17	11	8
pred	—	$v_0$	$v_1$	$v_1$	$v_5$	$v_1$



	$v_0$	$v_1$	$v_2$	$v_3$	$v_4$	$v_5$
dist	0	2	10	11	11	8
pred	—	$v_0$	$v_1$	$v_2$	$v_5$	$v_1$



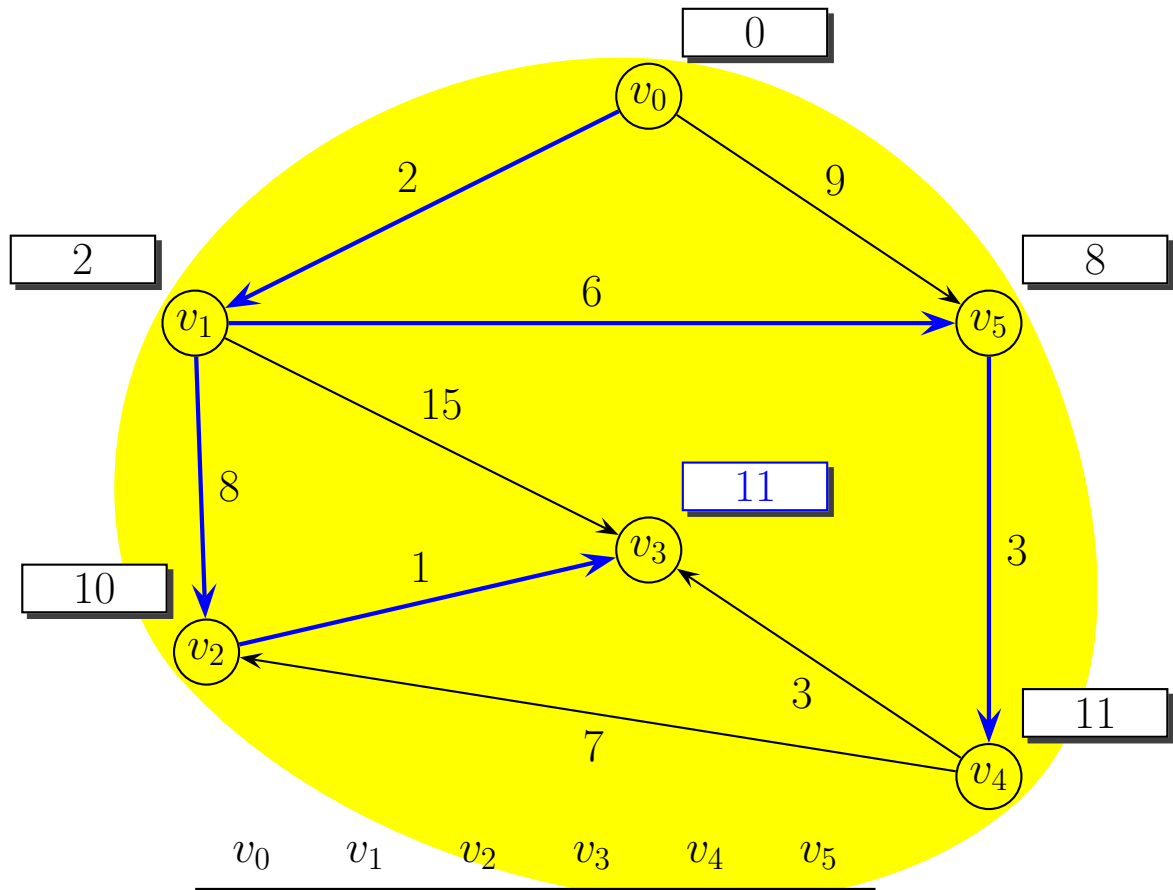
	$v_0$	$v_1$	$v_2$	$v_3$	$v_4$	$v_5$
dist	0	2	10	11	11	8
pred	—	$v_0$	$v_1$	$v_2$	$v_5$	$v_1$



	$v_0$	$v_1$	$v_2$	$v_3$	$v_4$	$v_5$
dist	0	2	10	11	11	8
pred	—	$v_0$	$v_1$	$v_2$	$v_5$	$v_1$

Distance to  $v_3$  is checked, but  $11 + 3$  is not smaller than the existing distance (11) to  $v_3$ , so dist and pred are not changed.

The edge to  $v_2$  is ignored as the shortest path to it has already been found.



	$v_0$	$v_1$	$v_2$	$v_3$	$v_4$	$v_5$
dist	0	2	10	11	11	8
pred	—	$v_0$	$v_1$	$v_2$	$v_5$	$v_1$