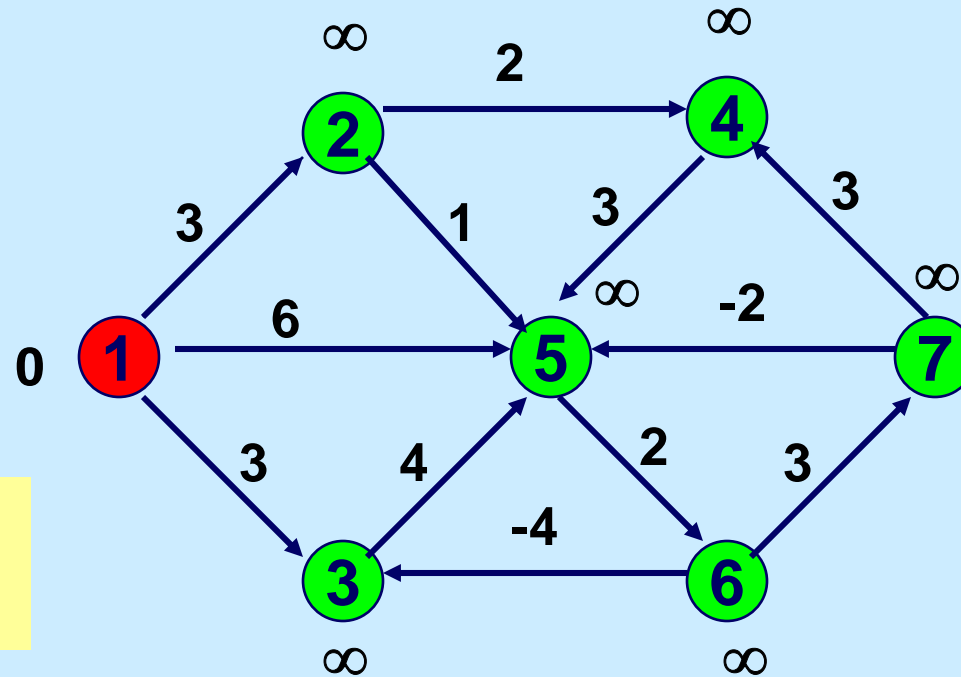

15.082 and 6.855J

Label Correcting Algorithm

An Example



Initialize

$d(1) := 0;$

$d(j) := \infty$ for $j \neq 1$

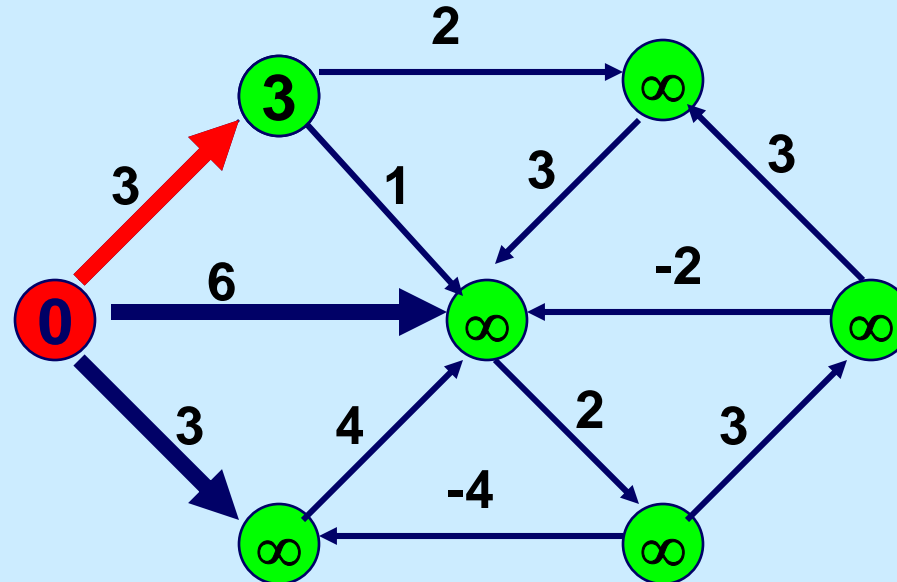
In next slides: the number inside the node will be $d(j)$.

Violating arcs will be in thick lines.

An Example

Generic Step

An arc (i,j) is **violating** if $d(j) > d(i) + c_{ij}$.

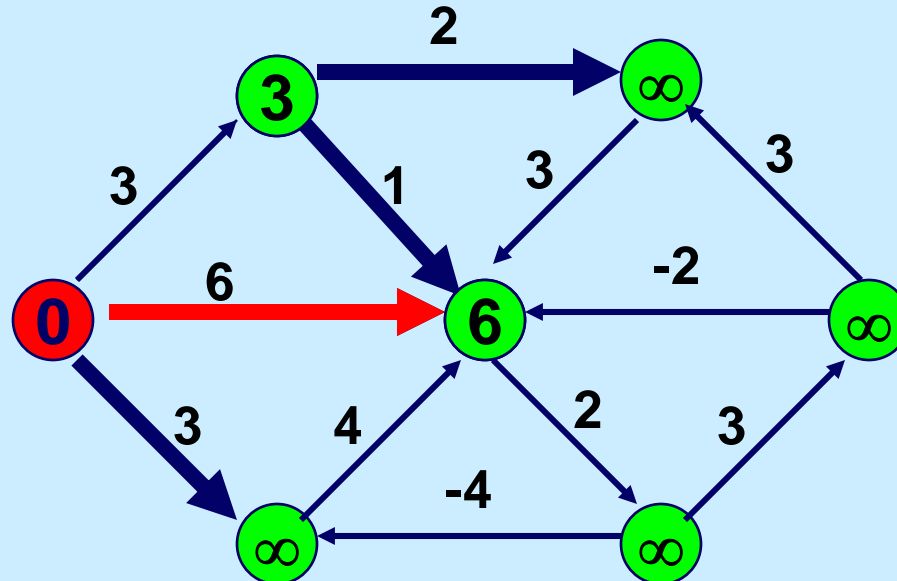


Pick a violating arc (i,j) and replace $d(j)$ by $d(i) + c_{ij}$.

An Example

Generic Step

An arc (i,j) is **violating** if $d(j) > d(i) + c_{ij}$.

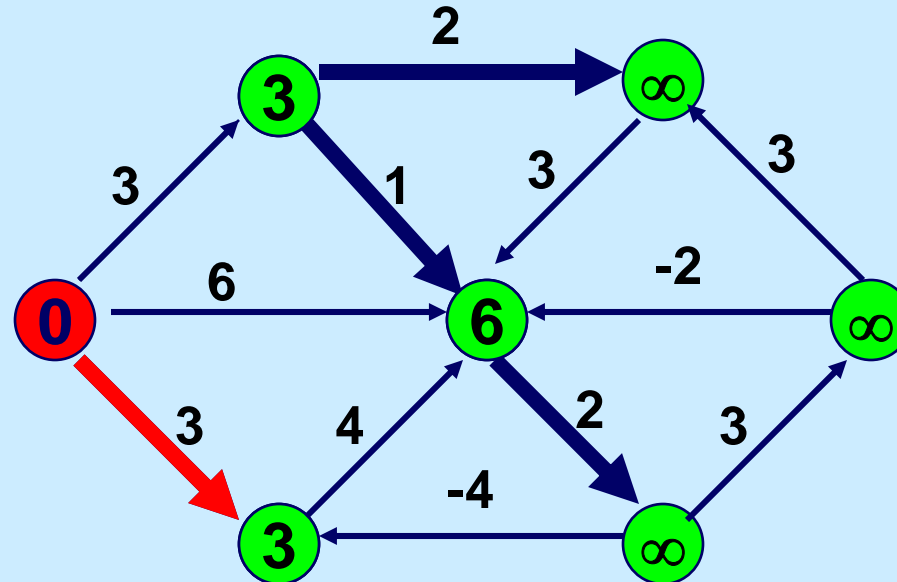


Pick a violating arc (i,j) and replace $d(j)$ by $d(i) + c_{ij}$.

An Example

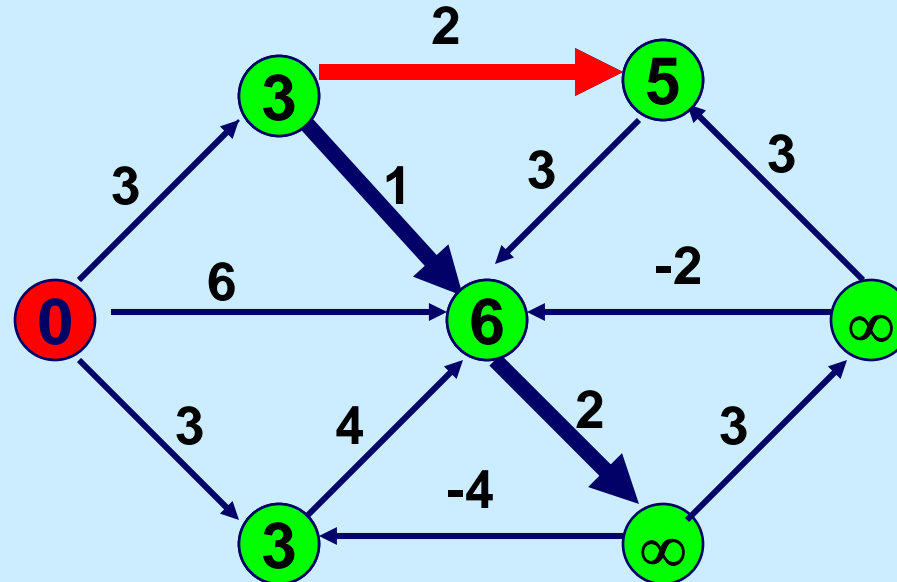
Generic Step

An arc (i,j) is **violating** if $d(j) > d(i) + c_{ij}$.



Pick a violating arc (i,j) and replace $d(j)$ by $d(i) + c_{ij}$.

An Example



Generic Step

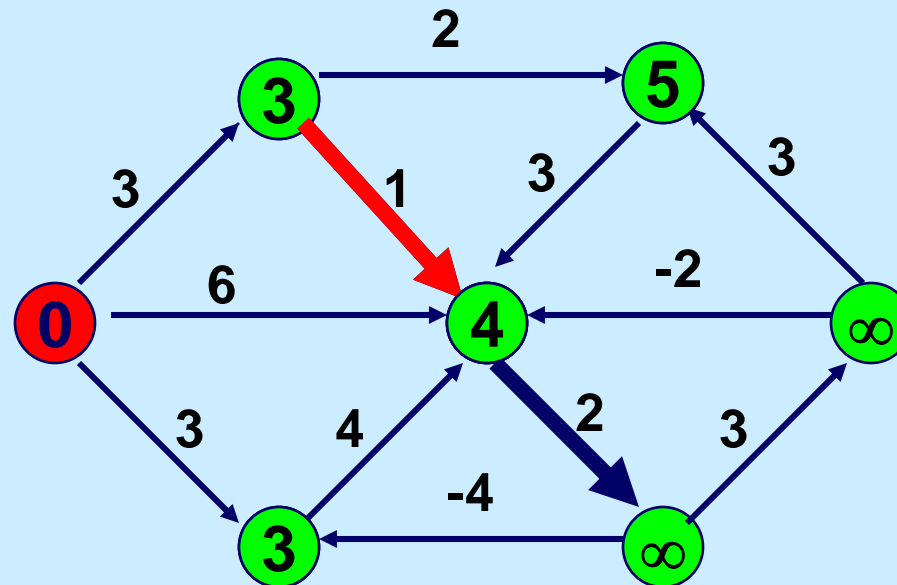
An arc (i,j) is **violating** if $d(j) > d(i) + c_{ij}$.

Pick a violating arc (i,j) and replace $d(j)$ by $d(i) + c_{ij}$.

An Example

Generic Step

An arc (i,j) is **violating** if $d(j) > d(i) + c_{ij}$.

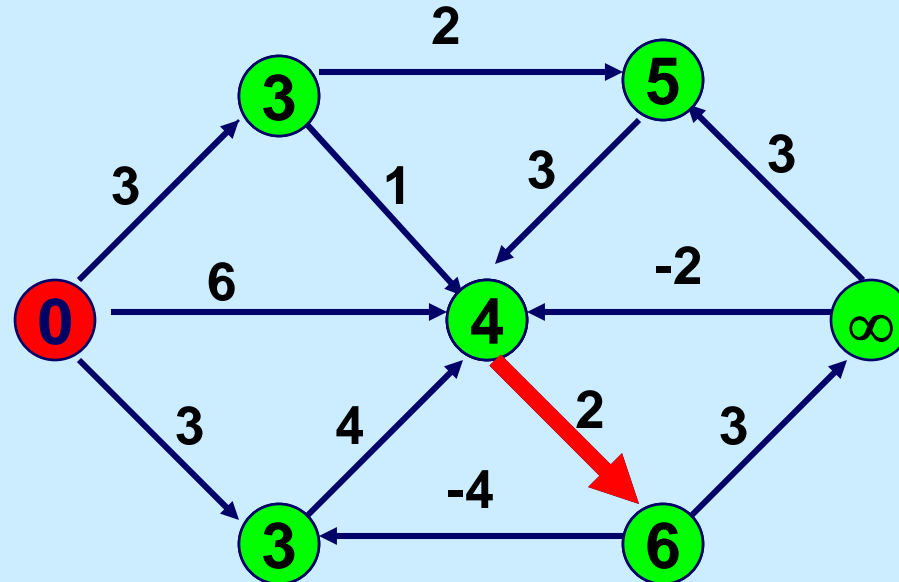


Pick a violating arc (i,j) and replace $d(j)$ by $d(i) + c_{ij}$.

An Example

Generic Step

An arc (i,j) is **violating** if $d(j) > d(i) + c_{ij}$.

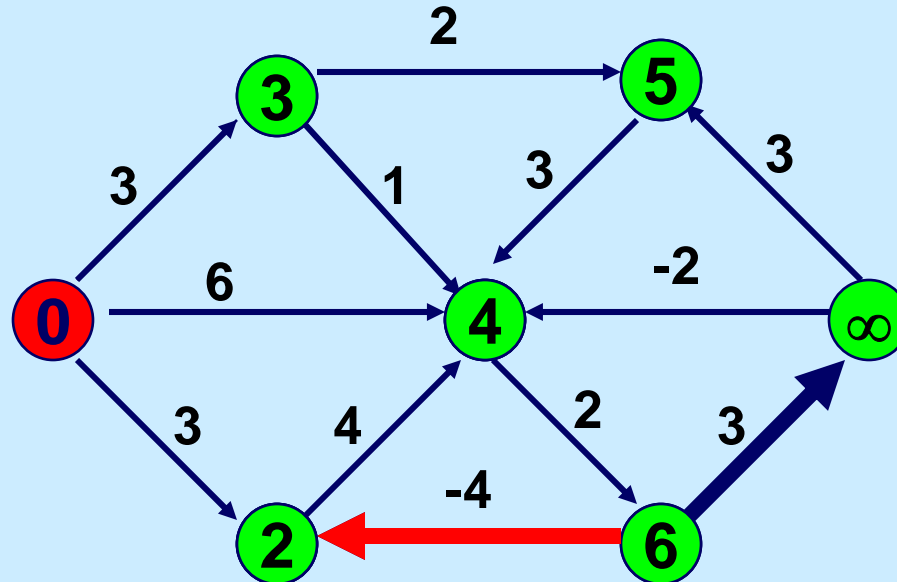


Pick a violating arc (i,j) and replace $d(j)$ by $d(i) + c_{ij}$.

An Example

Generic Step

An arc (i,j) is **violating** if $d(j) > d(i) + c_{ij}$.

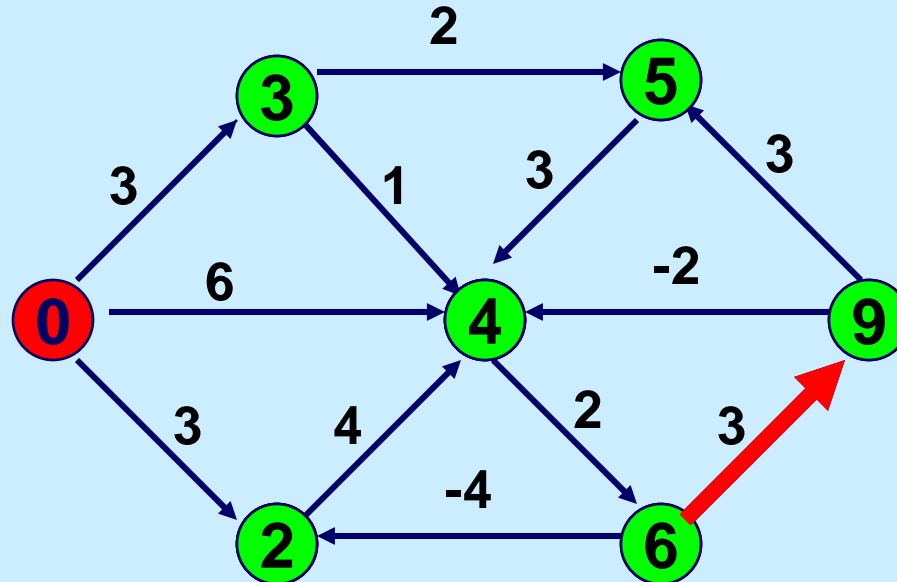


Pick a violating arc (i,j) and replace $d(j)$ by $d(i) + c_{ij}$.

An Example

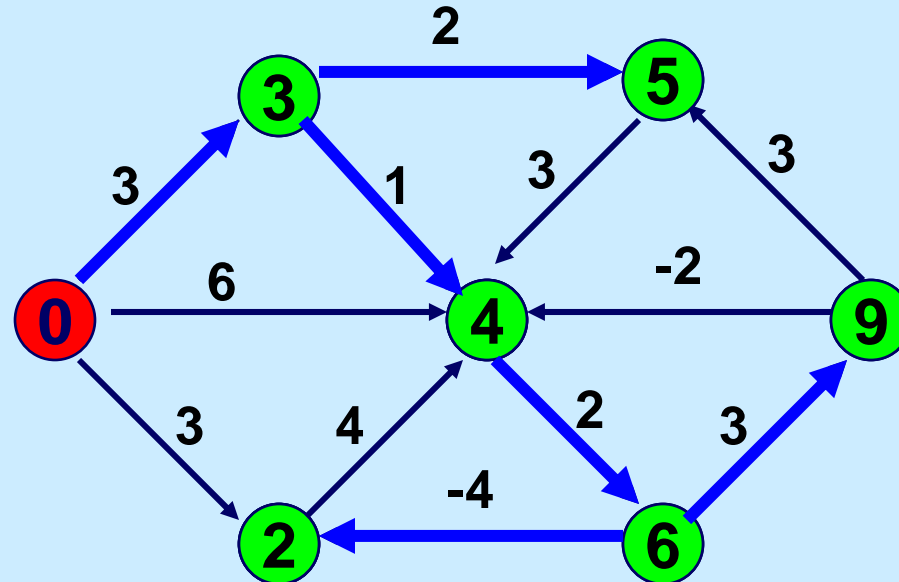
Generic Step

An arc (i,j) is **violating** if $d(j) > d(i) + c_{ij}$.



Pick a violating arc (i,j) and replace $d(j)$ by $d(i) + c_{ij}$.

An Example



Generic Step

An arc (i,j) is **violating** if $d(j) > d(i) + c_{ij}$.

Pick a violating arc (i,j) and replace $d(j)$ by $d(i) + c_{ij}$.

No arc is violating

The distance labels are optimal

We now show the predecessor arcs.