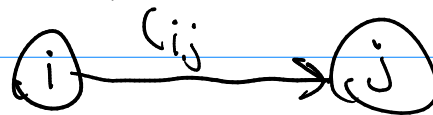
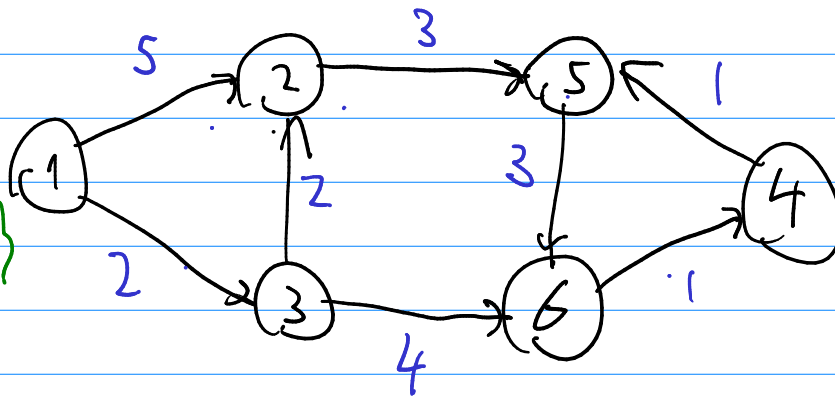


Shortest Paths



Label Setting
algorithm

$S = \emptyset$
 $\bar{S} = \{1, \dots, 6\}$

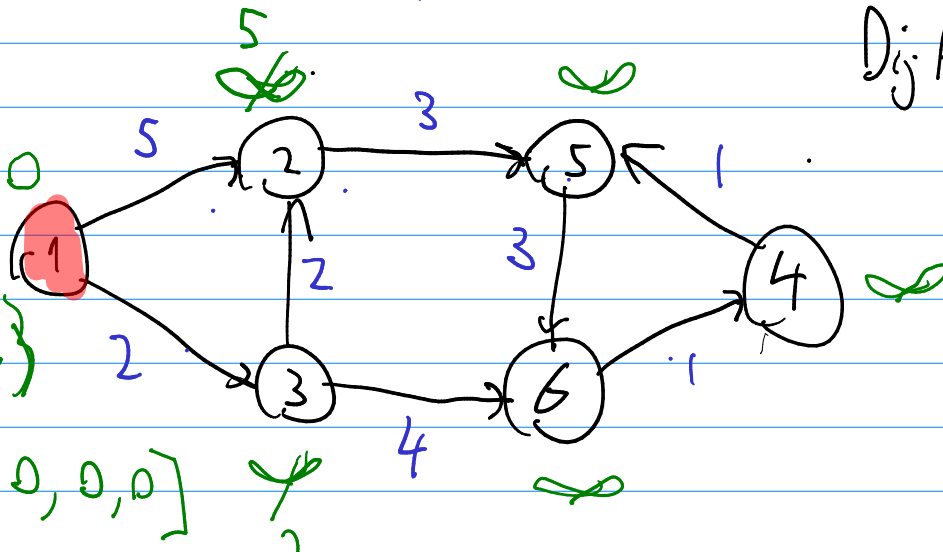


Dijkstra's
Algorithm

$S = \{1\}$

$\bar{S} = \{2, \dots, 6\}$

$\text{Pred} = [0, 1, 1, 0, 0, 0]$



algorithm Dijkstra;

begin

$S := \emptyset$; $\bar{S} := N$;

$d(i) := \infty$ for each node $i \in N$;

$d(s) := 0$ and $\text{pred}(s) := 0$;

while $|S| < n$ **do**

begin

let $i \in \bar{S}$ be a node for which $d(i) = \min\{d(j) : j \in \bar{S}\}$;

$S := S \cup \{i\}$;

$\bar{S} := \bar{S} - \{i\}$;

for each $(i, j) \in A(i)$ **do**

if $d(j) > d(i) + c_{ij}$ **then** $d(j) := d(i) + c_{ij}$ and $\text{pred}(j) := i$;

end;

end;

