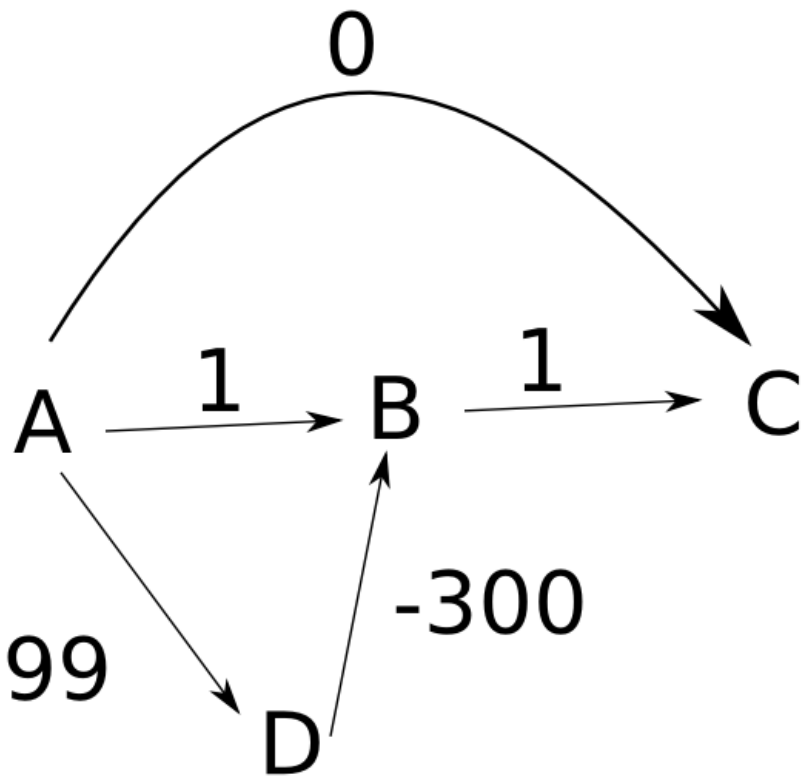
Dijkstra Example

What happens with negative weights?

Basic Algorithm

```
dijkstra(Graph G, Node start) {
  for each node: x.cost=infinity, x.known=false
  start.cost = 0
  while(not all nodes are known) {
    b = find unknown node with smallest cost
    b.known = true
    for each edge (b,a) in G
     if(!a.known)
       if(b.cost + weight((b,a)) < a.cost){
         a.cost = b.cost + weight((b,a))
         a.path = b
       }
}
```



A	N	0	-
B	N	??	-
C	N	??	-
D	N	??	-

A	Y	0	-
B	N	1	-
C	N	0	-
D	N	99	-

A	Y	0	-
B	N	1	-
C	Y	0	-
D	N	99	-

A	Y	0	-
B	Y	1	-
C	Y	0	-
D	N	99	-

C is already known, and its cost is less.

A	Y	0	-
B	Y	1	-
C	Y	0	-
D	Y	99	-

B is already known, the algorithm won't reduce it. And C is already known.