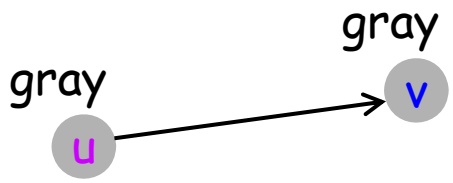
Case 2:

22-11a

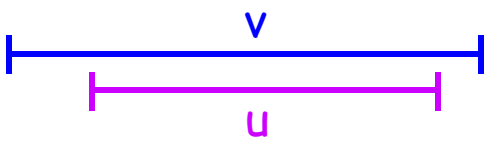


* intervals are not disjoint

⇨ descendant – ancestor relation

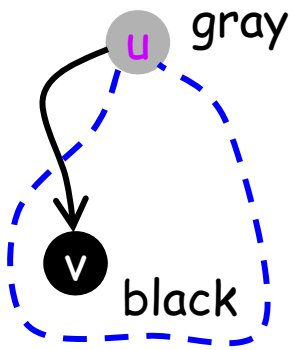
(nested intervals)

* f(u) < f(v) (* u 先 結 束 *)

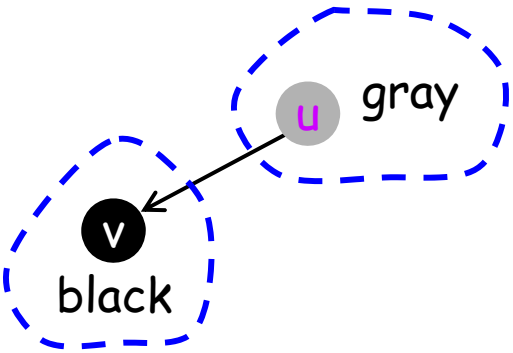
⇨ 

⇨ back edge !

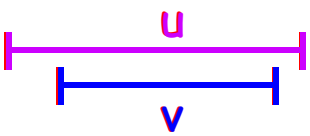
Case 3:



22-11b

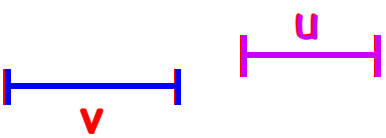


f(v) < f(u)

* d(u) < d(v) 

⇨ nested

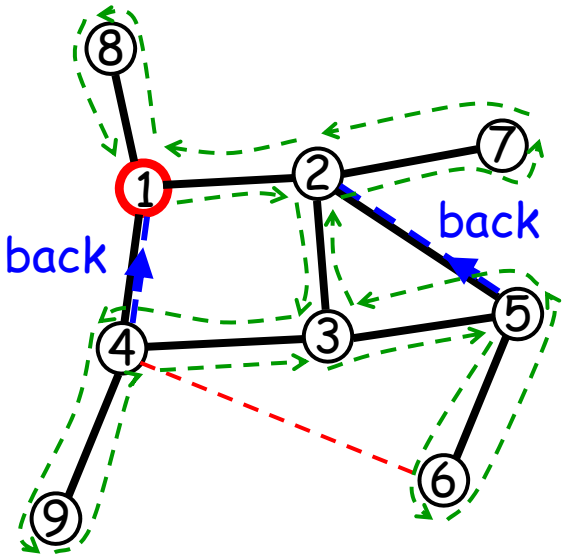
⇨ forward edge!

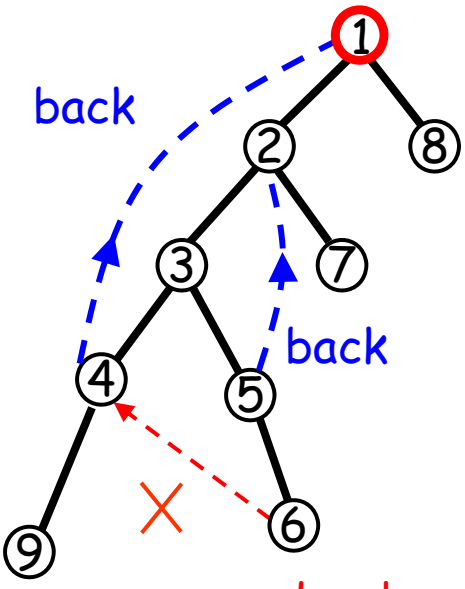
* d(u) > d(v) 

⇨ disjoint

⇨ cross edge!

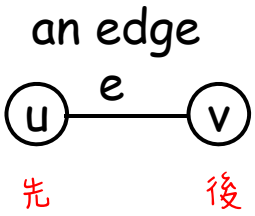
Theorem 22.10

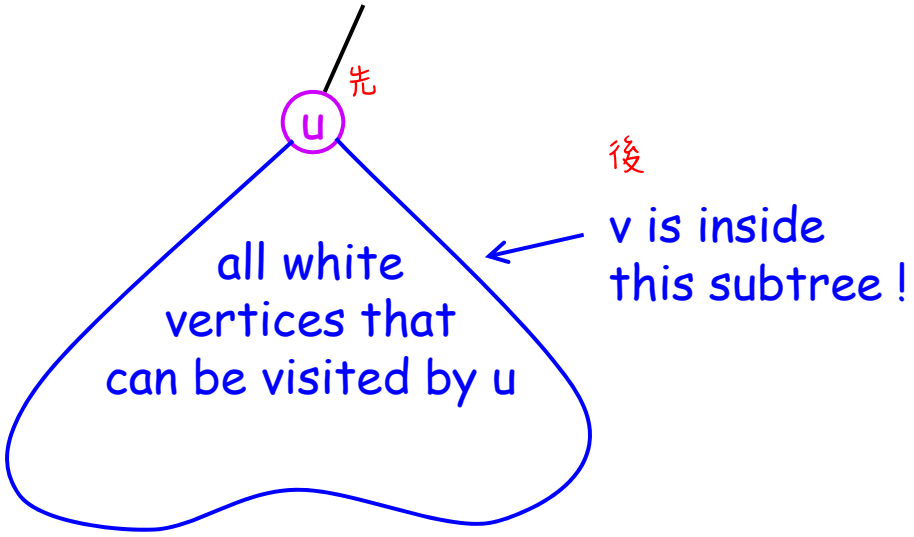




no cross edges!

Theorem 22.10

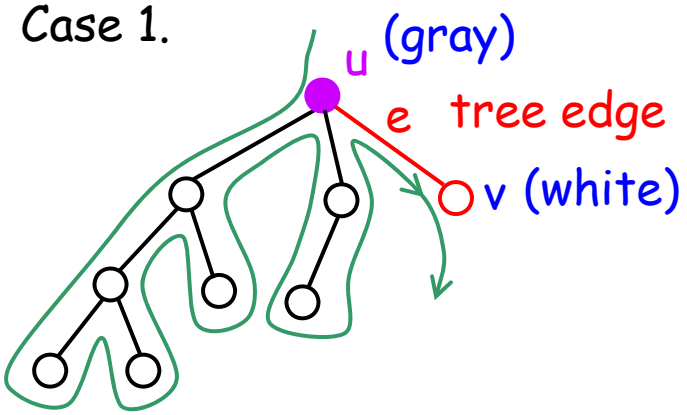




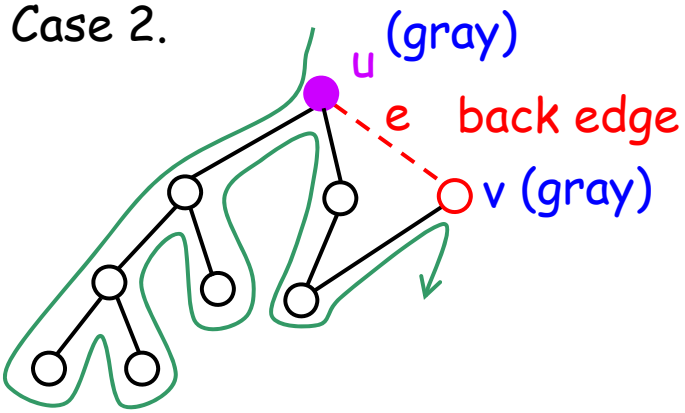
⇨ v is a descendant of u

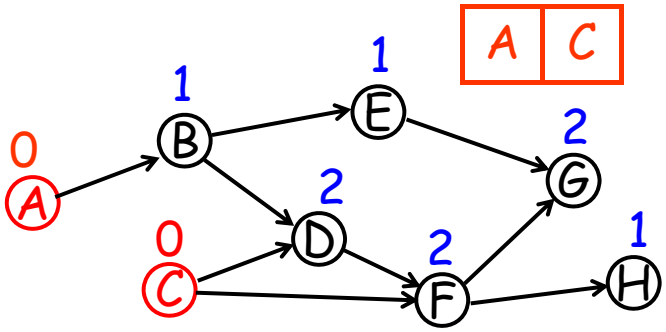
* 在 u finish 前 , v 必 會 被 visit !!

Case 1.

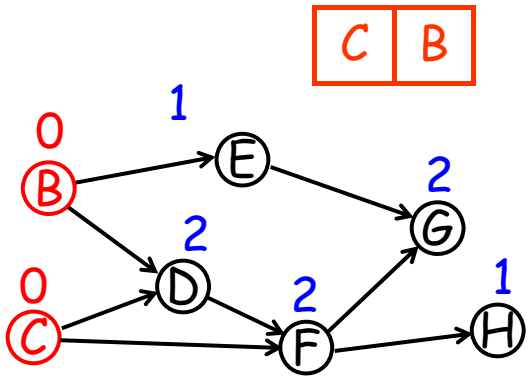


Case 2.

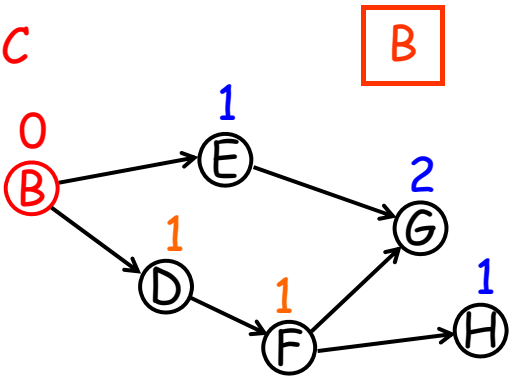




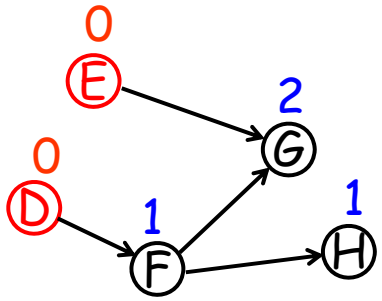
(1) A



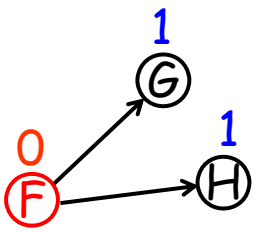
(2) AC



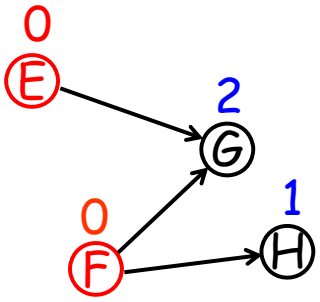
(3) ACB | D | E |



(5) ACBDE | F |



(4) ACBD | E | F |

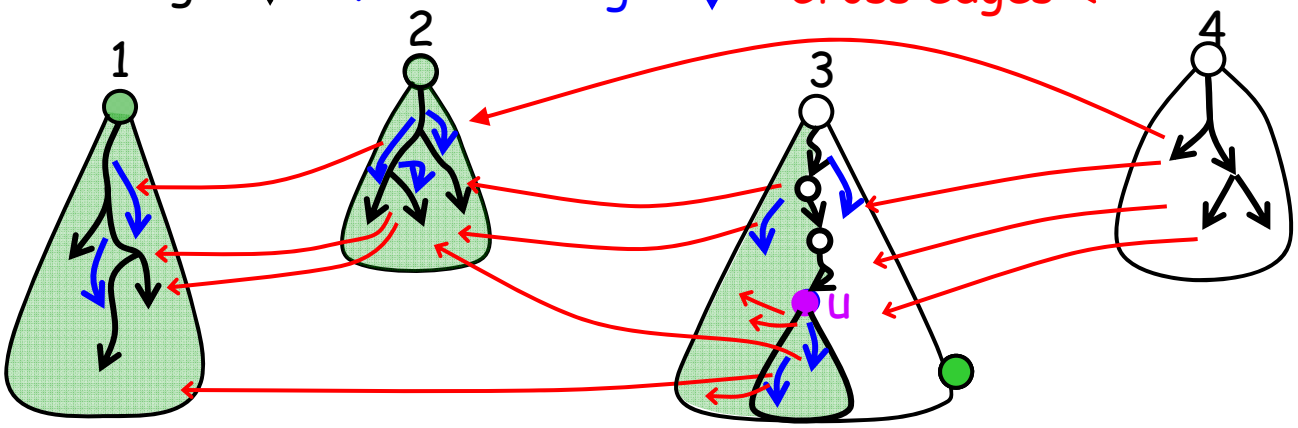


(8) ACBDEFGH

Topological sort - Correctness

All edges are:

tree edges ↓ Forward edges ↓ Cross edges ←



: f( ) < f(u) ⇨ may be arrived from u

: f( ) > f(u) ⇨ can not be arrived from u

⇨ u (in order of decreasing f(u))

(all edges starting at u are from left to right)

(all edges are from left to right)