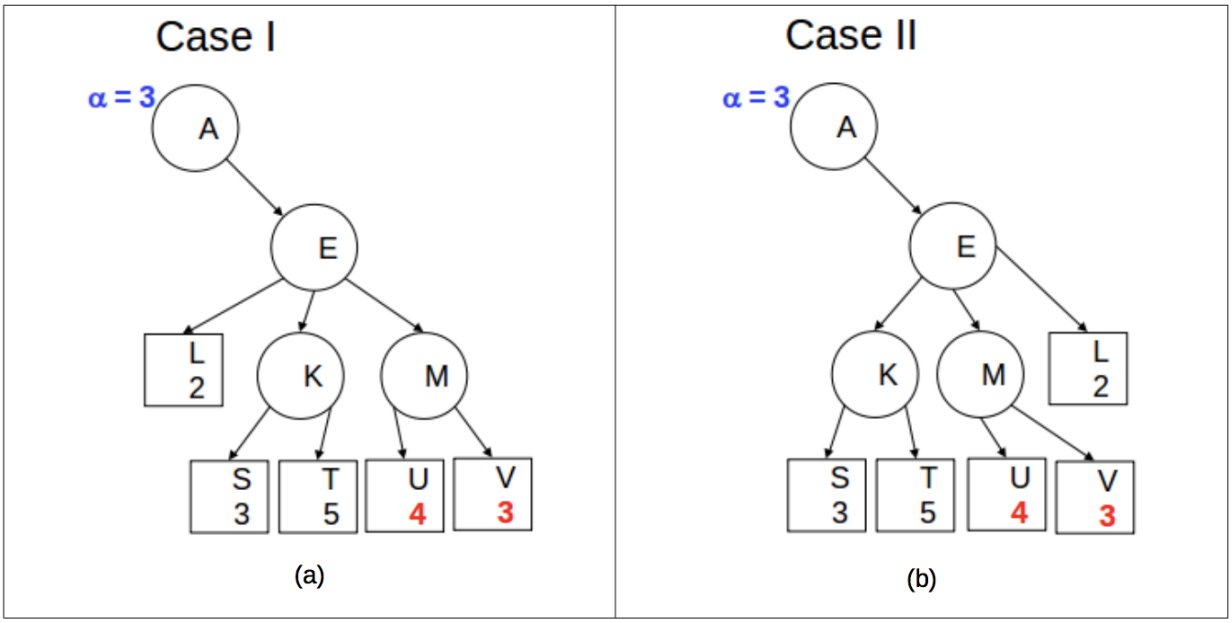
Assigment 5: Alpha-Beta Pruning

A01226021 Constanza Madrigal Reyes
TC2011 Intelligent Systems

August 30, 2018

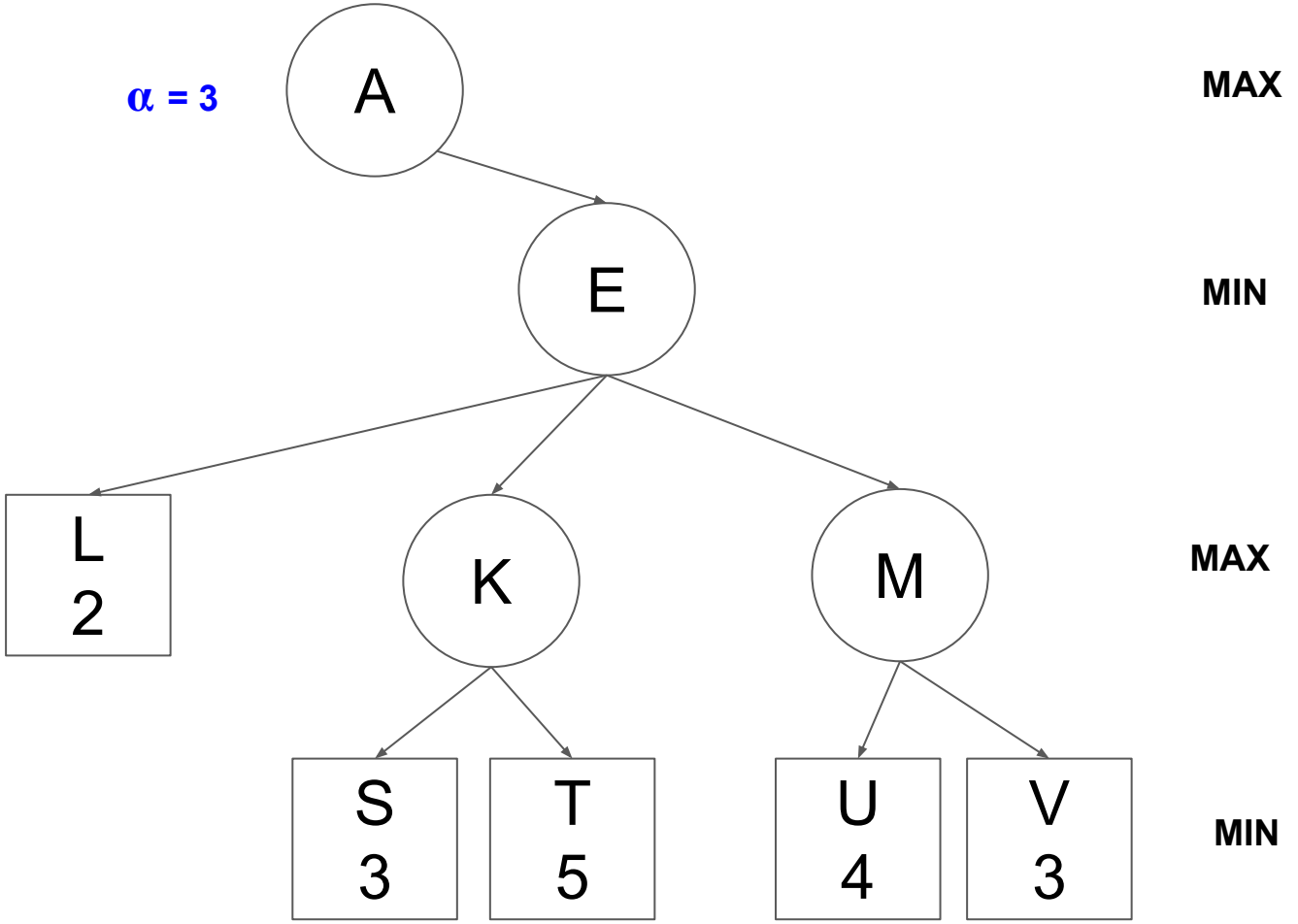
Problem description

Implement Adversarial Search MiniMax optimized Alpha-Beta pruning algorithm. Develop the procedure shown in class alpha-beta pruning to the trees in Figure (a) and (b). Notice the Node A starts with an alpha = 3.

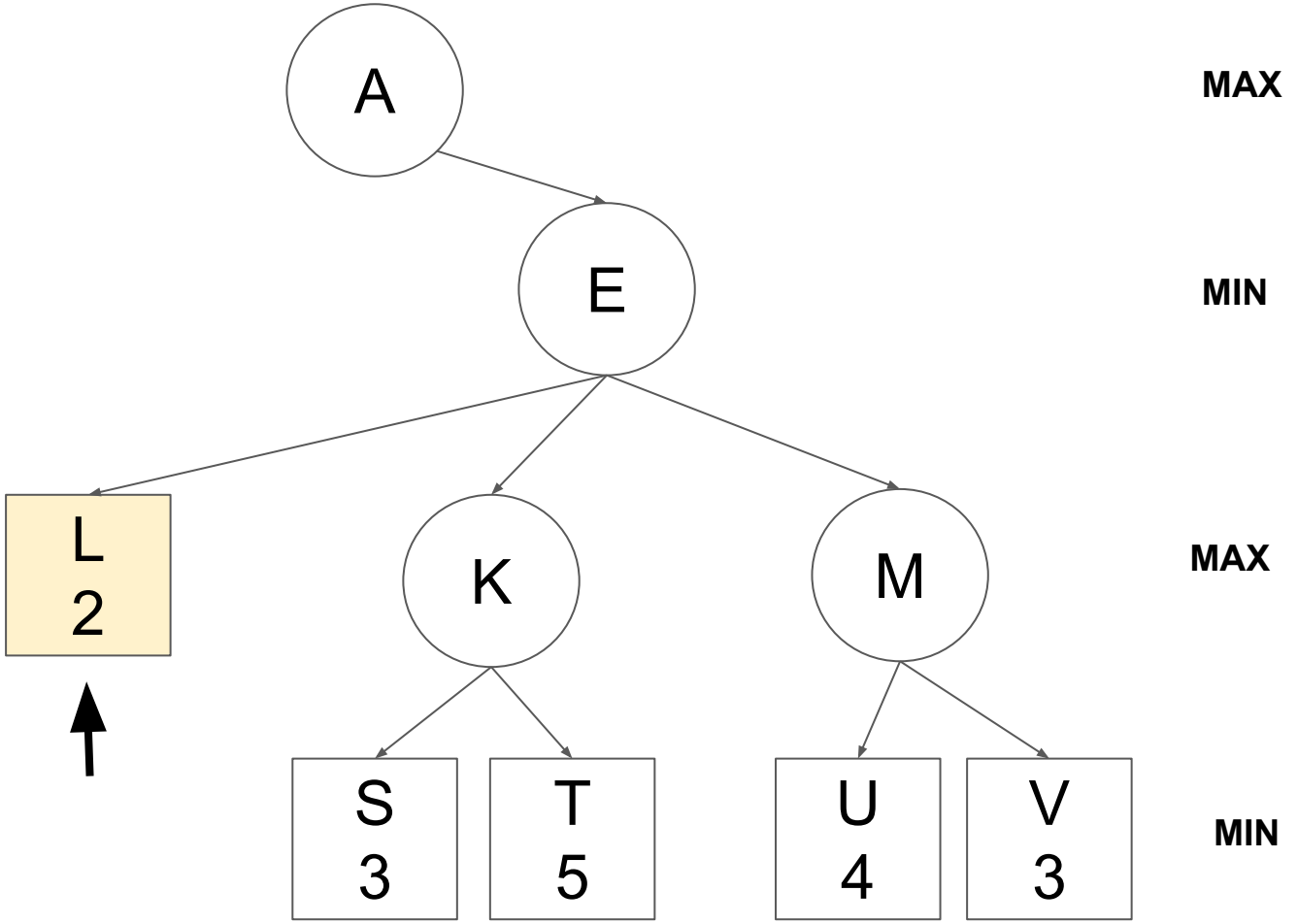


Using the Alpha - Beta pruning algorithms copy the whole subtree figure (a) and figure (b) in every case, to show the progress of the algorithm step by step. Indicate which nodes were *pruned* if this is the case as well as the values of α and β where necessary (only in nodes A, E, K and M where the evaluation prunning is executed) to indicate why or why not they were pruned.

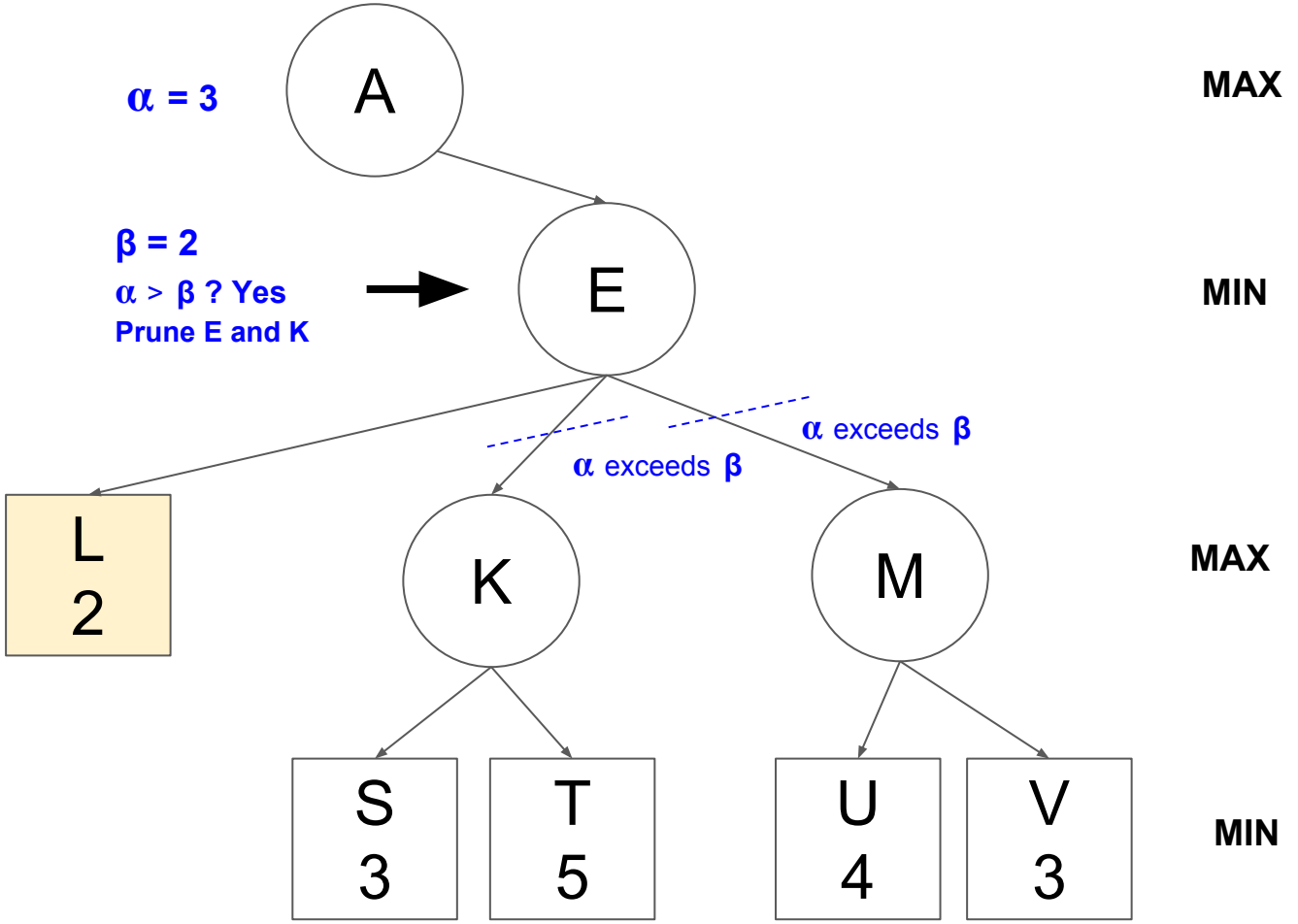
Case I



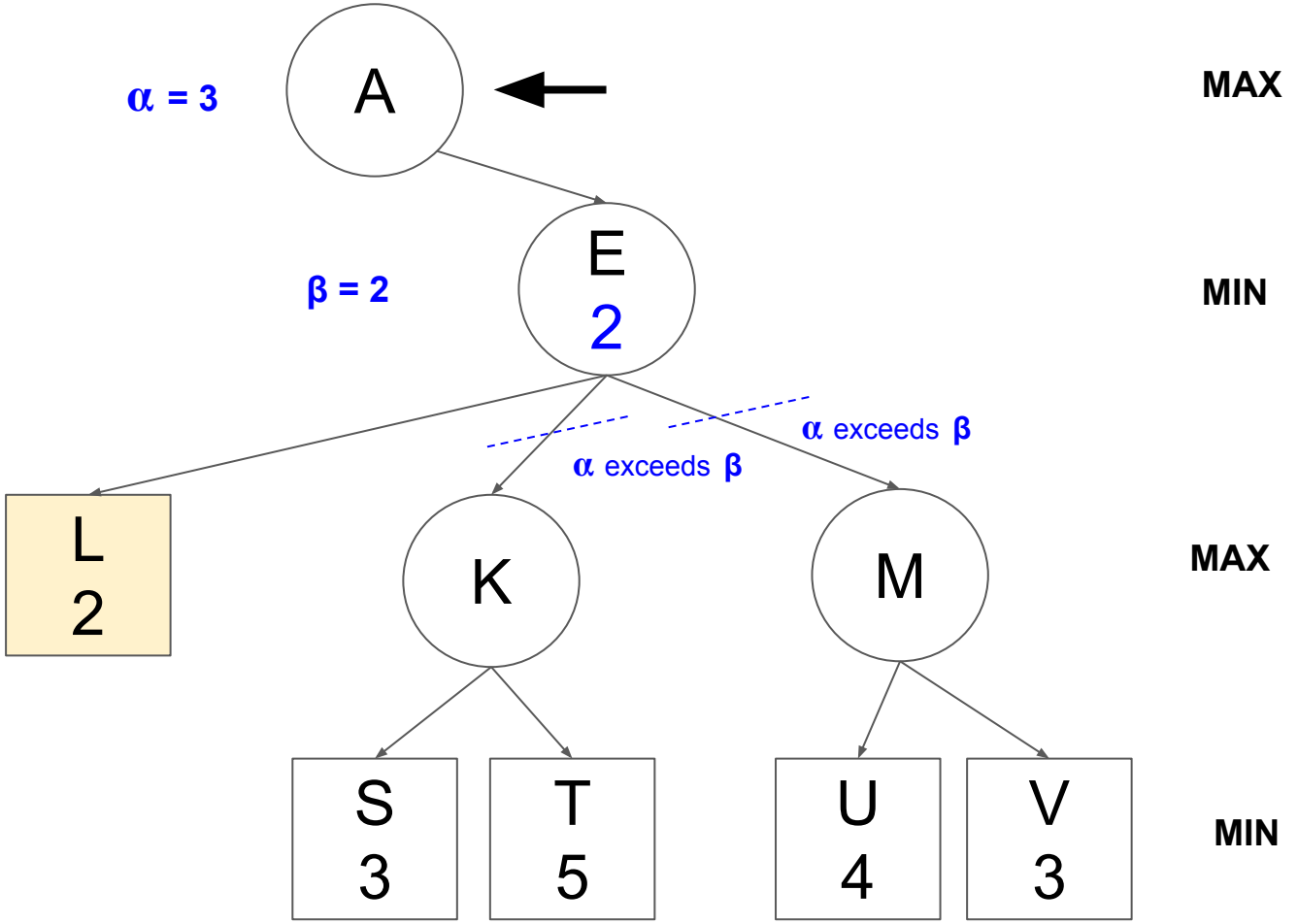
Case I



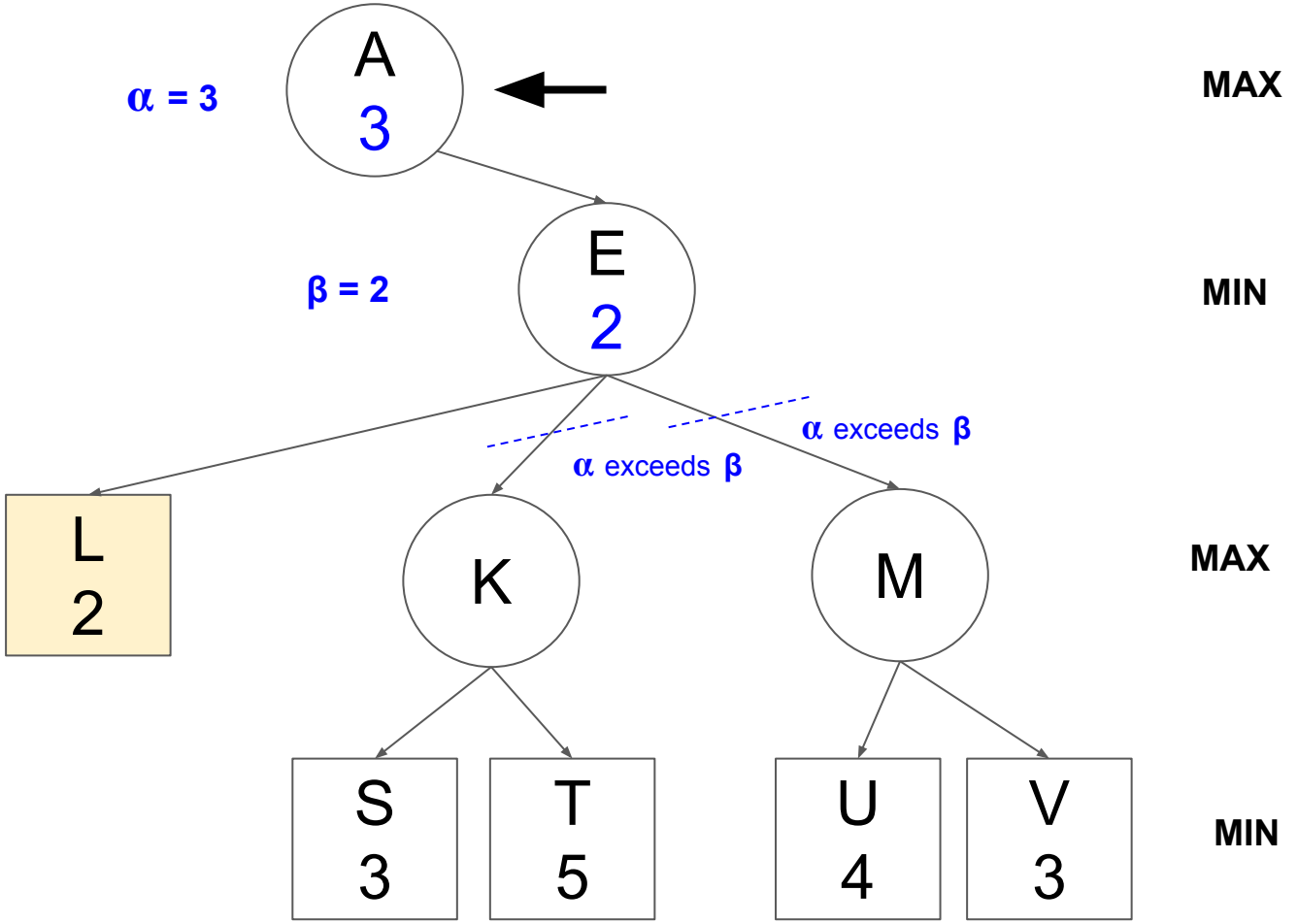
Case I


α = 3
A
MAX
β = 2
α > β ? Yes
Prune E and K
E
MIN
α exceeds β
α exceeds β
L
2
K
M
MAX
S
3
T
5
U
4
V
3
MIN

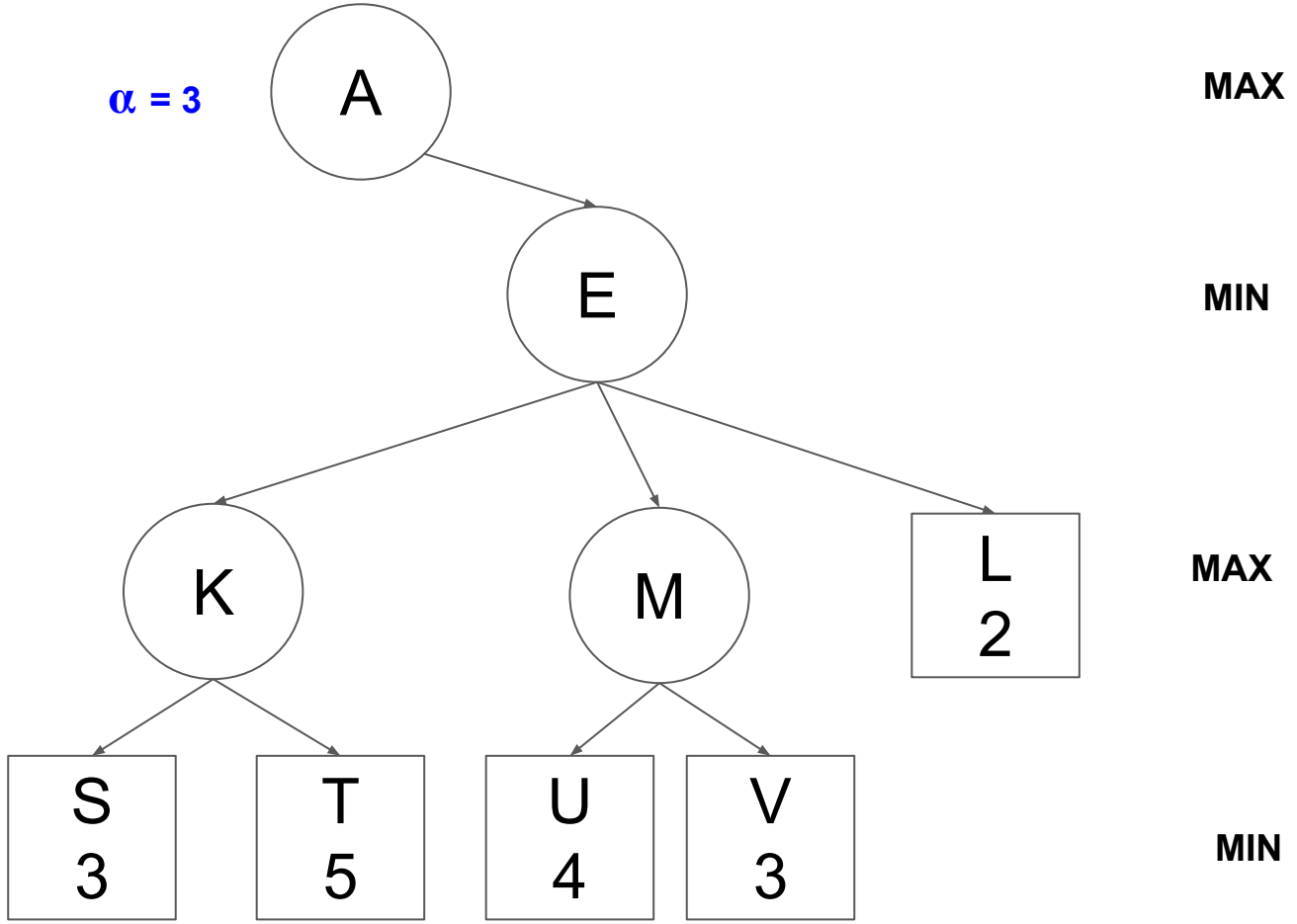
Case I



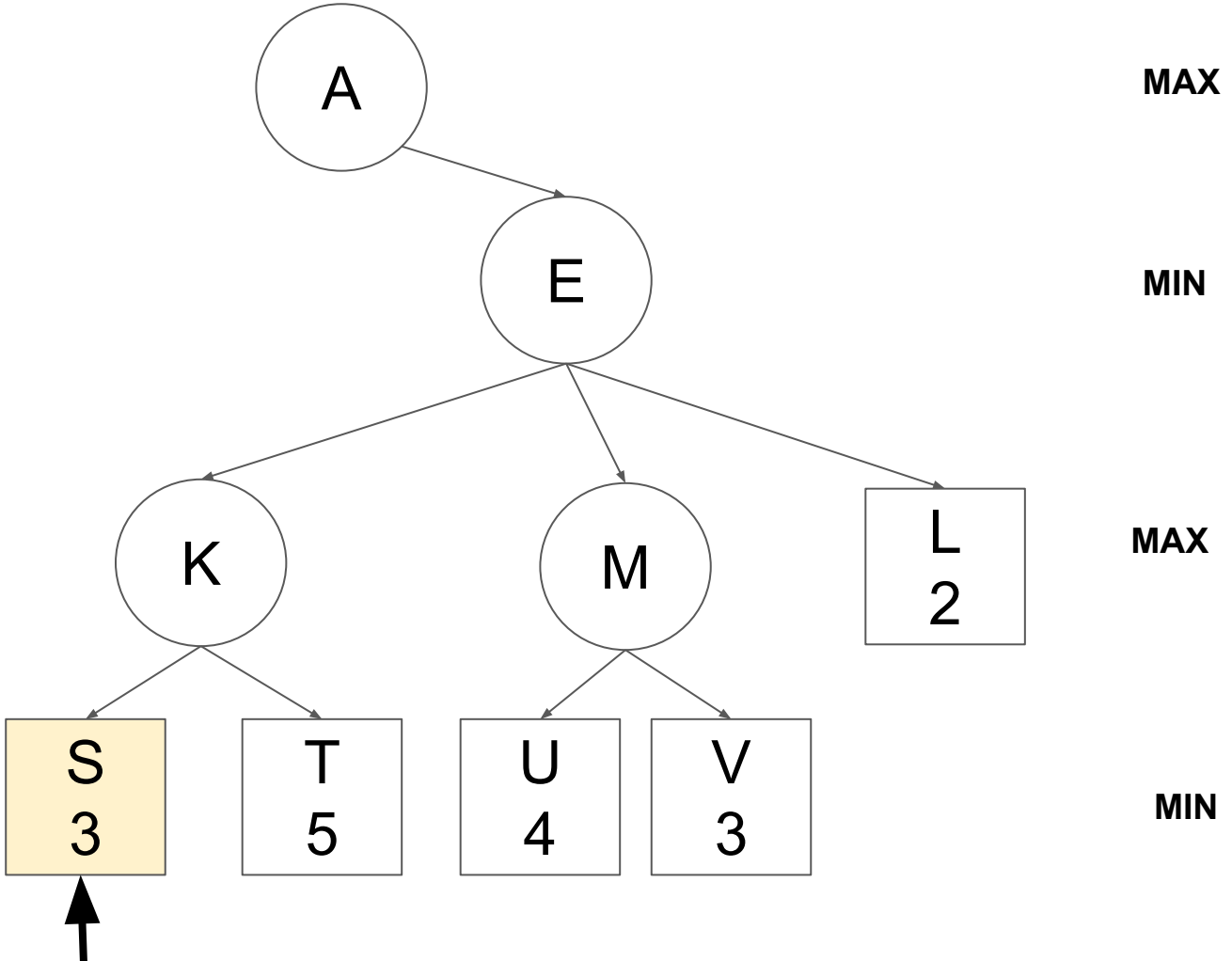
Case I


α = 3
A
3
MAX
β = 2
E
2
MIN
α exceeds β
α exceeds β
L
2
K
M
MAX
S
3
T
5
U
4
V
3
MIN

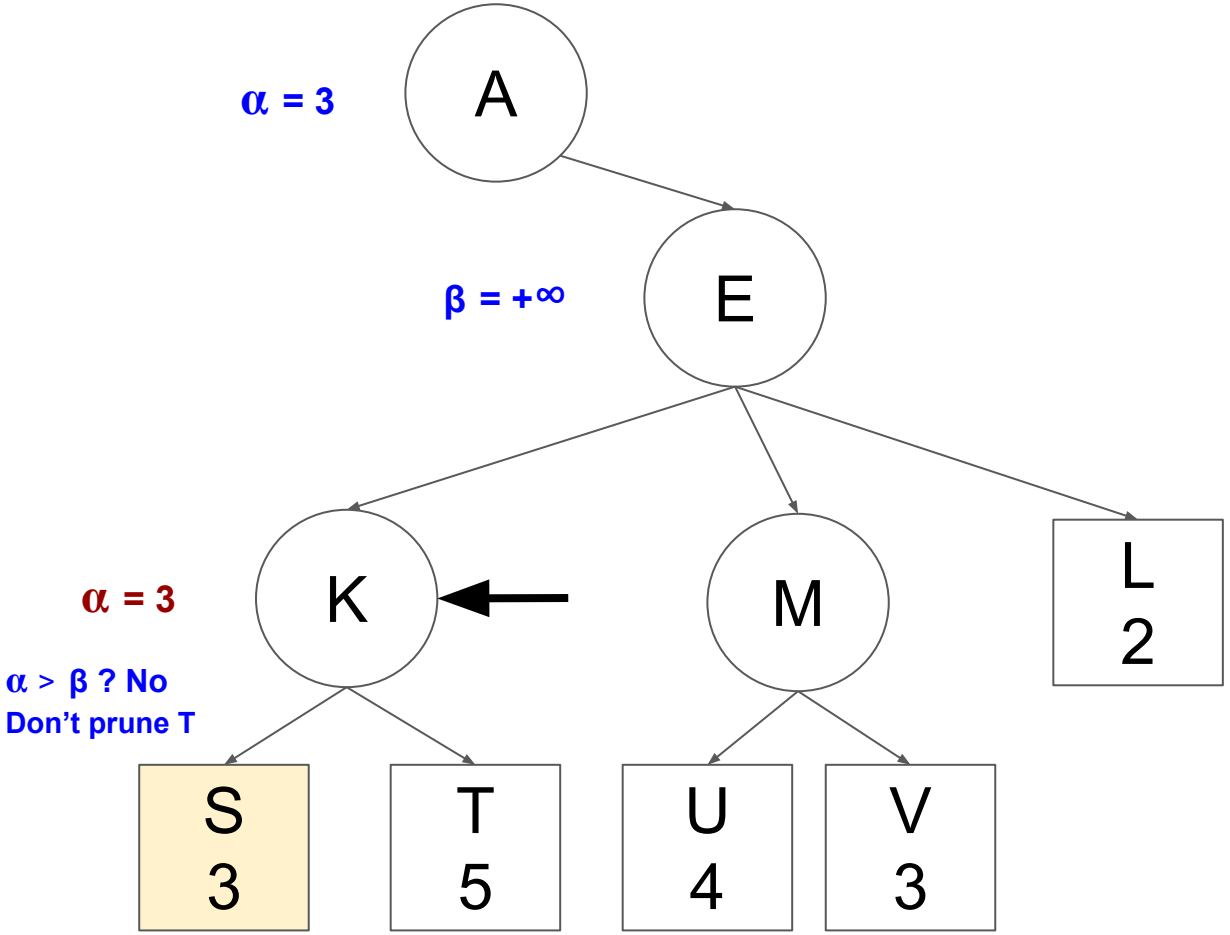
Case II



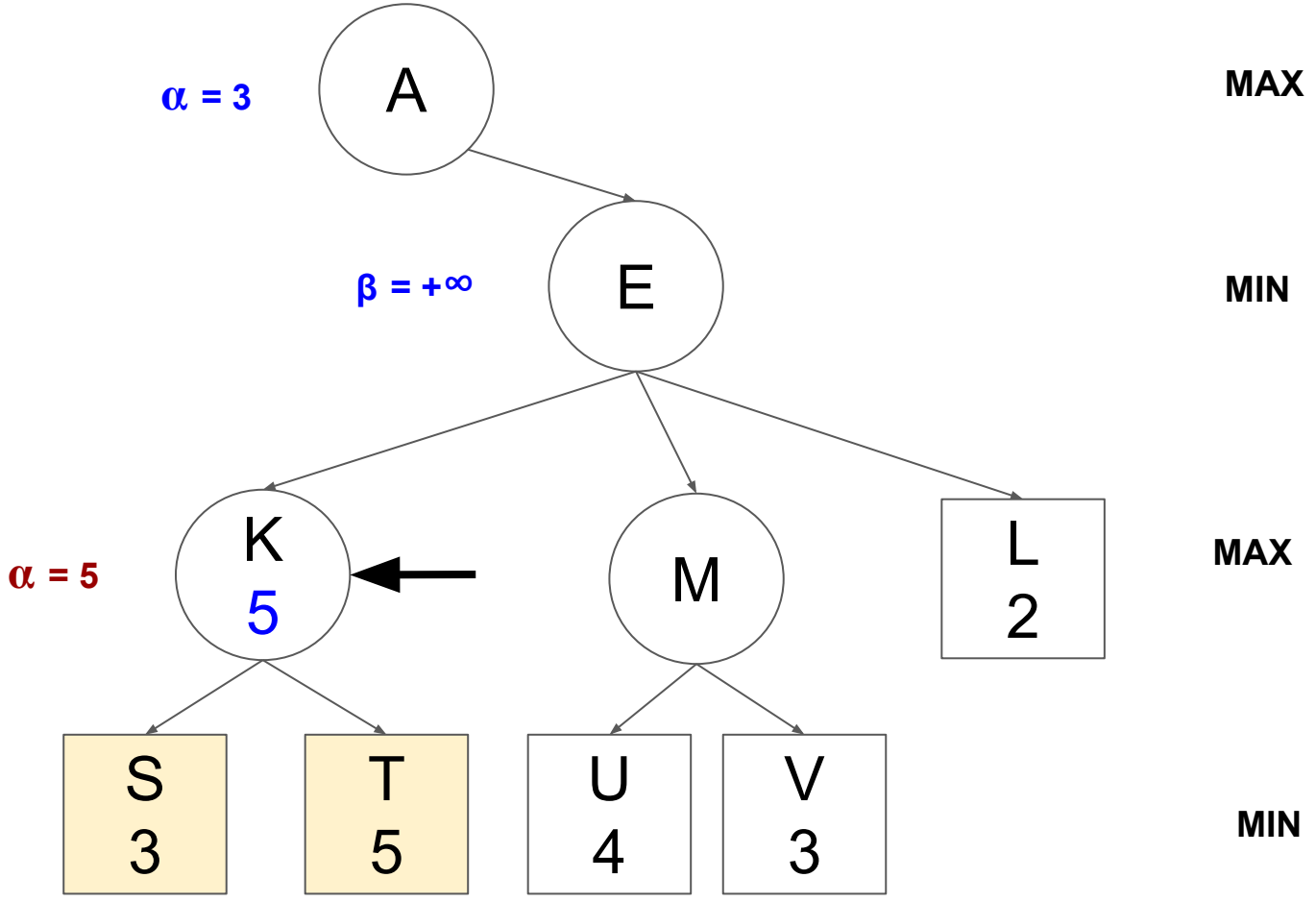
Case II



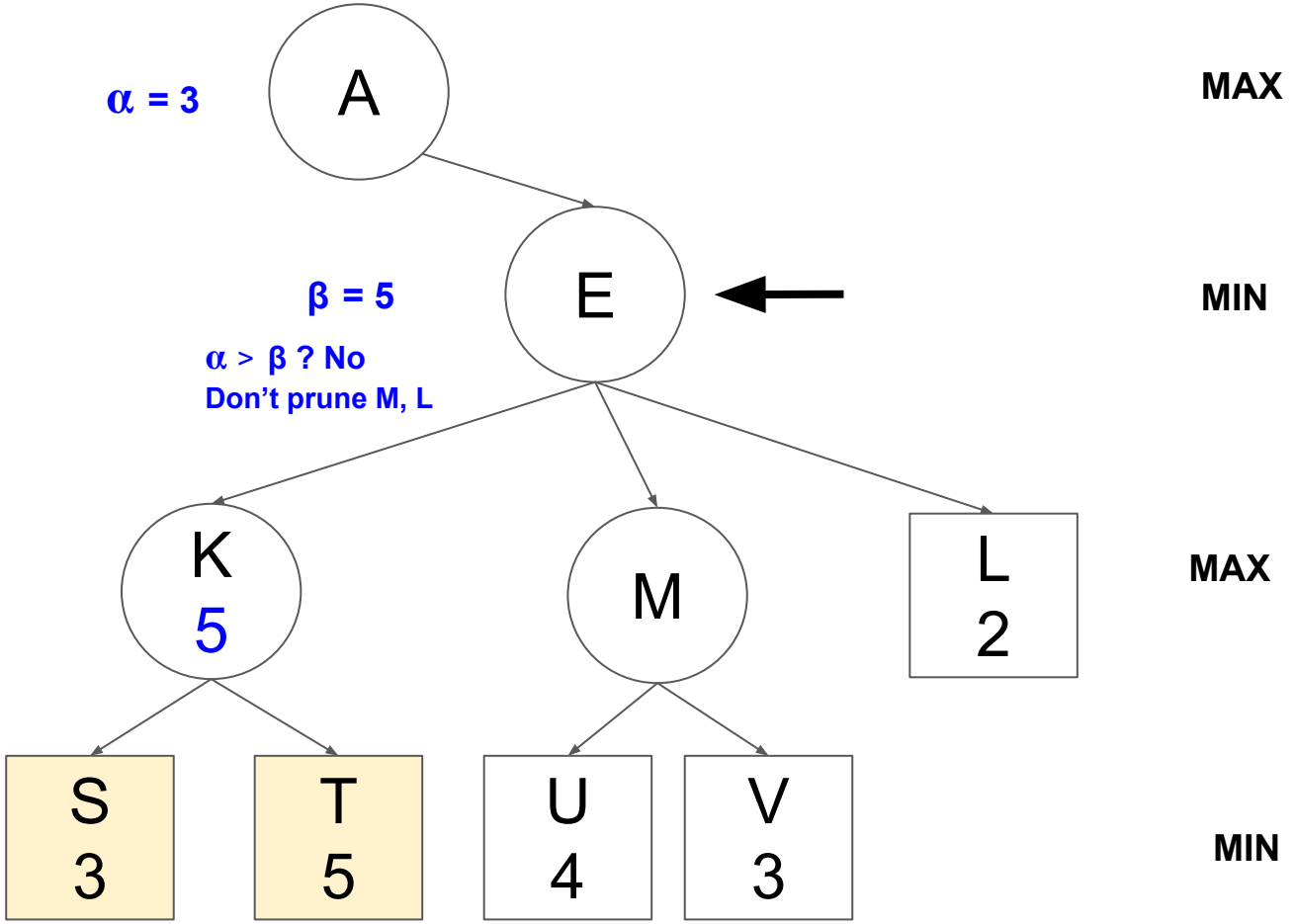
Case II



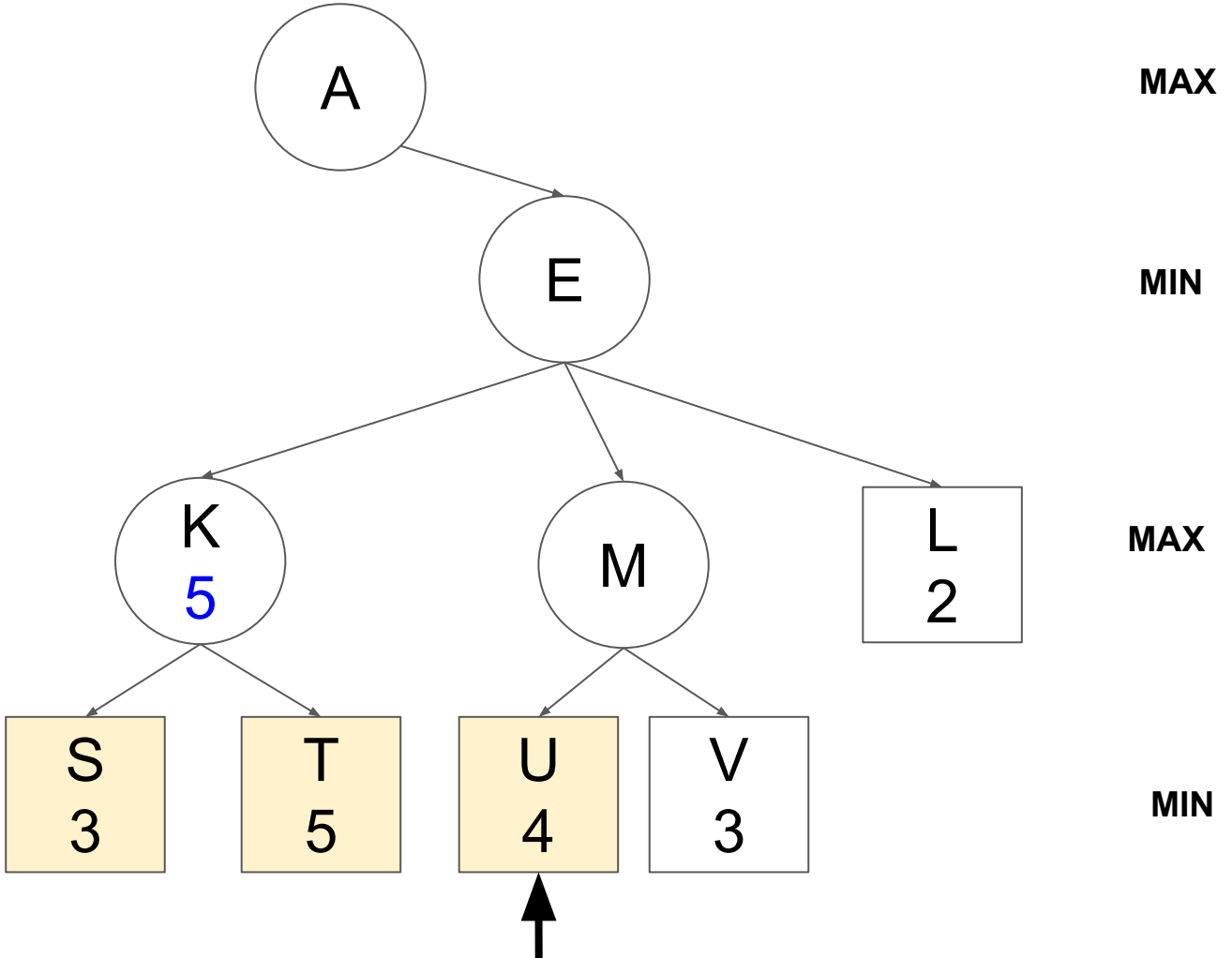
Case II



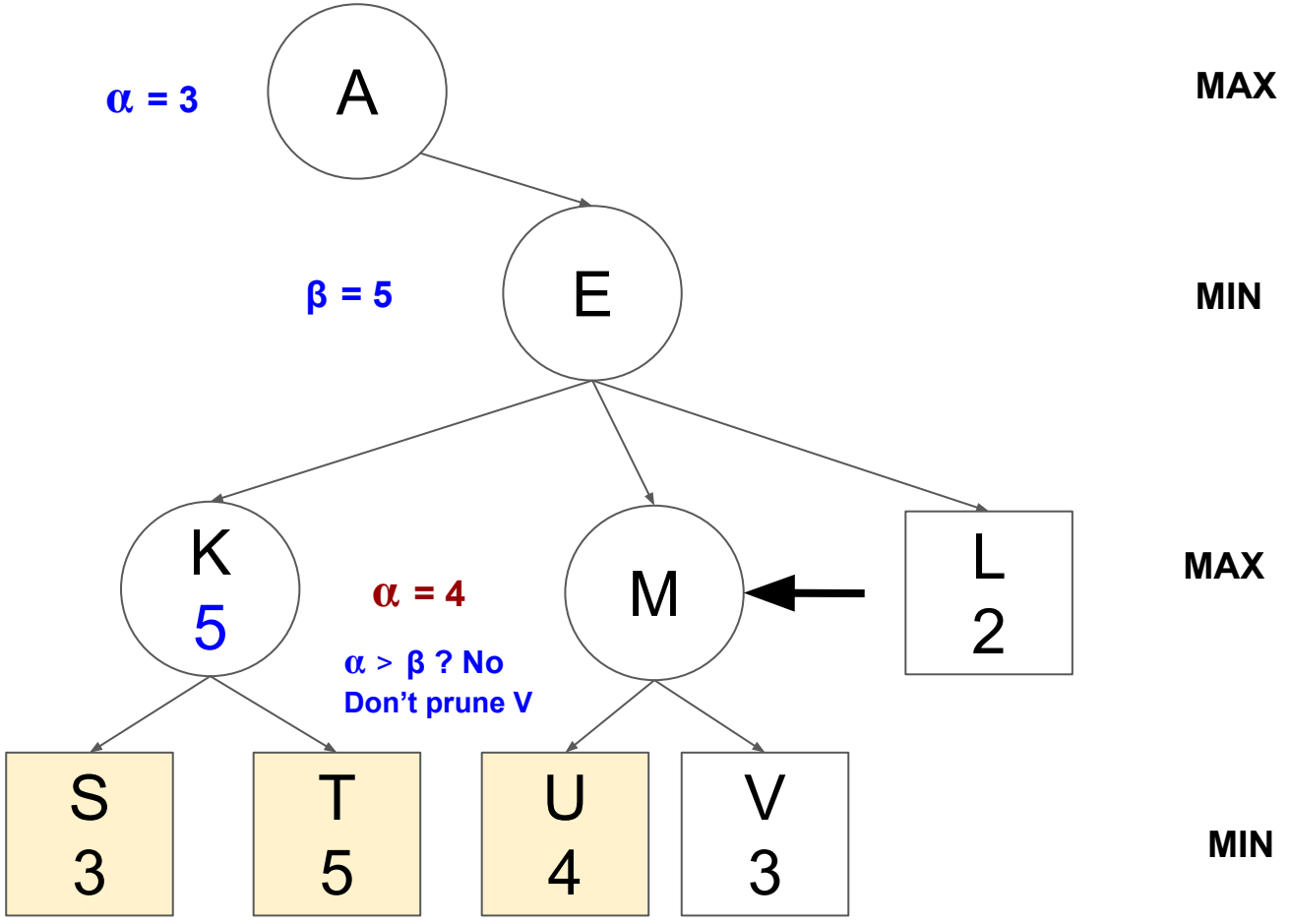
Case II



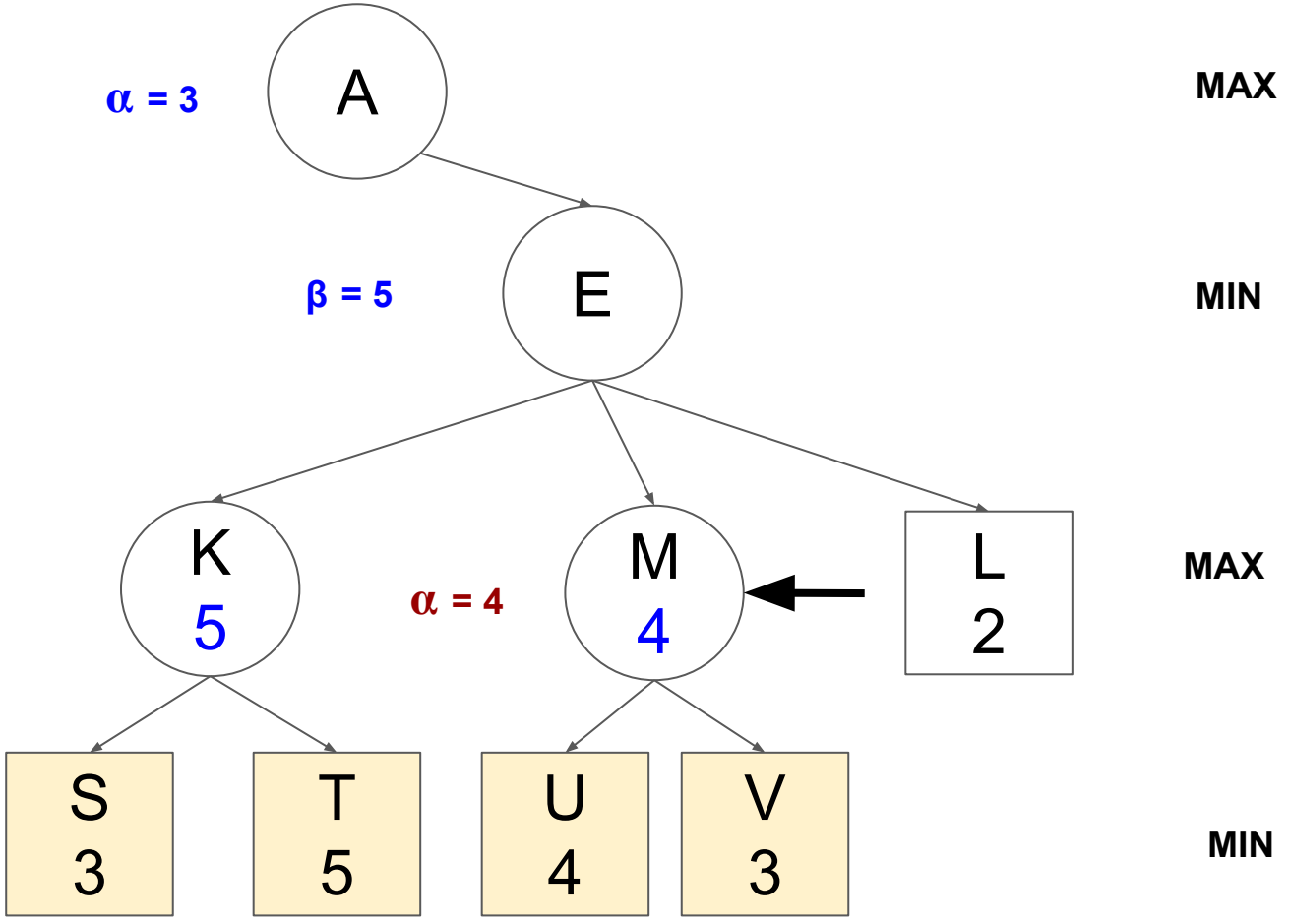
Case II



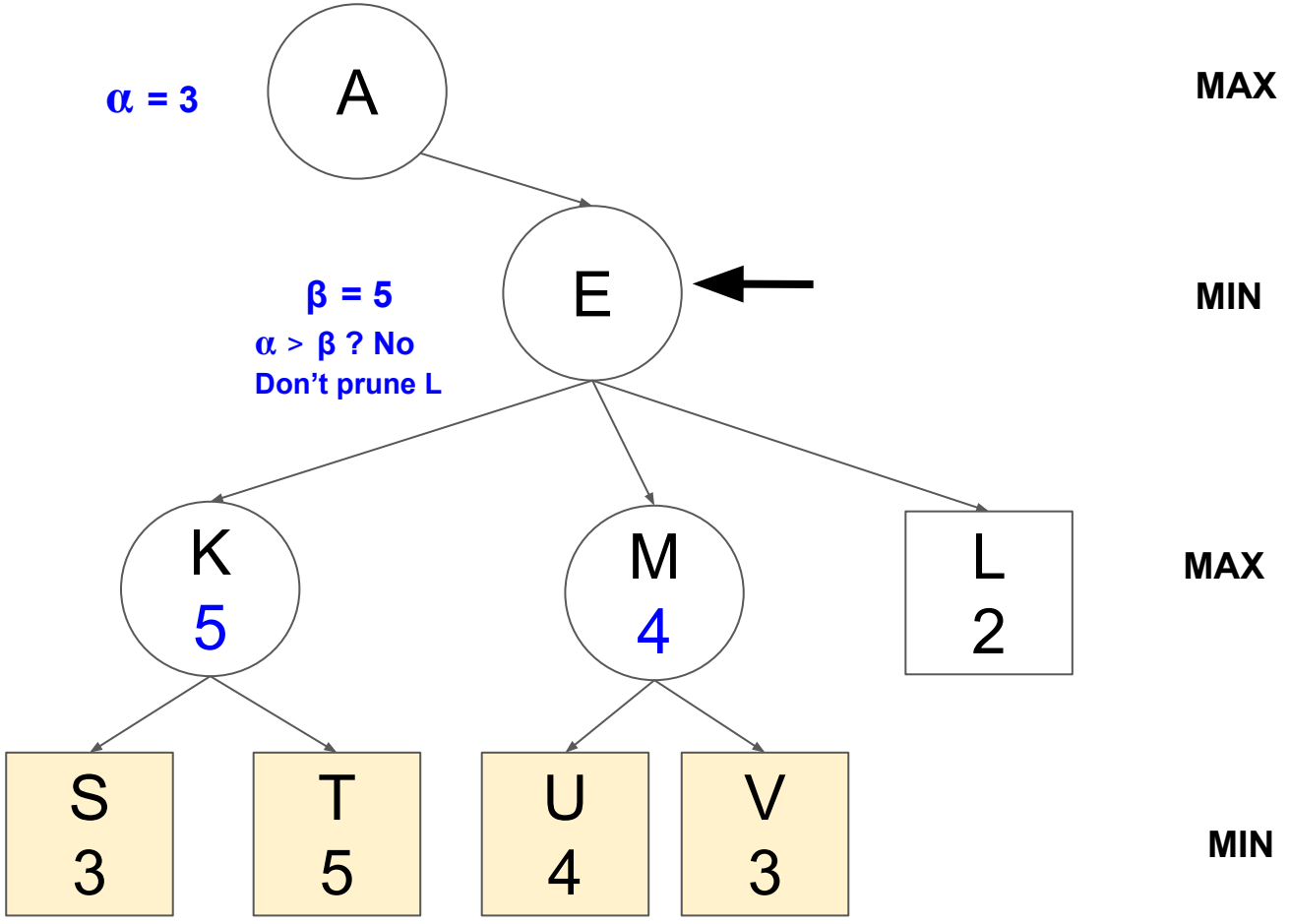
Case II



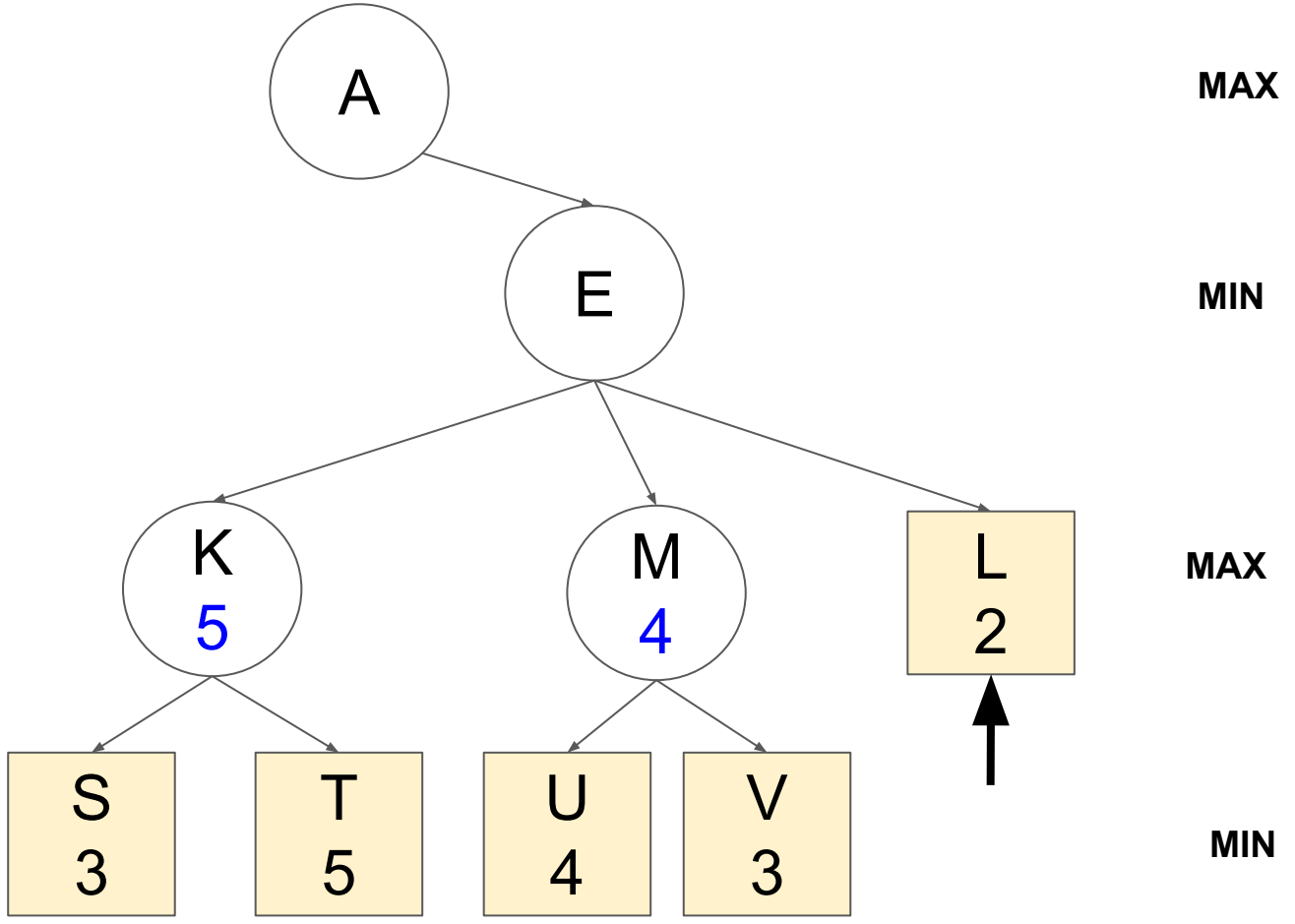
Case II



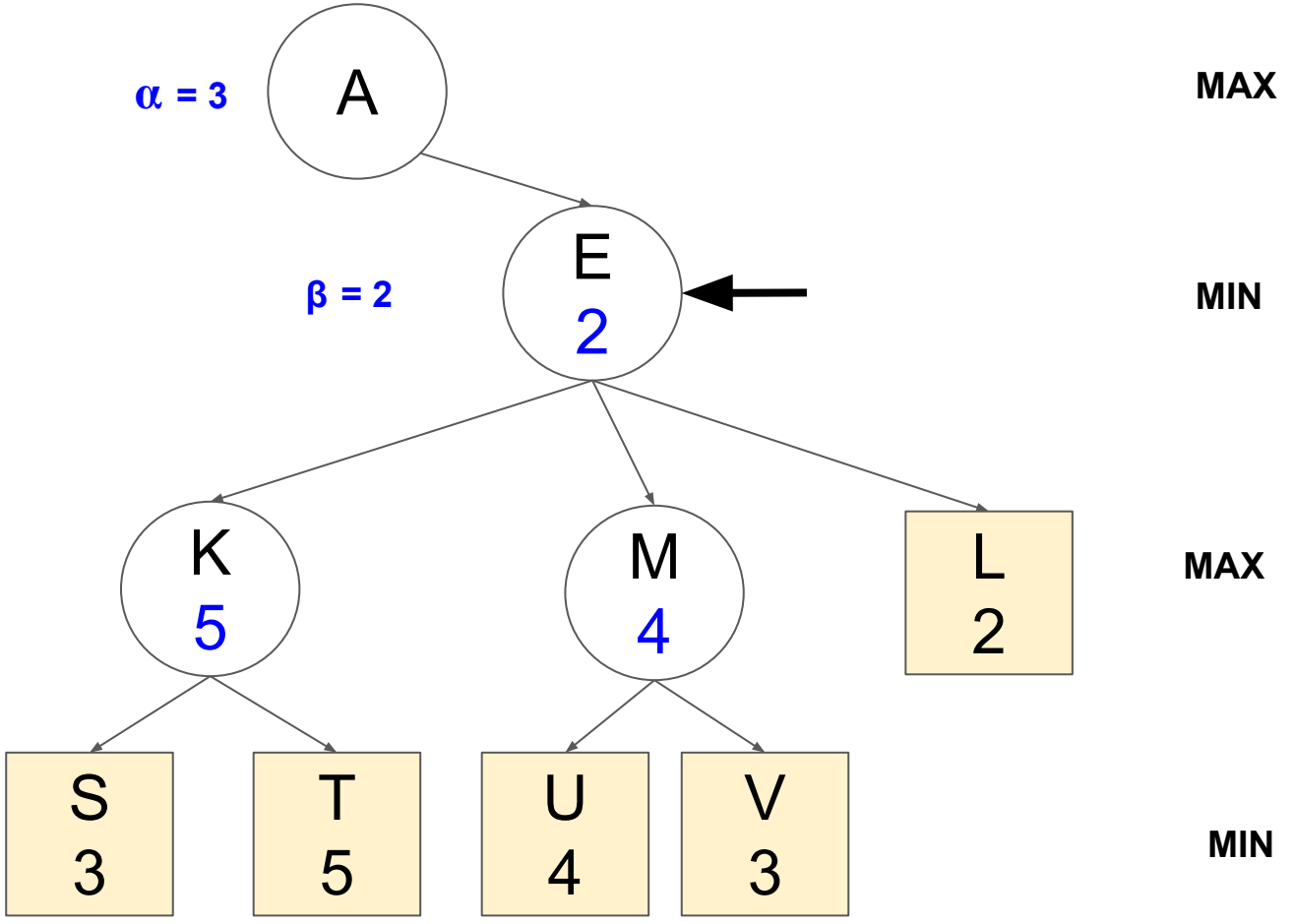
Case II



Case II



Case II



Case II