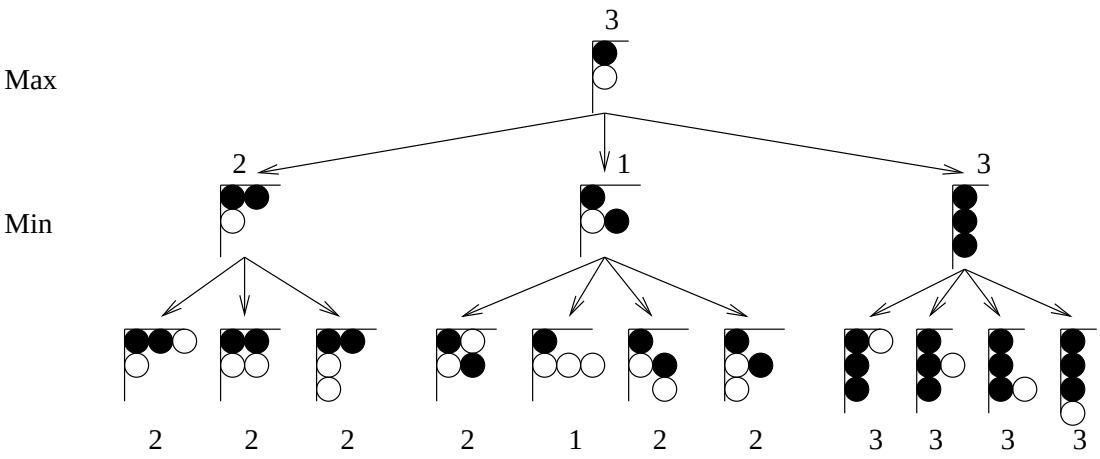
Solution to Exercises - Week 4
Intelligent Systems Programming

Exercise 1

a)



b)

3

c)

To place a black in a3

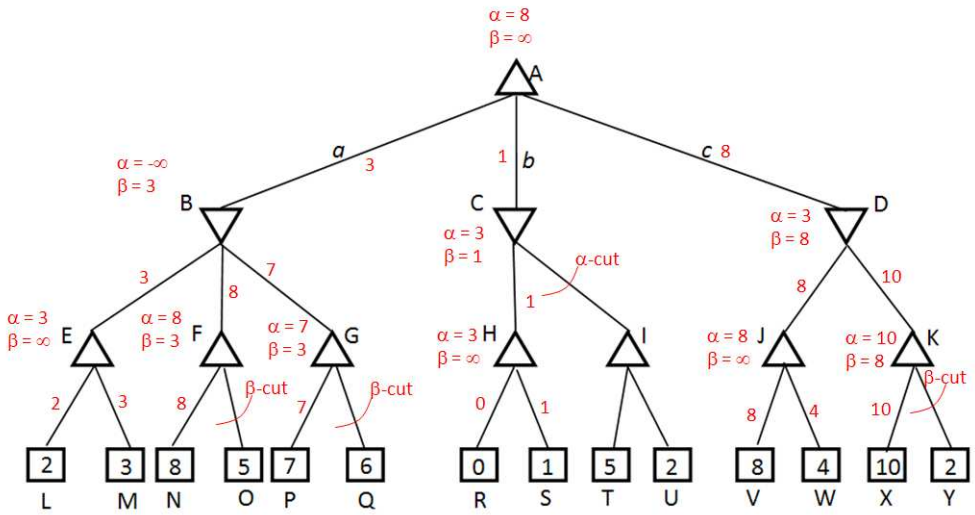
Exercise 2

a)

c

b)

O, Q, I, T, U, Y



Exercise 3

If MAX playes against a suboptimal MIN, the value returned by each MIN node will be larger than or equal to its MINVALUE. But then since MAX nodes maximizes all node values in the game tree will be larger than or equal to the MINIMAXVALUE. Thus, the utility obtained by MAX when playing against a suboptimal MIN can never be lower then the utility obtained playing against an optimal MIN, which is the MINIMAXVALUE.

Assume MIN is helping MAX and actually chooses children with maximum utility, then MAX in the game tree below should rather choose action b instead of the MINIMAXDECISION a.