iai-mandatory-2

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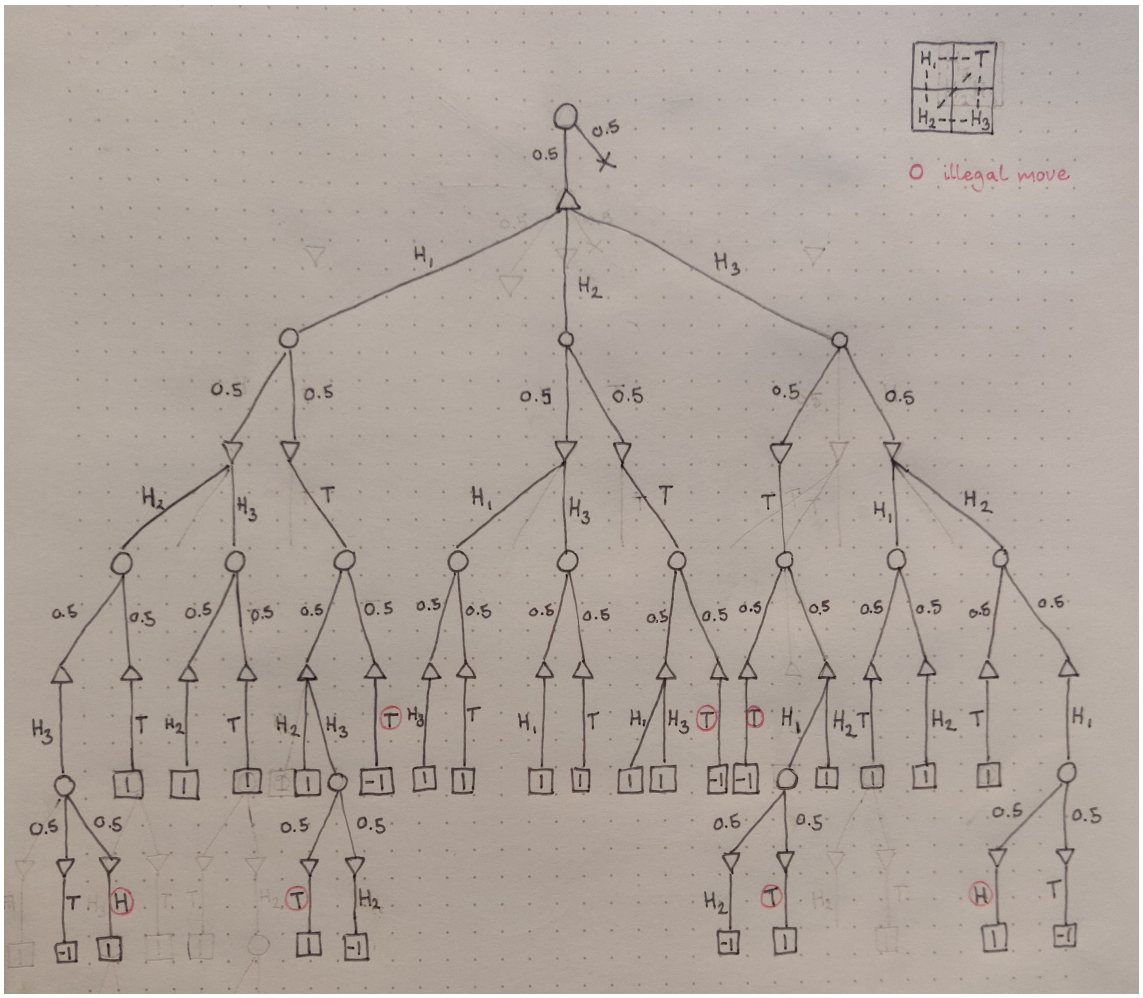
1)

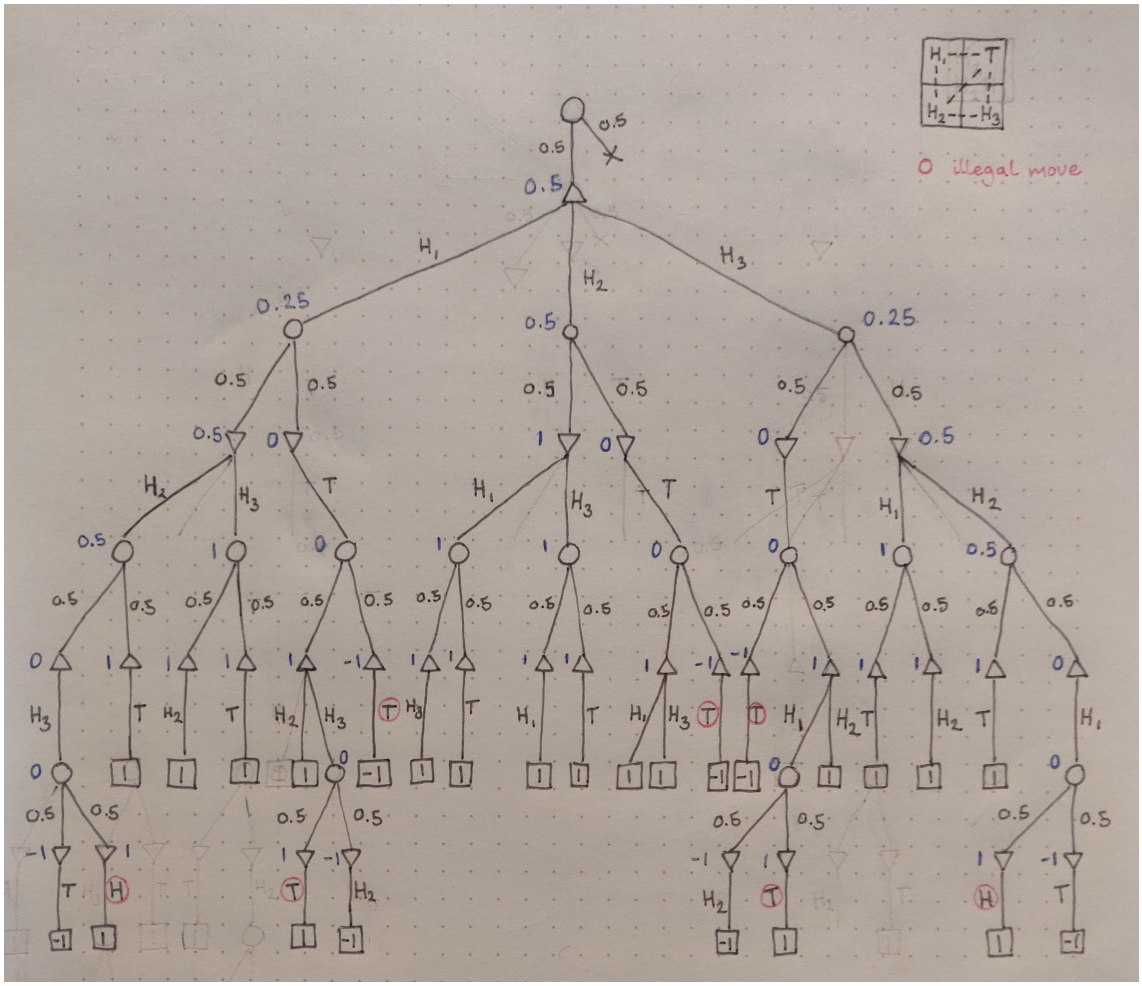
```
function ExpectiMiniMax(game, state) returns an action
    (value, move) <- Max-Value(game, state)
  return move

function Max-Value(game, state) returns (utility, move)
  if game.Is-Terminal(state) then
    return (game.Utility(state, max), null)
  v <- -INF
  for each a in game.Actions(state) do
    v2 <- Chance-Value(game, game.Result(state, a), true)
    if v2 > v then
      (v, move) <- (v2, a)
  return (v, move)

function Min-Value(game, state) returns (utility, move)
  if game.Is-Terminal(state) then
    return (game.Utility(state, max), null)
  v <- +INF
  for each a in game.Actions(state) do
    v2 <- Chance-Value(game, game.Result(state, a), false)
    if v2 < v then
      (v, move) <- (v2, a)
  return (v, move)

function Chance-Value (game, state, isMaxTurn) returns utility
  if isMaxTurn then
    v <- 0
    for each a in game.ChanceActions(state) do
      (v2, a2) <- Min-Value(game, game.Result(state, a))
      v <- v + v2 * chance(a)
    return v
  else
    v <- 0
    for each a in game.ChanceActions(state) do
      (v2, a2) <- Max-Value(game, game.Result(state, a))
      v <- v + v2 * chance(a)
    return v
```

2)

2.a)



2.b)



2.c)

Play H_2