function LMS-UPDATE(U, e, *percepts*, M, N) **returns** an updated U

if TERMINAL?[e] **then** *reward-to-go* $\leftarrow 0$
for each e_i **in** *percepts* (starting at end) **do**
  reward-to-go $\leftarrow$ *reward-to-go* + REWARD[e_i]
  U[STATE[e_i]] $\leftarrow$ RUNNING-AVERAGE(U[STATE[e_i]], *reward-to-go*, N[STATE[e_i]])
end