

Solving a POMDP model

```
using POMDPs, POMDPModelTools, QuickPOMDPs
```

```
@enum State hungry full  
@enum Action feed ignore  
@enum Observation crying quiet
```

```
pomdp = QuickPOMDP(  
    states      = [hungry, full], #  $s$   
    actions     = [feed, ignore], #  $a$   
    observations = [crying, quiet], #  $o$   
    initialstate = [full], # Deterministic  
    discount    = 0.9, #  $\gamma$   
  
    transition = function T(s, a)  
        if a == feed  
            return SparseCat([hungry, full], [0, 1])  
        elseif s == hungry && a == ignore  
            return SparseCat([hungry, full], [1, 0])  
        elseif s == full && a == ignore  
            return SparseCat([hungry, full], [0.1, 0.9])  
        end  
    end,  
  
    observation = function O(s, a, s')  
        if s' == hungry  
            return SparseCat([crying, quiet], [0.8, 0.2])  
        elseif s' == full  
            return SparseCat([crying, quiet], [0.1, 0.9])  
        end  
    end,  
  
    reward = (s,a)->(s == hungry ? -10 : 0) + (a == feed ? -5 : 0)  
)
```

