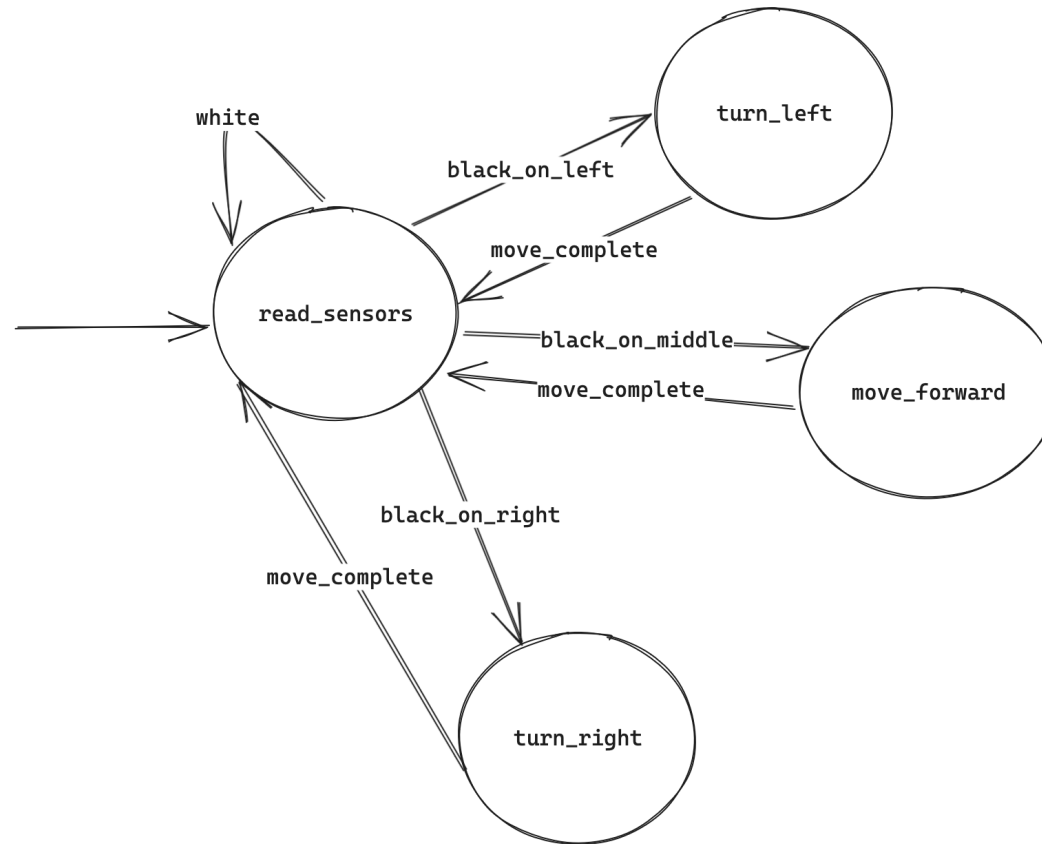


HW 01

Elizabeth Hunt

September 15, 2023

1 Question One



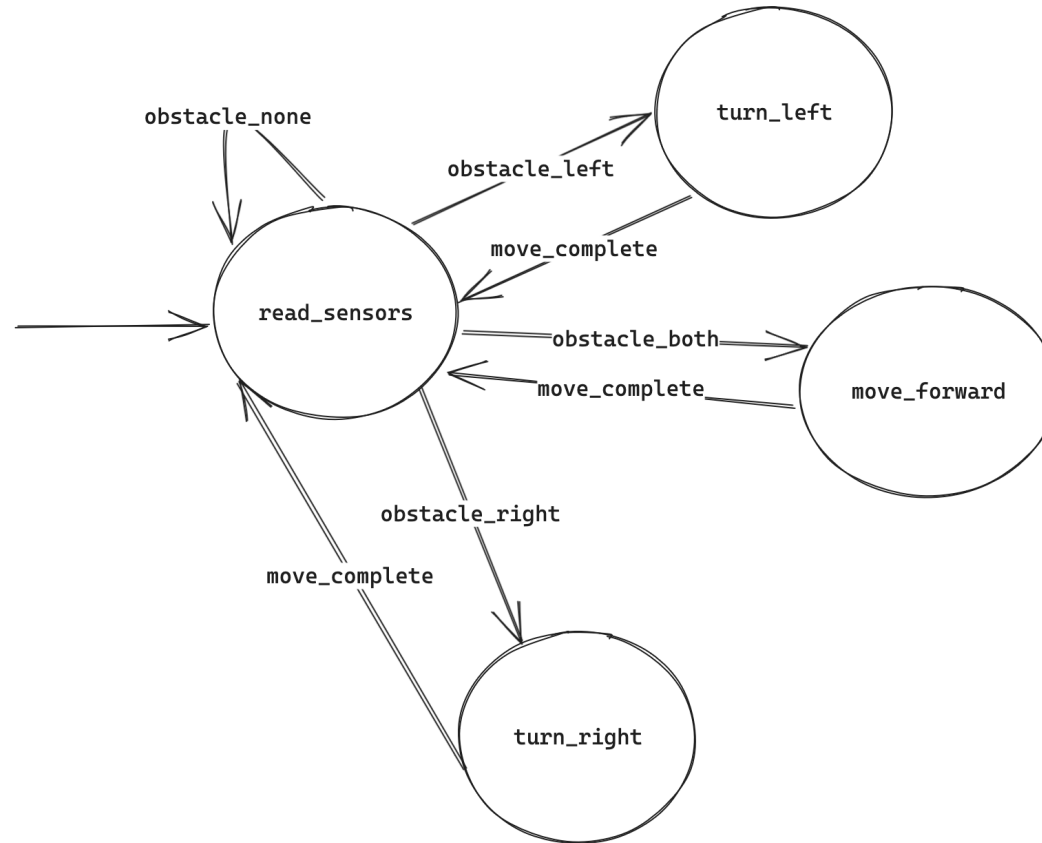
$Q = \{ \text{readsensors, turnleft, moveforward, turnright} \}$

$\Sigma = \{ \text{white, blackonleft, leftturncomplete, blackonmiddle, movecomplete, blackonright, rightturncomplete} \}$

$\delta(p_0, a) = p_0 \quad \delta(p_0, b) = p_1 \quad \delta(p_0, d) = p_2 \quad \delta(p_0, f) = p_3 \quad \delta(p_1, c) = p_0 \quad \delta(p_2, e) = p_0 \quad \delta(p_3, g) = p_0$

$F = \emptyset$

2 Question Two



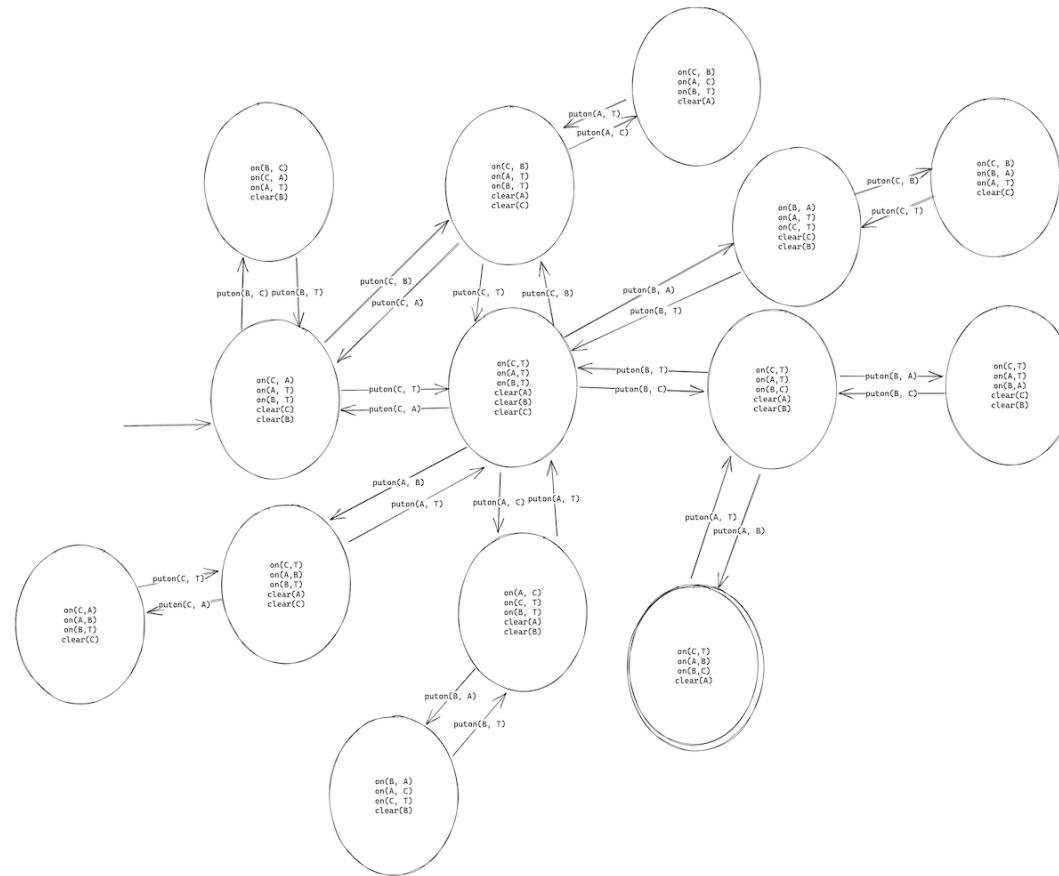
$Q = \{ \text{readsensors, turnleft, moveforward, turnright} \}$

$\Sigma = \{ \text{white, obstacleleft, leftturncomplete, obstacleboth, movecomplete, obstacleleft, rightturncomplete} \}$

$\delta(p_0, a) = p_0 \quad \delta(p_0, b) = p_1 \quad \delta(p_0, d) = p_2 \quad \delta(p_0, f) = p_3 \quad \delta(p_1, c) = p_0 \quad \delta(p_2, e) = p_0 \quad \delta(p_3, g) = p_0$

$F = \emptyset$

3 Question Three



Thus a robot could take `puton(C, T)`, `puton(B, C)`, and finally `puton(A, B)`.

4 Question Four

State	0	1	2
q_0	{ q_0, q_1, q_2 }		
q_1	{ q_1, q_2 }		
q_2	{ q_2 }		

