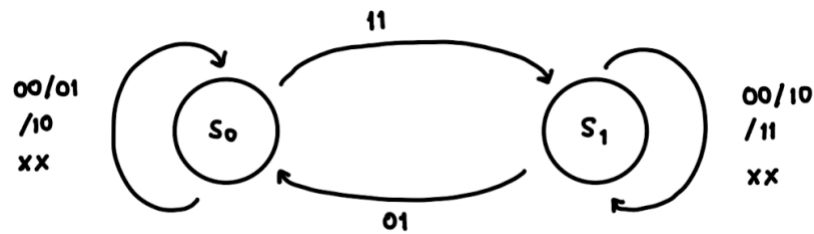


Laboratory 12: Understanding Registers - 1

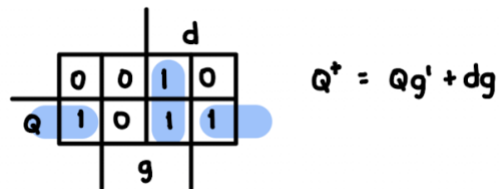
- a. Draw the state diagram for this circuit. Assume $Q = 0$ is S_0 and $Q = 1$ is S_1 .



- b. Derive the equation for Q^+ .

$$Q^+ = \bar{Q}dg + Q\bar{d}\bar{g} + Qd\bar{g} + Qdg$$

- c. Simplify the equation using Karnaugh Maps.



- d. Design the logic circuit inside the box.

