

SOEN331: Introduction to Formal Methods for Software Engineering

Assignment 1 on extended finite state machines

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1 Metro passageway formal specification

The EFSM of the metro passageway is the tuple $S = (Q, \Sigma_1, \Sigma_2, q_0, V, \Lambda)$, where

$$Q = \{locked, unlocked\}$$

$$\Sigma_1 = \{request\ entry, pass\}$$

$$\Sigma_2 = \{lock, unlock, beep\}$$

$$q_0 : locked$$

$$V : ticket = \{valid, invalid\}$$

Λ : Transition specifications

$$1. \rightarrow locked$$

$$2. locked \xrightarrow{\text{request entry [ticket is valid] / (unlock ; beep)}} unlocked$$

$$3. unlocked \xrightarrow{\text{pass / lock}} locked$$

The UML state diagram is shown in Figure 1.

2 UML state diagrams

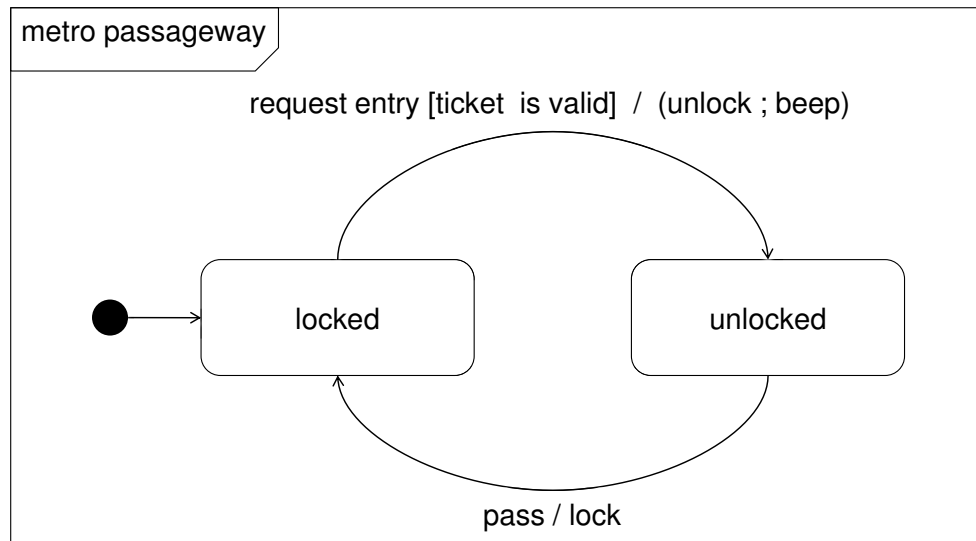


Figure 1: Metro.