# SOEN331: Introduction to Formal Methods for Software Engineering
# Assignment 2 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

$Q = \{locked, unlocked\}$

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

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

$q_0 : locked$

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

$\Lambda$: 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

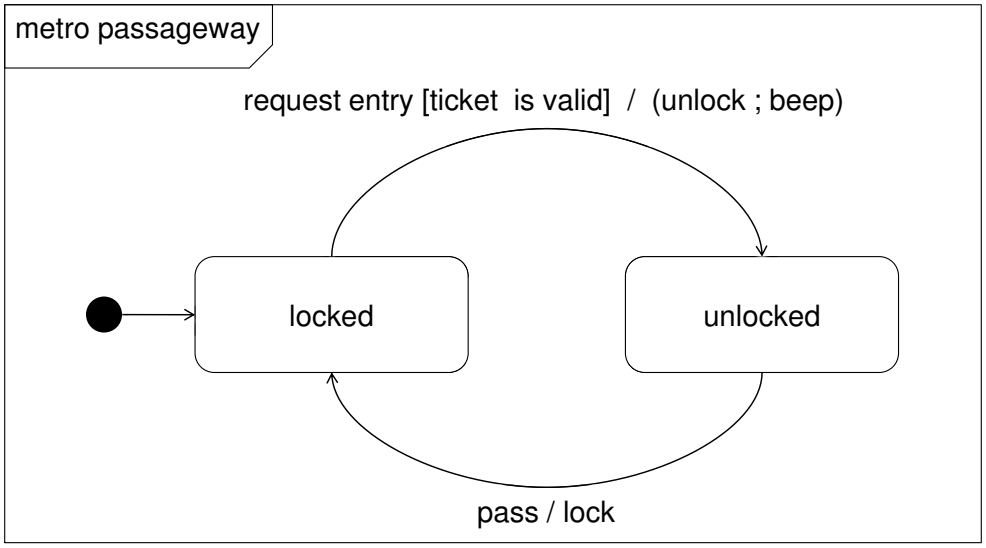


Figure 1: Metro.