

CSCI 255 – Intro to Embedded Systems
Homework #13
Fall 2013

Work must be done individually

Due: **12/4/2013** by **11:59PM** to dvalles@mtech.edu

Multi-state system: Rapid-transit with three stations

Develop the C-program multi-state system that controls the commuter railroad as depicted on the figure below.

- The starting point of the tram is always at Station A.
- The program should help to move the tram back and forth over the line, stopping at each station for **30 seconds** (use the **FiveSec()** function, you do not have to provide code for it).
- Track sensors inputs **A, B,** and **C** correspond to each station. Assume input A comes from P1.0, B from P1.1 and C from P1.2
- The tram must stop within **20 seconds** of receiving a track sensor input to keep from overshooting the platform. The conductor applies the brakes for the 20secs.
- The conductor has an override button which causes an input **OVER (P1.3)** to become true whenever it is needed to extend the 30 second-loading delay to load more passengers for **5 more seconds**.
- You will use four states: Move East (**EAST**), Move West (**WEST**), Stop moving (**STOP**), Braking during the 20-seconds from sensor input (**BRAKE**)
- Each student submits their own **.C file**

