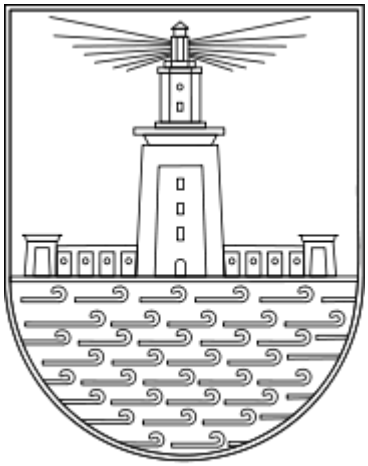

Alexandria University - Faculty of Engineering
Computer Systems Engineering Department

Lap Assignment 3 Report
Synchronization and Mutual Exclusion

Name: Abanoub Milad Nassief
Seat Num. : 6

Code Organization:

station load train(struct station * station, int count)

Invoked when a train arrives in the station and has opened its doors.

Count indicates how many seats are available on the train. The function does not return until the train is satisfactorily loaded (all passengers are in their seats, and either the train is full or all waiting passengers have boarded).

The train must leave the station promptly if no passengers are waiting at the station or it has no available free seats.

station wait for train(struct station * station)

Invoked when a passenger robot arrives in a station

Does not return until a train is in the station (i.e., a call to station load train is in progress) and there are enough free seats on the train for this passenger to sit down.

Once this function returns, the passenger robot will move the passenger on board the train and into a seat.

station on board(struct station * station)

Once the passenger is seated, it will call this function to let the train know that it's on board.

Mutex & Condition Variables

pthread_mutex_t mutex

pthread_cond_t train_arrived

indicates a train arrival (i.e available seats)

pthread_cond_t passengers_seated

indicates that the max number of waiting passengers have been seated on available seats