Elevator Simulation

Branch Naming Policy

Name the branch "iteration#-the feature you are working on"
After code review, it can be pushed to the branch "iteration#"

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Running the System

Run the FloorSystem, Scheduler, and Elevator systems, in any order. Then, run the Runner class of the Simulator system, which will begin loading from an input file located at /src/resources/inputFile.txt. Please place the input file you wish to test with at this location.

Running from Eclipse

In Eclipse, to to File -> Open Projects from File System, and select the root (3303-L4G5) folder. Then, either open or right click the files, and run them as Java Applications.

Subsystems

This Elevator System Consists of four subsystems:

Floor System

FloorSystem is responsible for simulating passenger actions on the floors of a building, and the operation of lamps. It contains an array of Floor objects, each representing an individual floor. It takes button inputs from each floor (implemented in Iteration 1 as messages from the Simulator) and sends messages to the Scheduler using a class called MessageHandler. It also controls the lamps on each floor, which indicate the direction in which elevators are moving, and which turn off when an elevator arrives.

Scheduler System

The Scheduler system acts as an intermediary between the Floor and Elevator systems, taking input from both systems and coordinating the elevator. Messages from the Floor system represent passengers requesting an elevator from a given floor. Messages from the Elevator system represent either passengers pressing a button from within the elevator to request a destination, or a notification that the elevator has arrived at a floor. This notification occurs upon arrival at any floor, and its purpose is to update the scheduler's representation of the system's state.

Elevator System

The Elevator system represents the physical elevator. It receives a message from the Scheduler, which instructs it what floor to travel to, and will move towards that floor until it reaches its destination, or is interrupted by a new instruction from the Scheduler.

Simulator System

The Simulator system reads from the provided input file and sends messages using the read data to simulate button presses within the Floor and Elevator systems.

Directory Structure

- Compiled binaries/*.class files are located in /bin.
- Documentation such as diagrams are located in /doc.
- All source code is located in /src. The subdirectories follow a structure. commonly used in Java programs, and particularly Android applications,wherein the directories spell out a reversed domain name (in this case, com.sysc3303). Within this domain package are packages for each of the subsystems, as well as commons, which contains classes used by multiple subsystems, and a Constants class.
- Test files are located in /test, and its directory structure mirrors the one found in /src.