Elevator Control System
Architectural Diagram

By: Jonah Weisse

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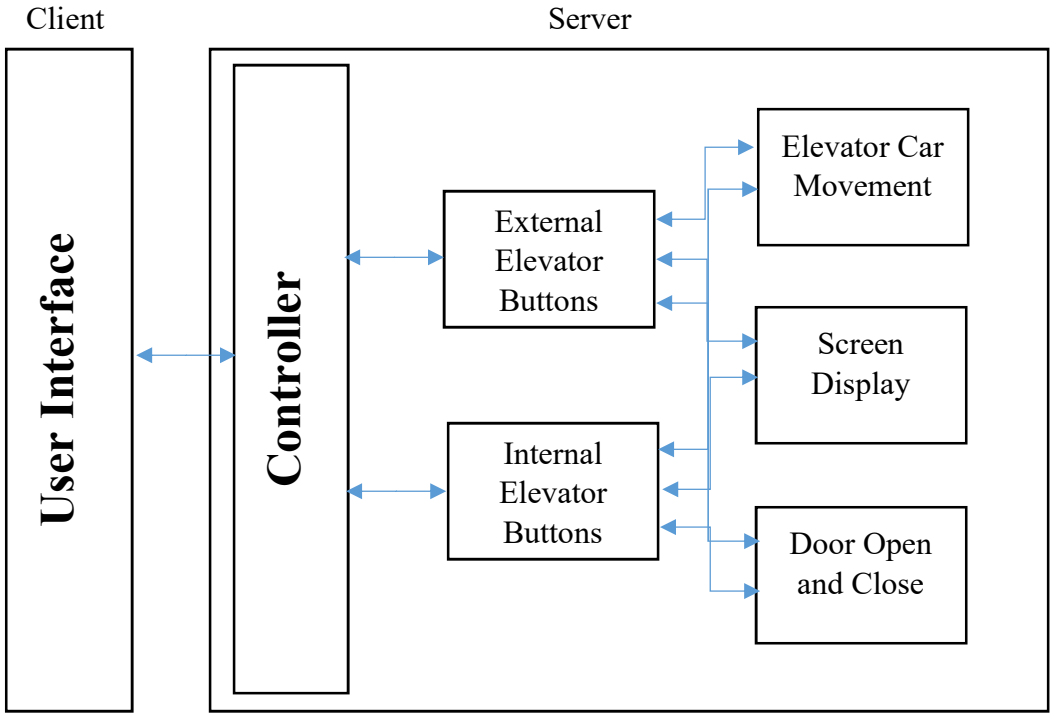

Figure 1: Architectural Diagram for Elevator Control System

The architecture of the elevator control system uses a client server style. The user interface, or the application of which the user will interact, serves as the client. Thus, the elevator's controller dictates all of its functionality. The GUI can directly interact with the elevator in two ways: through the external elevator buttons and the internal elevator buttons. Each of these buttons controls three elevator functionalities: elevator car movement, screen display, and the door opening and closing. All five of these modules are summarized below, including the references to functional requirements written in another document.

External Elevator Buttons: These buttons are responsible for moving up and down in the elevator from each of the floors (F1 and F2). They are how the user interacts with the elevator before it arrives to the user's floor.

Internal Elevator Buttons: These buttons are responsible for travel between all floors of the building (F3, F4, F5, F6). They communicate with the elevator's control system to dictate to which floor the elevator should travel.

Elevator Car Movement: This module represents the movement of the elevator up and down the building in the simulation. It is related to the functionality of watching the elevator travel (F7). It is directly controlled by the internal and external elevator buttons, as they dictate how the elevator travels.

Screen Display: This module implements how the location and direction of the elevator is displayed to the user (F8). It is controlled again by the buttons on the inside and the outside of the elevator.

Door Open and Close: This module is for the passengers to simulate getting on and off the elevator. It is related to F7, the requirement of being able to watch the elevator move as well as open and close its doors. It is controlled by a timer dictated by how long the elevator stays on a floor.

References

1. Jonah Weisse, Software Requirements Document for Elevator Control System, version 1.0, Oct 2016.