

Elevator Unified Model Language Diagram Rev. 2

Classes:

1. User
2. FloorNode
3. ElevatorController
4. SupervisoryController
5. CarController
6. ElevatorNetwork

Relationships:

Association:

- **User** interacts with **ElevatorNetwork** to send and receive commands.
- **ElevatorNetwork** interacts with **SupervisoryController** to update and retrieve status information.

Aggregation:

- **SupervisoryController** contains multiple **FloorNode** objects, which can exist independently.

Composition:

- **SupervisoryController** contains a **CarController** object, which cannot exist independently.

Dependency:

- **User** depends on **ElevatorNetwork** to send commands and pull data.
- **SupervisoryController** depends on **ElevatorController** to execute commands.
- **SupervisoryController** depends on **ElevatorNetwork** for database operations

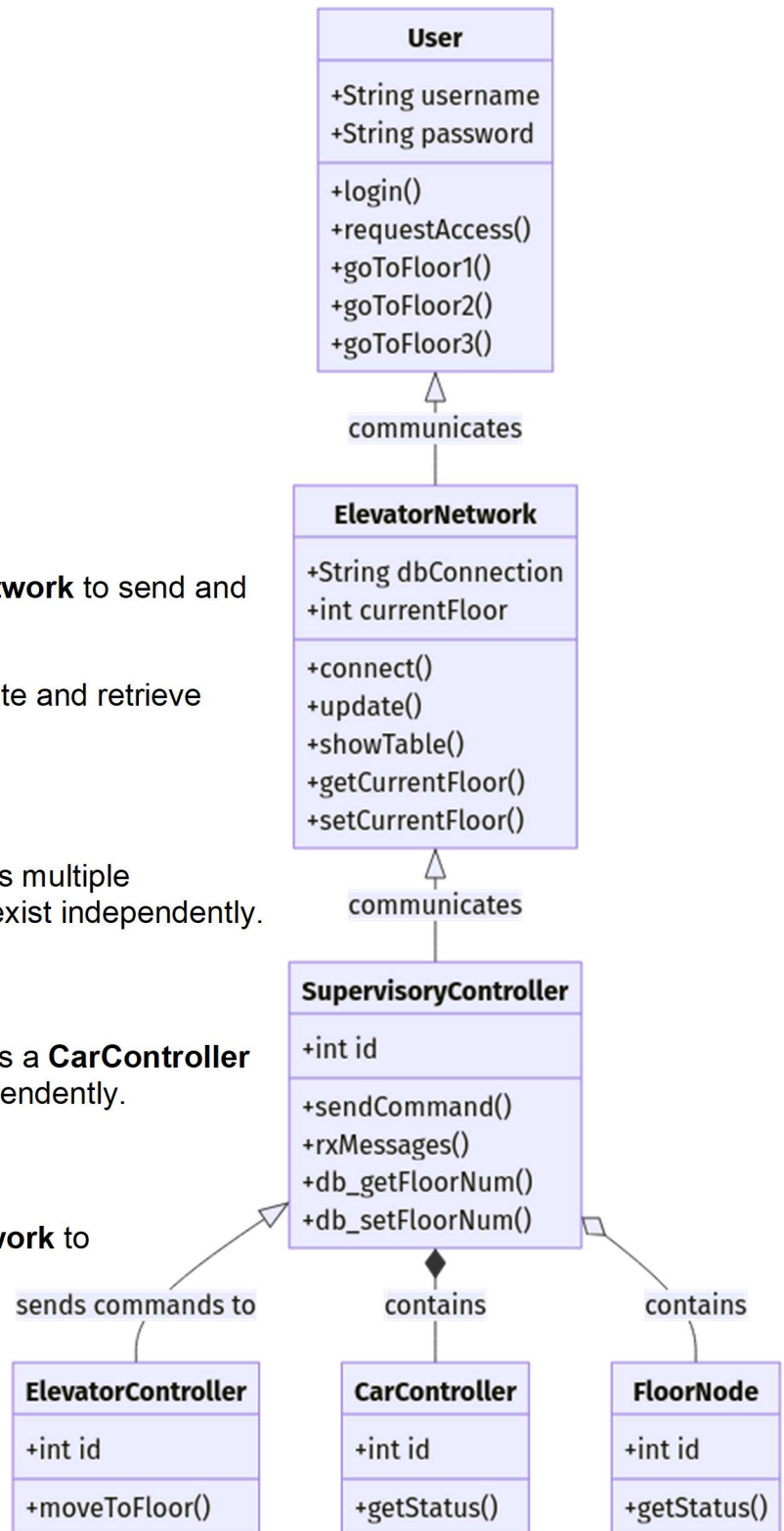


Figure 1) UML Class Diagram for php implementation of Elevator System

Attributes and Methods:**User Class:**

- **Attributes:**
 - username: Username for the user.
 - password: Password for the user.
- **Methods:**
 - login(): Authenticates the user.
 - requestAccess(): Requests access to use the elevator system.
 - goToFloor1(): Sends a command to go to floor 1.
 - goToFloor2(): Sends a command to go to floor 2.
 - goToFloor3(): Sends a command to go to floor 3.

FloorNode Class:

- **Attributes:**
 - id: Unique identifier for the floor node.
- **Methods:**
 - getStatus(): Gets the status of the floor node.

CarController Class:

- **Attributes:**
 - id: Unique identifier for the car controller.
- **Methods:**
 - getStatus(): Gets the status of the car controller.

ElevatorController Class:

- **Attributes:**
 - id: Unique identifier for the elevator controller.
- **Methods:**
 - moveToFloor(): Moves the elevator to a specified floor based on commands from the Supervisory Controller.

SupervisoryController Class:

- **Attributes:**
 - id: Unique identifier for the supervisory controller.
- **Methods:**
 - sendCommand(): Sends commands to the elevator controller.
 - rxMessages(): Receives messages from the Car Controller and Floor Nodes.
 - db_getFloorNum(): Gets the current floor number from the database.
 - db_setFloorNum(): Sets the current floor number in the database.

ElevatorNetwork Class:

- **Attributes:**
 - dbConnection: Database connection details.
 - currentFloor: The current floor the elevator is on.
- **Methods:**
 - connect(): Connects to the database.
 - update(): Updates the status in the database.
 - showTable(): Displays the contents of a table.
 - getCurrentFloor(): Retrieves the current floor from the database.
 - setCurrentFloor(): Sets the current floor in the database