CS 303

Project 2C

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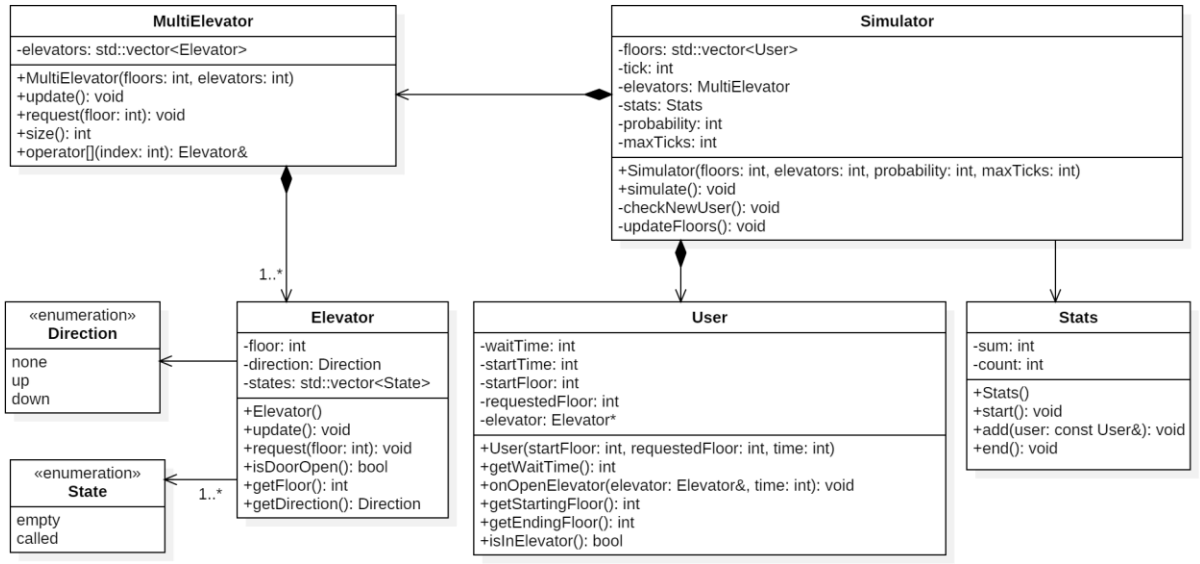
Assumptions

- User will not enter large numbers.
- Assumed that elevators have infinite acceleration
- Assumed that elevators are infinitely large
- Assumed that building will have more than one floor

UML Class Diagram



Efficiency of Algorithm

e = # of elevators
f = # of floors
n = # of ticks
u = average # of users waiting per floor, typically small

- MultiElevator
  - update: O(e * f); parallelizable
  - request: O(e)
- Elevator
  - update: O(f); possible to do O(1)
  - request: O(1)
- User
  - onOpenElevator: O(1)
- Simulator
  - **simulate: O(n * e * (u + f))**
  - checkNewUser: O(e) (due to MultiElevator::request)
  - updateFloors: O(e * u)