Beastly Heis v1.5

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January 29, 2017

Diagrams

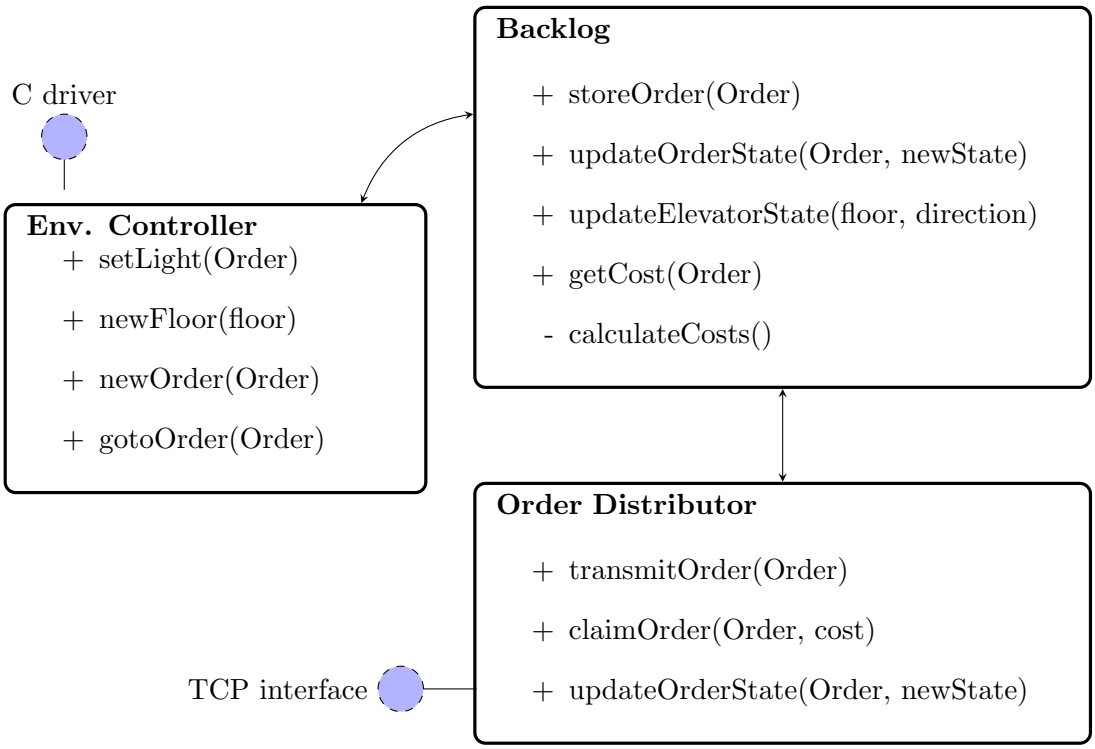

Figure 1: Module diagram.

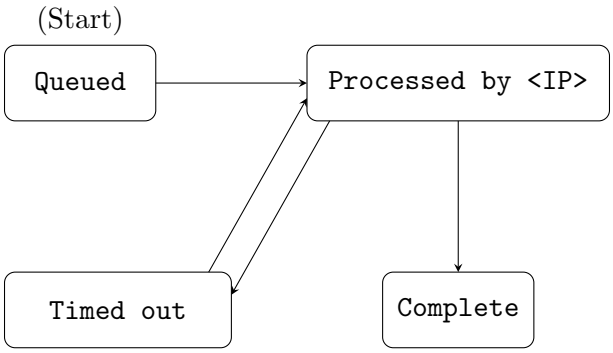

Figure 2: Order life stages.

Order object

Order	Comment
+ type	Internal / External
+ floor	Destination floor
+ timestamp	Set by computer that first received order
+ origin IP	Set by computer that first received order
+ state	Queued, In progress, Timed out, Complete

Environment Controller

+ setLight(Order)

Sets the light corresponding to the floor of an Order object.

+ newFloor(int)

Call from

+ newOrder(Order)

Function called by the C driver to inform

Backlog

+ storeOrder(Order) ok

Saves an order from either *Environment Controller* or *Communications* to the backlog. Returns acknowledgement.

+ getOrder(Order) ok

Returns to the *Environment Controller* the next most feasible order. Returns acknowledgement if such an order exists, no-acknowledgement if there are no orders.

updateOrderState(Order, newState) ok

Changes the state of an Order object. Returns acknowledgement.

+ getCost(Order) cost

Returns the cost of taking a specific order for this elevator.

- calculateCosts()

Calculates the costs of all the orders in the backlog for this elevator.

Communication

+ transmitOrder(Order) ok

Transmits an Order object to all the other nodes in the network. Acknowledges if at least one other elevator received the order transmit.

+ claimOrder(Order, cost) ok

Attempts to claim an order in the backlog. Transmits own cost of taking on this order. Acknowledges if no other elevators have a lower cost on specified order.

+ updateOrderState(Order, newState) ok

Broadcasts an order state update to ensure that the backlogs are identical.