Assignment 2 - Smart drone hangar

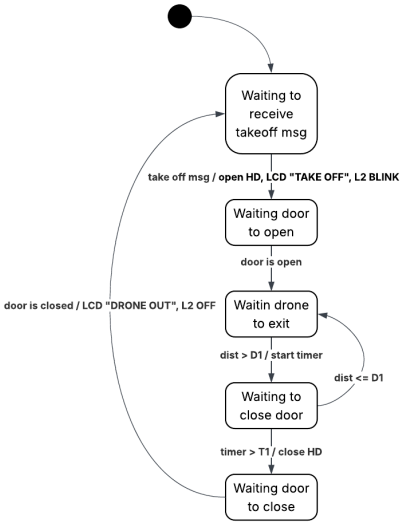
Leonardo D'Amario

Finite state machines (Modelling tasks)

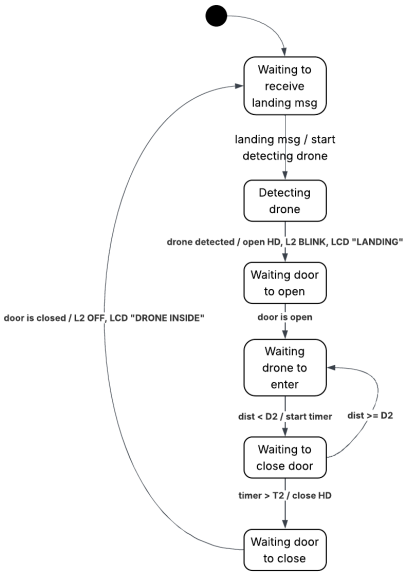
The behavior of the Smart Drone Hangar system was modeled using Finite State Machines (FSMs), meaning individual tasks managed by a scheduler in a synchronous state machine. Specifically, distinct FSMs were defined for the takeoff, landing, alarm management, and LED blinking phases.

The takeoff and landing tasks regulate the opening and closing of the hangar door in response to commands received from the DRU subsystem, utilizing presence and distance sensors to determine the drone's exit or entry. During these phases, the system provides visual feedback via an LCD and blinking LEDs modeled by the blinking task.

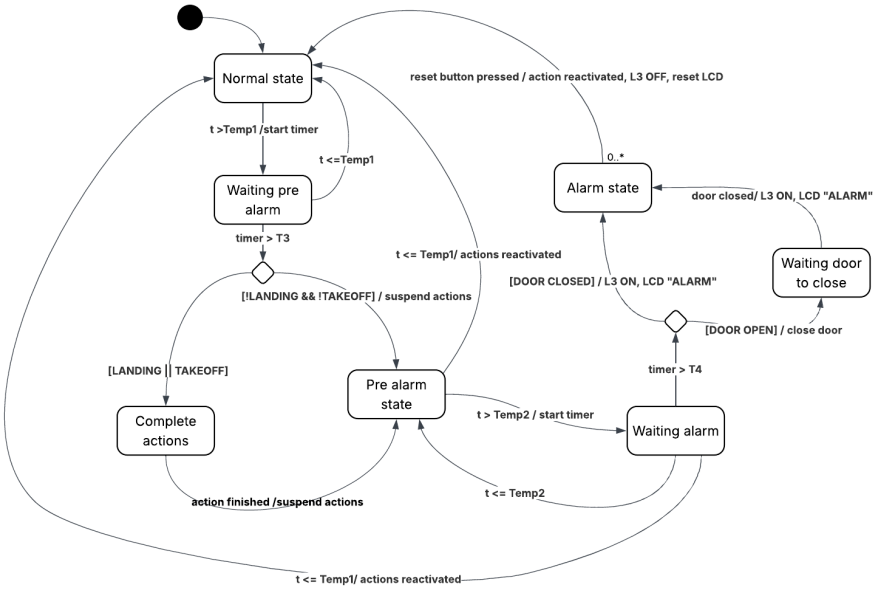
The alarm task monitors the hangar's internal temperature and introduces pre-alarm and alarm states to ensure system safety. In the event of critical conditions, operations are suspended, and the system remains locked until the operator intervenes via the reset button.



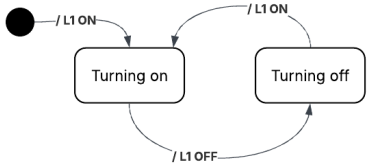
Takeoff task



Landing task

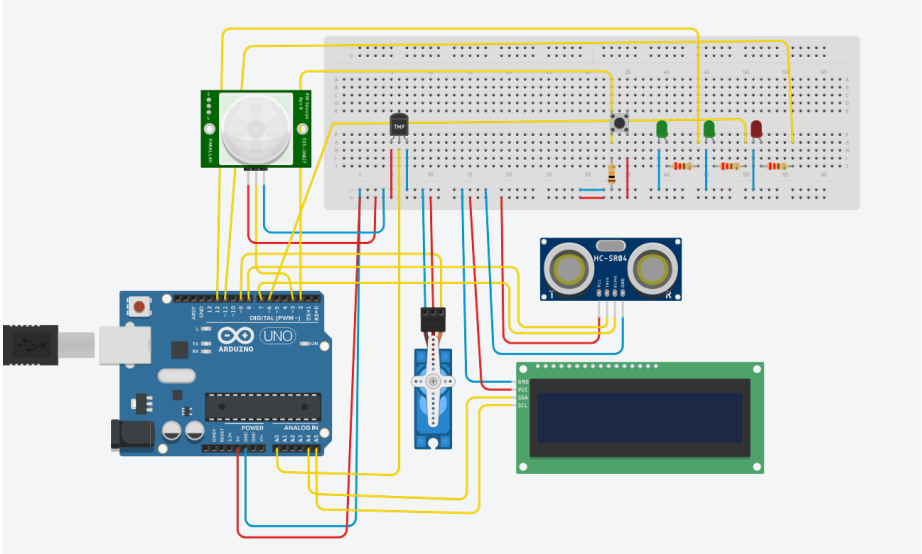


Alarm task



Blinking task

Rappresentation of the arduino schema



Blinking task