

Requirement	Verification Type	Method
1) The system shall detect when a person attempts to enter the monitored room.	Demonstration	Build video will show a user attempting entry and system detecting the action accurately.
2) The system shall detect when a person exits the monitored room.	Demonstration	Build video will show user exiting and room count being updated.
3) The system shall maintain, update, and display the current number of occupants in the room.	Test	System will be tested with multiple entries and exits; accuracy of displayed count will be confirmed.
4) The system shall indicate occupancy levels using clearly defined categories such as empty, low, medium, high, and full.	Test	System will be tested across threshold levels to confirm correct LED indicators or display messages.
5) The system shall restrict entry when the maximum occupancy limit is reached. The limit shall be configurable.	Inspection + Demonstration	Code submission will show a configurable limit. Build video will confirm entry is denied when limit is reached.
6) The system shall verify an individual's health status before allowing entry.	Demonstration	Build video will show health verification interaction using a button/sensor, prior to entry.
7) The system shall prevent entry if health verification is not completed or not passed, regardless of occupancy.	Test	Build video will show access being denied when health check is not performed.
8) The system shall provide feedback to the individual indicating whether entry is permitted or denied, based on health status and occupancy.	Demonstration	Build video will show display or LED messages clearly conveying access status.

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9) The system shall allow unrestricted exit from the room at all times.	Demonstration	Build video will confirm exit is never blocked, regardless of occupancy or health state.
10) The system shall confirm successful health verification to the individual attempting entry.	Demonstration	Build video will show "Health Check Passed" or equivalent message before allowing entry.
11) The system shall ensure that a previously passed health check expires automatically if entry does not occur within a short time frame.	Test	System will be tested for timeout behavior; delay after health check will result in denied entry.
12) The system shall update status indicators and internal state changes to response to user actions.	Test	System's display and internal states will be validated across multiple interaction sequences for accurate reflection.