

# A security system

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Design the security system for a group of buildings. The general idea is that we want to know who is in each building at any time, for fire safety regulations. We also want to ensure that only registered users can access each building.

## Required features:

- Check-in with a username and a building identifier. It should not be possible to check-in to more than one building simultaneously, or to the same building twice at the same time.
- Check-out with a username and a building identifier. It should only be possible to check out of a building you are checked in.
- Provide a live display of check-ins and check-outs.
- Provide a list per building with usernames of currently checked-in persons.

## Challenges:

- What will you do when you detect that a user has already checked in to a building – prevent the check-in, or raise an alert?
- When an inconsistent event occurs, is it better to assume that users are inside a building, or outside of all buildings?