

A-Hous

Team: SNS

The Why:

The Cambridge affordable renting programs

(<https://www.cambridgema.gov/Services/applyforaffordablehousing>), specifically the rental applicant pool and middle-income renters program, currently run on paper and pencil applications and housing connections. This service can take months for someone trying to find affordable housing for themselves or for their family who can't afford other housing options. As a result many people who qualify give up before being matched with affordable housing and this process can be incredibly stressful for someone "waiting it out." Our goal is to cut this process time in half and ease the stress of the application process for candidates, while simultaneously simplifying the amount of work for the administrators of the Cambridge affordable renting programs.

- What key purposes and social needs the project would serve and why they matter
- Outlines of key concepts describing how the app will work, including for each: name, purpose, state, actions and operational principle (but detailed specifications of actions not required).
- Why the project will involve interesting and substantive conceptual design work. In particular, you should answer these questions: 1) in what ways is the app more than just [CRUD](#), 2) how does it involve at least one concept that is not already widely used, 3) what particular design areas are likely to be challenging and why.

Why the project will involve interesting and substantive conceptual design work. In particular, you should answer these questions:

Key features:

- 1) in what ways is the app more than just [CRUD](#)?
 - Automated priority queue: based on what each person submits in their application. This will assist the admin in saving them time from having to do this manually.
 - Delayed chat box: this can ease the communication between the admin and the applicant as well as allow questions to be answered in a timely manner.
 - Housing Board: Board that displays to the accepted applicants the options for housing specific to their situation and allows them to claim one of them, and then the admin approves this claim.
- 2) how does it involve at least one concept that is not already widely used?
 - It involves a priority queue
 - Currently, the admins have to manually assign priority to applications before reviewing them.
- 3) what particular design areas are likely to be challenging and why?
 - How the listing board is curated based on users application details- because the properties for filtering are computed after application is accepted and then a listing board will be recommended or curated- so we have to figure out how to link the two concepts (application and listing board)

Concept Sketches:

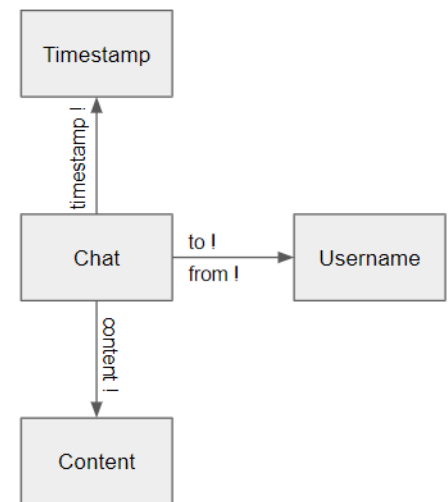
Name: Chat

Purpose: promote communication between housing listers, individuals looking for housing, and the government

Actions:

- sendMessage(content, user1, user2, timestamp)
 - New chat is created
- replyMessage(chat, content, user1, user2, timestamp)

Operational Principle: A User can sendMessage to a user with a certain username at a certain time. Once a message has been sent to them users can respond to any of their outstanding messages.



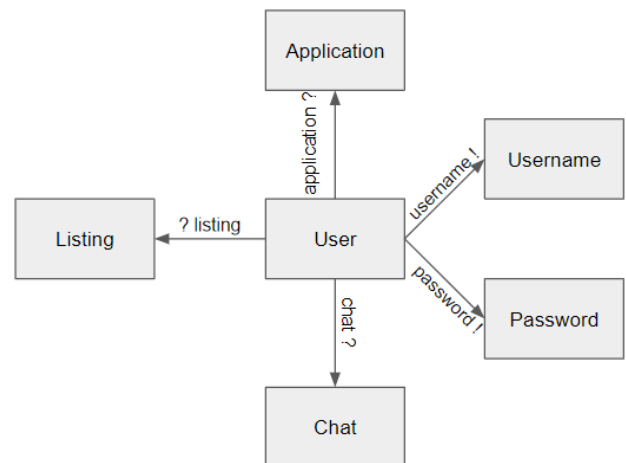
Name: User

Purpose: be a member of A-Hous

Actions:

- Chat (user1, user2)
- Chat (user1, admin)
- SetUsername(user, username: Str)
- SetPassword(user, password: Str)
- CreateAccount(user, username, password, Identification)

Operational Principle: Once a User creates an account they can sign in and chat with other Users or an Admin.



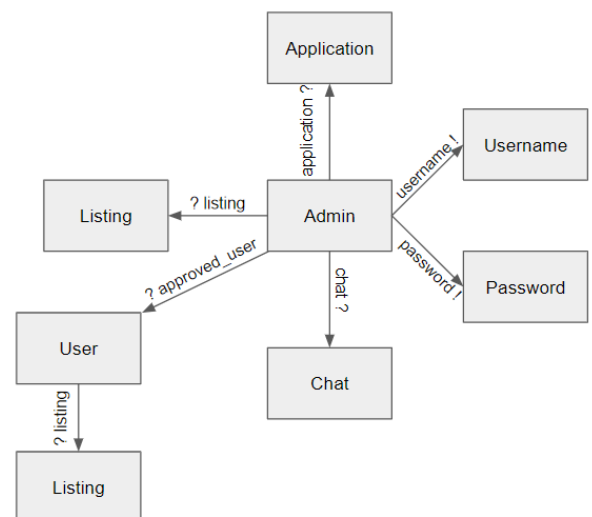
Name: Admin

Purpose: to regulate user housing applications into the program and control rental unit listings

Actions:

- Approve (application)
- Decline (application)
- List (listing)
- Delete (listing)
- postDocuments(document)

Operational Principle: An Admin needs to first list listings to be an active Admin, then they can post documents that are required for the program. Once they submit requirements, they can receive applications from users and approve or decline them. Also once a user has confirmed a listing then the Admin can delete it or delete it for other reasons.

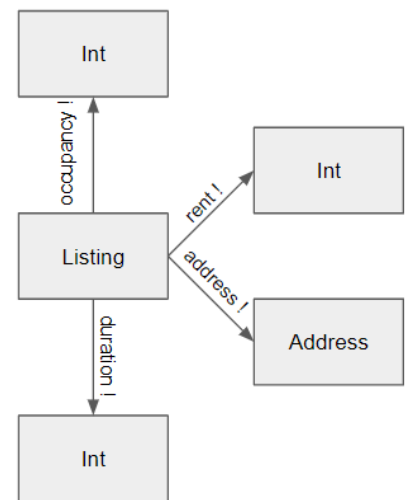


Name: Listing

Purpose: to hold/display information regarding a housing property

Actions:

- Listed (admin, address, rent, occupancy)
- Favorite (user, listing)
- View (user, listing)
- Edit (admin, rent)
- confirm(user, listing)
 - Can't change confirmation
- remove(admin, listing)
 - If user has confirmed the listing then it is removed from other people's listing boards



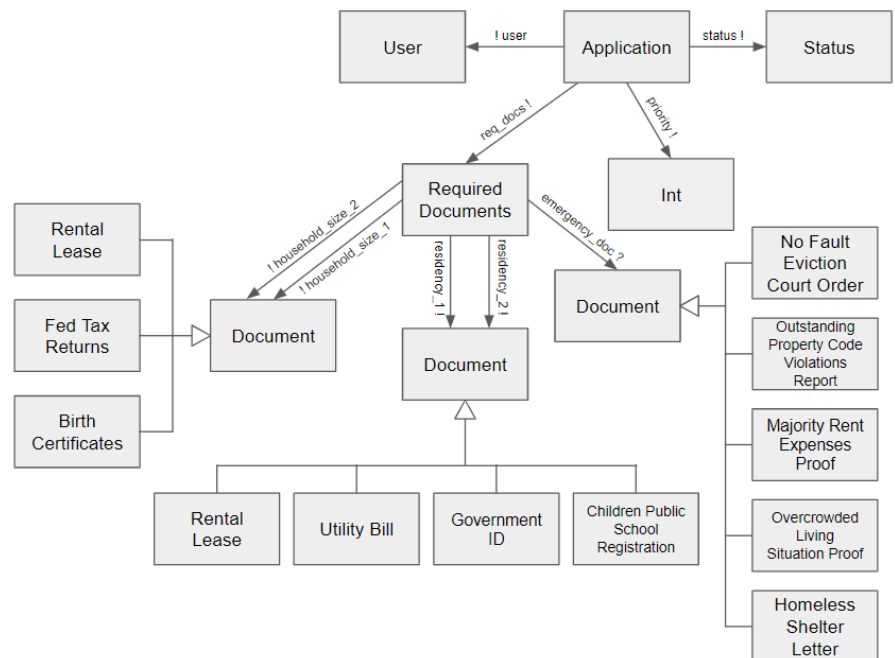
Operational Principle: Once a listing is listed it can be favorited, viewed, or confirmed by a user and can be removed or edited by an admin.

Name: Application

Purpose: ability for users to get accepted/ be eligible in the housing program (filtering mechanism)

Actions:

- Submitted (user, documents)
- viewStatus(user)
- Review (admin)
 - Review if added to document
- Accept (admin)
 - Accept if user documents are correct
- Decline (user)
- highPriority(application, user, Client)
 - This is automatically done through a sorting algorithm (based on document types/flags)



Operational Principle:

A user can submit an application and after that they can view the status. After a user submits, the algorithm in the backend will place it on a priority queue. After the user submits, the admin can review and then accept or decline the first item on the priority queue. After user submits and admin accepts or declines, application is removed from priority queue.