## **Smarta Requirements Engineering**

## **Guiding Principles Behind App Development**

* We want to ensure **regular usage** → we don’t want tenants to use this app only for finding housing
  + Social features ensure a higher usage
    - What’s going on in the complex this week?
    - Preferred communication by landlord is through the app → I have to use this app
  + Depending on how the app generates revenue (ads? Partnerships? sponsorships?
* We want to ensure using this app is **fun** and **trendy** 
  + Tailored towards college demographic
  + Optimize a solution which is fun, but without sacrificing efficiency!
* We want the app to be **usable**
  + Tons of features here → don’t want to bombard users with too much content

## **Feature Brainstorming/Overview**

## **I. Shared Features Between All Demographics**

Contract Management

* **Main Purpose:**
  + Establish an immutable contract between landlord and tenant such that the terms agreed upon prior to start of service are always available
    - Cannot alter terms or skimp on anything → everyone is accountable
* **Features:**
* Contracts signed and verified on a blockchain network
* View all ongoing contracts
* View contracts that are about to expire
* Set up reminders for contracts that are about to expire

Main application page

* **Main Purpose:**
  + Platform for connecting tenants and rent throughout the renting process
* **Features:**
* Login:
  + Automatically directs user based on prior registration as a tenant, a potential buyer touring apartments, or an employee of Smarta
* Signup:
  + Information required for signup will depend on which party they register as - tenant, tourist, or employee
* Reset Password → achieved through phone, email or app

Search Bar

* **Main Purpose:**
  + Allows users to quickly search for other tenants/landlords profiles
  + Can scan for all properties available
* **Features:**
  + User preferences that are a match with the landlord’s available listings will be available for search
  + Landlords can DM the tenants from the search feature to make an offer
  + No personal details of tenants will be revealed in the search option unless the tenants choose to respond

Splitwise:

* + **Main purpose:**
* One stop view for all housing related bills
* Helps prevent delay in payment
  + **Features:** 
    - Landlords:
      * See which tenants still owe rent
      * Get notifications at the 5th(or custom) of every month for tenants that are yet to pay their utilities for the month
    - Tenants:
      * Split utilities/grocery bills among housemates
      * Get a notification on when bills are due (custom date)
      * View rent/utilities due to landlord

Built-In Messaging Platform

* **Main purpose:**
  + Allows users to message one another
* **Features:**
  + Expand quick chat into a more feature rich messaging platform
  + Quick access instant messaging feature
    - Split into different categories - prospective tenants, current tenants, employees
    - Collapsible/Expandable bar
  + Similar to FB

Built-In Calendar/Scheduling Platform

* **Main purpose:**
  + Allows users to coordinate events
  + Landlords that host events can share these with everyone's calendar
  + Allows tenant/landowners to keep track of important dates:
    - Move in
    - Move out
    - Tour dates
    - Rent Due
* **Features:**
  + Quick access calendar showing important events for the week
* Displays all important events associated with the property:
  + Rent payments due
* Allows to schedule meetings with prospective tenants, employees, current tenants, contractors, etc.
* Event management in the calendar: check RSVPs

## **II. Landlord’s Perspective**

**SOCIAL FEATURES**

User Profile for Landlord

* **Main Purpose:** 
  + Allow tenants to get a feel for potential landlords before meeting them
  + Keeps landlords in check and gives them an incentive to maintain their professionalism
  + Promotes the idea of a social network
* **Features:**
* Contains a bio of the landlord along with a picture
* User ratings available on landlord profile. Rough rating criteria:
  + Property quality
  + Response time
  + Courteousness
  + Professionalism
  + Trustworthy
* Maybe positive social tags to judge the qualitative aspects of a person? → could be a great UI/UX feature
  + Funny
  + Friendly
  + Social
  + Hipster
  + Musician
* Award/Badge icons → landlords receive awards from Smarta! Example awards:
  + Similar to the NBA where they have player of the week/month/conference/year (MVP), we can assign awards for milestones completed over a certain time period
    - Ex. Achieved highest tenant ratings this month
    - Ex. Hosted the most community outreach events this quarter
    - Ex. Rated as “Most Helpful” among all Tenants this year
  + These icons can be available to view easily on the profile, with a separate page dedicated to showing what each award means
* Landlord preferences for tenants:
  + Smoking/non-smoking
  + Pets/no pets
  + Credit check → make sure they're good to pay rent
  + Criminal background → depends on state, slippery slope
  + Maximum number of people per room
  + [How to Choose the Best Tenant for Your Rental](https://www.thebalancesmb.com/the-right-tenant-for-your-rental-2124984)
* Fun facts about the landlord
* Shows all available properties listed under landlord

Awards Page

* **Main Purpose:** show tenants/landlords all the awards that are possible for landlords to win over a given time period
* **Functionality:** Single page showcasing all the awards possible

Points System for Landlords

* **Main Purpose:** 
  + Points are correlated to a rewards program which benefits landlords in some way
  + Incentivizes landlords to become part of their tenant community, uphold professionalism and achieve higher user ratings
    - Higher user ratings correspond to higher visibility in the Smarta system (ie. users always filter for 4-5 star ratings)
    - Higher user ratings correspond to points redeemable in the rewards program
  + Enforces the idea of a social community!
* **Features:**
  + Host a community event to achieve reward points
    - Event hosted will be shared on every tenants Smarta calendar
    - Verifiable based on number of tenants that accept the event/rate the event
  + Milestone tracker
    - Landlords can view all the rewards available to redeem from the system
    - Can track how many points they have in relation to redeemable rewards

**MANAGEMENT FEATURES**

Property Management Dashboard

* **Main Purpose:**
  + View all high level details/statistics regarding property
* **Features:**
* View all high level details/statistics regarding property
  + All properties/units owned
  + Number of units occupied/empty
  + Property market value + appreciation rate
  + Total monthly/yearly earnings
  + Profit margin for the month and a graph of profit trend over the year
  + Percentage of renters that paid for the month/did not pay for the month
  + Cost of fixing property issues
  + Quick status update codes on issues being fixed
* Easy access chat feature to message tenants, contractors, employees
* Navigation bar which allows owner to navigate to other tabs pertaining to different topics (Navigation bar present during all times in the app)

Property Maintenance Tab

* **Main Purpose:**
  + Displays all statistics related to property issues
  + Serves as a project management tab for all issues, contractors, preference management, etc.
* **Features:**
* Display high level stats: number of total issues, severity of each issue, issues being actively worked on and issues completed
* Issue PM → estimated cost/timeline of each issue from occurrence to resolution
  + Shows which employee/outsourced contractor is working on issue
  + Status updates provided by employee/contractor
  + Equipment requisitioned to fix issue along with associated cost
  + Issues which have exceeded estimated time/budget and by how much
* Contact information for outsourcing solutions to specific issues
* Issue preference management:
  + Issues automatically assigned as a first come first serve system, tacking on issues to appropriate employees workload
  + Based on severity of the issue and tenant complaints, property manager can prioritize automatically scheduled issues
  + Changes issue management structure from first come, first serve to priority based queue based on property managers discretion

Accounting and Operations → managing all expenses related to properties

* **Notes:**
  + Can probably use QuickBooks API for this as property owners typically use Quickbooks: [https://developer.intuit.com/app/developer/qbo/docs/develop](https://meet.google.com/linkredirect?authuser=0&dest=https%3A%2F%2Fdeveloper.intuit.com%2Fapp%2Fdeveloper%2Fqbo%2Fdocs%2Fdevelop)
* **Main Purpose:**
  + This tab is used to manage all finances related to owners properties
* **Features:**
* Income
  + View which units have paid rent for the month/year upto current time
  + View any outstanding payments of each unit
  + Profit margin for the month and a graph of profit trend over the year
  + Quick access chat bar to send tenant notification of overdue payment
* Expenditure:
  + Mortgage payments
  + Insurance: liability and property coverage
  + Utility payments
  + Employee salaries
  + Incidental costs → mainly repairs
  + Maintenance → upkeep of the estate
  + Upgrades

Tenant Management

* **Main Purpose:**
  + This tab is used to manage all tenants renting the landlord’s properties
* **Features:**
  + Information on all tenants within property
    - Name, email, phone number, citizenship, etc. of each tenant
    - Number of people in each unit
    - Record of rents paid on time/missed payments
    - Written tenancy agreements
    - “Contact all” mass messaging feature
    - Section for all issues submitted by tenants
  + Prospective tenant communication:
    - Contains contact information of each tenant that toured Smarta units
    - Rating/feedback system from prospective tenants on what they liked/disliked about units → provides some reward for substantial feedback

Employee Management

* Add a new employee into the system/managing existing ones
* Employee statistics:
  + Tickets pending, active, completed
  + Full time/part time contract details
  + Work history → success/failure rates of completing tickets on time
    - Performance bonuses/rewards to encourage quick issue resolutions?
  + Weekly status updates
  + Contact information, salary, vacation days
* Contractor statistics:
  + Contact information for different contractors
  + Rates, completion times, specialties
  + Contractors issued to tickets along with associated costs
  + Work agreements

## **III. Tenant’s Perspective**

**SOCIAL FEATURES**

User Profile for Tenants

* **Main Purpose:**

Let’s users set preferences and give personality quizzes

* **Features:**
  + Contains ratings, preferences and current living status(currently looking etc)
  + Preferences:
    - Number of bedrooms
    - Rent range
    - Smoker/Non smoker
    - Area
    - Lease length
    - Pets/No pets
    - Lease per house/per bedroom
    - Checkbox for whether or not landlords can contact you
  + Personality quiz (optional in case roommate finder is needed)
    - House parties every weekend → Hates people
    - Taste in movies/music/books
    - Food preferences
    - Workout schedule
    - Plays an instrument

Surveys

* **Main Purpose:**
  + Get feedback to improve product/rate property
* **Features:**
  + **TBD**

Points System for Tenants

* **Main Purpose:** 
  + Gamify the community aspect of Smarta for the tenants. Ensure constant use of the application
  + Build strong Smarta communities by facilitation frequent interaction among tenants and landlords
* **Features:**
* Points can be gained for:
  + Renewing a lease with another Smarta housing
  + Attending community events (Attendance can be noted through scanning phone QR codes)
  + Receiving positive landlord reviews
* Points can be redeemed for:
  + Reduction in payable deposit
  + GoPuff/Instacart/Postmates/Doordash vouchers

Roommate Finder

* **Main Purpose:** 
  + Help tenants match with other roommates looking for housing
* **Features:**
  + Tenant gives a personality quiz
  + Tinder like roommate matching
  + Chat option for matches

**MANAGEMENT FEATURES**

Shortlists

* **Main Purpose:** 
  + Shortlists can enable tenants to view and narrow down options for roommates as well as houses
* **Features:**
  + Apartment shortlists
    - Tenants can star apartments that they shortlist
    - Notes can be added to the shortlist
  + Roommate shortlists
    - Tenants can shortlist roommates they are looking for
    - Notes/emojis can be added in the shortlists

Budgeting

* **Main Purpose:** 
  + The Splitwise feature already accounts for the tenant’s expenditures. Adding a budgeting features allows the tenants to consolidate all other living expenses onto a single page.
* **Features:**
  + Combined with splitwise
  + Add expenses other than rent/utilities

Subleases

* **Main Purpose:** 
  + To make it easier for college students to look for tenants to sublease their apartments
* **Features:**
  + Tenants can sublease their apartments for a certain period of time
  + Tenants can search for other tenants using the search feature.
  + After a sublease is sound, the tenant can send the profile to the landlord for approval