Online Marketplace Requirements Prescription

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Overview:

The following requirements are features or behaviors that the system-to-be must have in order to attend to the needs described in the Domain Description. These requirements are what will dictate the specific technologies to be incorporated in the system-to-be, and the software design in large part.

Requirements:

- Business process reengineering
    - The system-to-be must centralize rental listings to reduce the reliance on fragmented sources such as social media, classifieds, and word-of-mouth.
    - The system-to-be must streamline communication between students and landlords through a direct messaging feature, reducing delays in inquiries and responses.
    - The system-to-be must improve rental transparency by standardizing listing details, thus providing a comparison system for potential tenants. Some required fields are price, lease terms, utilities, and date range.
    - The system-to-be must provide security by implementing a landlord verification process to reduce fraudulent listings.
    - The system-to-be must provide a reporting system for users to flag misleading or suspicious listings to improve listing reliability.

- Domain requirements
    - The system-to-be must comply with local housing laws and respect tenant rights.
    - The system-to-be must account for common rental periods that align with the university semester schedule.
    - The system-to-be must recognize that rental agreements often require security deposits and sometimes co-signers.

    - The system-to-be must support short-term (semester-based) and long term (yearly) rental agreements.
    - The system-to-be must consider the fluctuating availability of housing due to high-demand periods before each semester.
    - The system-to-be must accommodate at least one payment method, such as a payment app or bank transfer.

- Interface Requirements
    - The system-to-be must allow registered users to create, update, read, delete roommate listings, including details such as total roommates to split costs between, availability date, and contact information.
    - The system-to-be must integrate a payment gateway to facilitate secure online transactions.
    - The system-to-be must provide a structured user interface where students can filter housing listings by various criteria such as price, location, number of bedrooms, and availability.
    - The system-to-be must allow landlords to create, update, and manage property listings through an intuitive dashboard.
    - The system-to-be must include a secure messaging system to facilitate direct communication between landlords and tenants, with notifications for new messages.
    - The system-to-be must ensure that listing details remain up to date by allowing landlords to modify availability, pricing, and additional property details in real time.
    - The system-to-be must provide a user authentication system, requiring email verification for both students and landlords to enhance security.
    - The system-to-be must integrate a feedback system where tenants can leave reviews for landlords and vice versa to promote transparency and accountability.
    - The system-to-be must integrate a mapping service to show available properties on the map.
    - The system-to-be must offer a mobile-responsive design to ensure a seamless experience across devices.

- Machine Requirements

- The system-to-be must handle up to 10 concurrent users without performance degradation and provide a plan for scaling up to 100 concurrent users as needed.
- The system-to-be must synchronize all new apartment listings and listing updates (e.g., availability and pricing) across user devices within 1 minute in 95% of cases.
- The system-to-be must store and manage user profiles, apartment details, and transaction history securely using encrypted storage and role-based access control.
- The system-to-be must detect and prevent duplicate apartment listings by analyzing property metadata, including address, landlord ID, and listing title.
- The system-to-be must maintain 99.9% uptime, monitored through automated uptime tracking tools and backed by a redundancy system.

Note: This document is subject to change as project focus changes.