INFO500 – FINAL_PROJECT_PROPOSAL: TEAM 72

Proposal approved by Siddharth Dash

DEEPAK KUMARAN THOPPUDU SUDHARSANAN - 002050934
SNEGHASHREE THANGARAJU - 002050508
SHREE NITHYA SARVEPALLI - 002304058

Student Housing Management System

Problem Statement

Finding suitable housing for students near universities is a challenging process. Students often struggle to discover affordable accommodations with the required amenities while balancing academic responsibilities. Similarly, landlords and brokers face inefficiencies in connecting with potential tenants, managing listings, and scheduling tours or appointments. Furthermore, the lack of an integrated marketplace for buying/selling student essentials adds to their challenges.
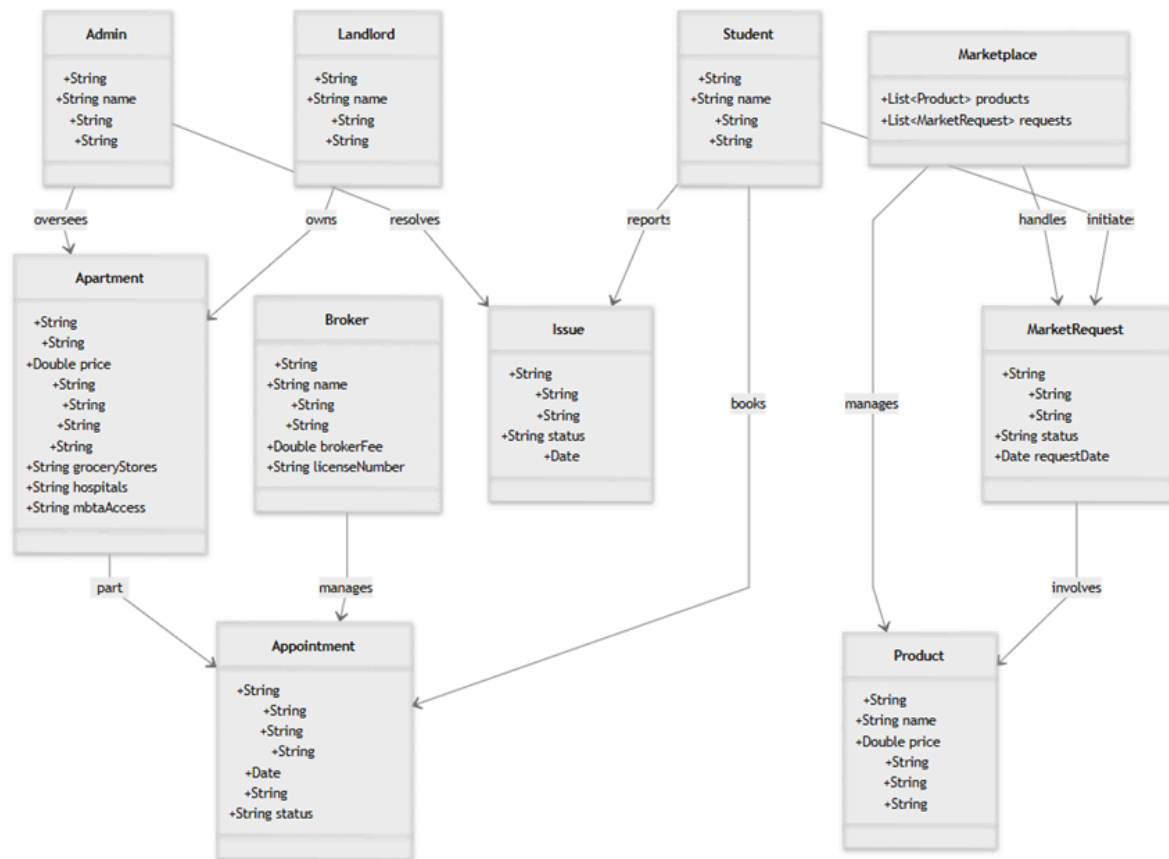
Solution

The Student Housing Management System is designed to bridge the gap between students, landlords, brokers, and university administrators. The system provides the following functionalities:
 - For Students:
   * View available apartment listings.
   * Schedule house tours and broker appointments.
   * Raise issues and view reported issue statuses.
   * Access a marketplace for buying/selling products.
 - For Landlords and Brokers:
   * Manage apartment listings.
   * Respond to student requests for house tours or appointments.
 - For University Admins:
   * Manage student records.
   * Facilitate support for housing and marketplace issues.
 - For Tech Support:
   * Handle reported issues and resolve them efficiently.

 This centralized solution ensures seamless communication and efficient operations among all involved parties.

High-Level Component Diagram:

Admin
+String
+String name
+String
+String

Landlord
+String
+String name
+String
+String

Student
+String
+String name
+String
+String

Marketplace
+List<Product> products
+List<MarketRequest> requests

oversees · owns · resolves · reports · handles · initiate

Apartment
+String
+String
+Double price
+String
+String
+String
+String
+String groceryStores
+String hospitals
+String mbtaAccess

Broker
+String
+String name
+String
+String
+Double brokerFee
+String licenseNumber

Issue
+String
+String
+String
+String status
+Date

MarketRequest
+String
+String
+String
+String status
+Date requestDate

books · manages

part · manages · involves

Appointment
+String
+String
+String
+String
+Date
+String
+String status

Product
+String
+String name
+Double price
+String
+String
+String

Ecosystem Hierarchy

Roles

1. Students:
   - View housing listings.
   - Book appointments with brokers or landlords.
   - Report issues and use the marketplace.
2. Brokers:
   - Manage listings and handle student appointments.
3. Landlords:
   - Own and manage apartment listings.
4. University Admins:
   - Oversee housing operations and student records.

5. Marketplace Admins:
   - Oversee buying and selling operations.
6. Tech Support:
   - Handle reported issues and provide solutions.
7. Head Realtor:
   - Manage brokers and ensure operational efficiency.
8. System Admin:
   - Ensure smooth functioning of the entire platform.

Organizations

The system operates across the following 6 organizations:
1. University Housing Department:
   - Ensures student housing needs are met.
2. Real Estate Firms:
   - Provides brokers and landlords to list properties.
3. Marketplace Operators:
   - Facilitates buying and selling of student essentials.
4. Technical Support Services:
   - Resolves reported issues.
5. Community Networks:
   - Helps students interact and share resources.
6. System Administration Unit:
   - Manages the technical infrastructure and operations.

Enterprises

The 4 enterprises involved in the system include:
1. Educational Institutions:
   - Partner with the platform to assist students with housing.
2. Real Estate Firms:
   - Collaborate to provide properties and manage listings.
3. Tech Support Companies:
   - Handle platform-related issues and ensure smooth operations.
4. Marketplace Providers:
   - Facilitate student transactions for essential goods.

Networks

The platform operates through 3 main networks:
1. Housing Network:
    - Connects students, landlords, brokers, and university admins for housing-related activities.
2. Marketplace Network:
    - Links students for buying and selling items.
3. Support Network:
    - Resolves reported issues through tech support and administrative oversight.

Use Cases:

1. View Apartment Listings: Students browse listings based on apartment type and location.
2. Schedule Appointments: Students book house tours or broker meetings. Brokers and landlords approve or deny requests.
3. Report Issues: Students report problems with housing or appointments. Tech support resolves issues and updates statuses.
4. Marketplace Operations: Students list products for sale. Other students view and purchase listed items.