

Question 1 Overview

1.1 Propose an internal title for your project. This is not about marketing, advertising, or attracting users. Rather, I want a descriptive title that summarizes what your project is about. It can help you scope the project, and also it can help course staff remember or figure out in 5 seconds what the project is about throughout the term.

School dormitory allocation system

1.2 What is the context and what problem is the project aiming to solve?

Create an allocation system to assign each student who applies for a hostel to a hostel that has a suitable environment and good roommates. Each unit has three bedrooms and can accommodate up to two people per bedroom, with each unit sharing a kitchen, bathroom and laundry. Students will be allocated to the same bedroom/unit by the system, taking into account their living experience and gender. For example, students of different genders will not be assigned to the same bedroom, students who live less than two hours apart may become roommates, and students with pet habits will not share the same unit with students who are allergic to pets. In summary, the goal of this project is to create an allocation system for hostel providers that will attract students to move in while also providing convenience for them.

1.3 Describe 2 other projects envisioned and one reason for not choosing to pursue them.

- Training scheduling system for gyms: A system that displays the bookings for different areas of the gym at different times of the day, allowing fitness enthusiasts to choose the training time that suits them and thus maximize the benefits of their workout. This idea was not adopted as the constraints of the conditions were less clear.
- Pet clinic appointment system: A system of assigning animals to doctors for a new established small animal clinic formed by glass doctor office which cats refuse to be treated in the consulting room adjacent to dogs and so on. After discussion, we think this scenario is divorced from reality.

1.4 Has a variant of this project ever been done before?

No. The current system of assigning students to halls of residence is mainly by free choice (without prior information about others) or by random assignment by the accommodation provider simply by gender, with some halls of residence being assigned to students according to their major.

Question 2 Prototyping phase

The objective of this section is to ensure that the project you are proposing has enough substance that it could serve as for Project B.

2.1 What constitutes an input instance to your problem?

Unit number, bedroom number, id and preference information for intended and existing residents

2.2 How will you get sample data to help test your implementation?

We will establish a virtual data set to simulate the actual appointment scenario of the dormitory allocation

2.3 What constitutes a candidate solution to your problem?

The candidate solution is to allocate a room for all intended residents

2.4 Presumably, a solution to your problem needs to satisfy several properties or constraints. State two sample constraints that any solution should satisfy.

Example constraints include "Gender constraint: students of different genders cannot be allocated to the same room" and "Room capacity constraint: if two students are allocated to the room, no other student can be allocated to the room until at least one student has checked out"

Question 3 Production phase

3.1 Who are the target users of the system?

The system targets student residences or boutique social housing with a similar business model

3.2 Where will the actual data used for the production system come from?

The actual usage data will be derived from the room information already in the system, the existing tenant information and the data in the prospective tenant information table, where the prospective tenant information table covers all the information required, including gender, lifestyle etc.,

Question 4 Self Evaluation

List the contribution(s) of every group member to Project A and self-evaluate every member for up to 2 mark. Example contributions can include but are not limited to brainstorming, determining the problem, its scope, writing up this document and/or other notes.

Name	zID	Contributions	Self-attributed mark
Bowen Su	Z5241634	Presented the idea of training scheduling system , participated in discussions and text revisions	2
Zemu Zhang	Z5389160	Presented the idea of pet clinic appointment system , participated in discussions and text revisions	2
Qiyao Zhou	Z5379852	Presented the idea of school dormitory allocation system , participated in discussions and text revisions	2