

COMP3900 Project Proposal

UNSW



Cocorico Accommodation Booking Web Portal

Term 3, 7 Oct 2019

Authors:

Ziming Zheng (z5052592) Scrum Master

Shunyang Li (z5139935) Product Owner

Chenming Fan (z5125807)

Li Ding (z5138091)

Background

The state of New South Wales is always the primary destination for people who would like to travel to Australia and tourism is one of the top three industries in New South Wales. With technology growth and ubiquitous internet access, travellers tend to design their own itinerary and routes at home. Therefore, they would like to book their accommodations online.

The online accommodation booking platforms nowadays can connect between accommodation managers and travellers more closely. The platforms are able to allow accommodation managers to post their accommodation information, and travellers can explore the details of accommodation online and make the booking more easily. Also, in recent years, a new business model called “home-sharing” has emerged rapidly, led by the “home-sharing” platform giant Airbnb. Hence, more accommodation booking platforms can accept residential accommodations as well, and more households participate in this new business model to gain profits.

Existing User Experience Issues & Potential Improvement Ideas

During our brainstorming process, we reviewed websites like Expedia, Stayz, Trivago, Flight Centre and Airbnb. We summarised what areas we can improve in terms of better user experience. Here are three improvements we would like to implement in our project. The limitation of these improvements will be discussed in the section of the Scope below. The more detailed description of each improvement will be discussed in the section of Epic stories below.

Intuitive and fast booking procedure

It is the fact that on the existing platforms, every booking procedure involves filling in accommodation details, searching the match results, checking for rooms and then booking a room. However, if a user knows the accommodation very well and just wants to book the room, unfortunately, they still need to follow the same way to make the booking. Hence, the problem we are facing is how we can save a user’s time in that scenario. We would like to propose the solution by using Dialogflow chatbot. The chatbot can only support room booking, but not any search functionality or making any recommendation.

DIY accommodation itinerary

We reckon that the existing platforms do not provide good experience in choosing a set of accommodations based on their routes. Normally, visitors may design their routes on paper and then choose accommodations correspondingly. However, it is not convenient for them to check some information like how long they need to travel to the next accommodation from the last one, or whether their accommodation is close enough to some attractions. They may refer to third-party software such as Google Map or travelling books to coordinate their travelling itinerary.

Our project would like to provide an integration tool on a single page to help visitors make those decisions so that it can provide the user with a good experience on designing their itineraries, and more importantly, finding the right place to settle down. Some instances of this functionality can be comparing the distances between two accommodations or recommending some combinations of accommodations based on the visitor's travelling route.

Assistant service for disabled people or people having less computer literacy

Most of the accommodation booking websites do not consider the assistant service. Assistant services such as voice input, or virtual keyboard can be very helpful for disabled people or people having less computer literacy. Therefore, our project would implement at least one functionality that can provide assistant service. Specifically, we may add voice input feature in the chatbot.

Aim

We would implement similar features which popular accommodation websites have already had including booking, searching, reviewing comments, etc. as well as the improving features mentioned in the last section.

Our final deliverable is a web application and it will contain:

- Four core service components
 - Four core service components that the project specification requires, include accommodation advertising module, traveller request module, accommodation search module and accommodation review module.
- Our proposed three improvements with certain scope
- Easy and clean user interface
 - The project specification requires easy layout and minimum opaque or useless information on a single web page.

Scope

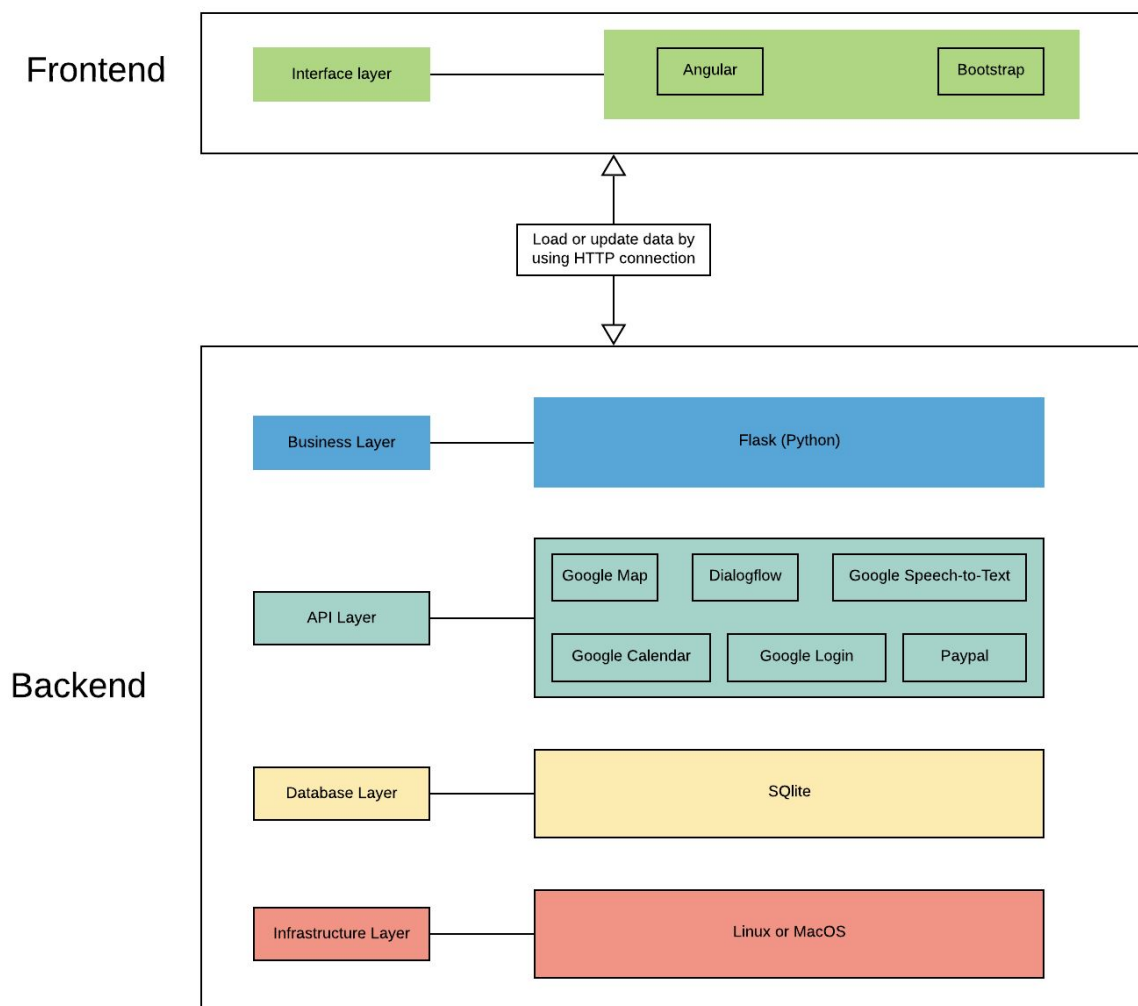
Since this project is just a prototype, we would like to define a certain scope for our project based on project requirements and some real-life limitations.

- We may not strictly follow the privacy law or other legislation. Also, no real payment will be processed on the platform.
- According to the project specification, our accommodation platform will only consider public accommodations available in New South Wales. The users should be visitors travelling in New South Wales.
- The scope of the proposed improvements:

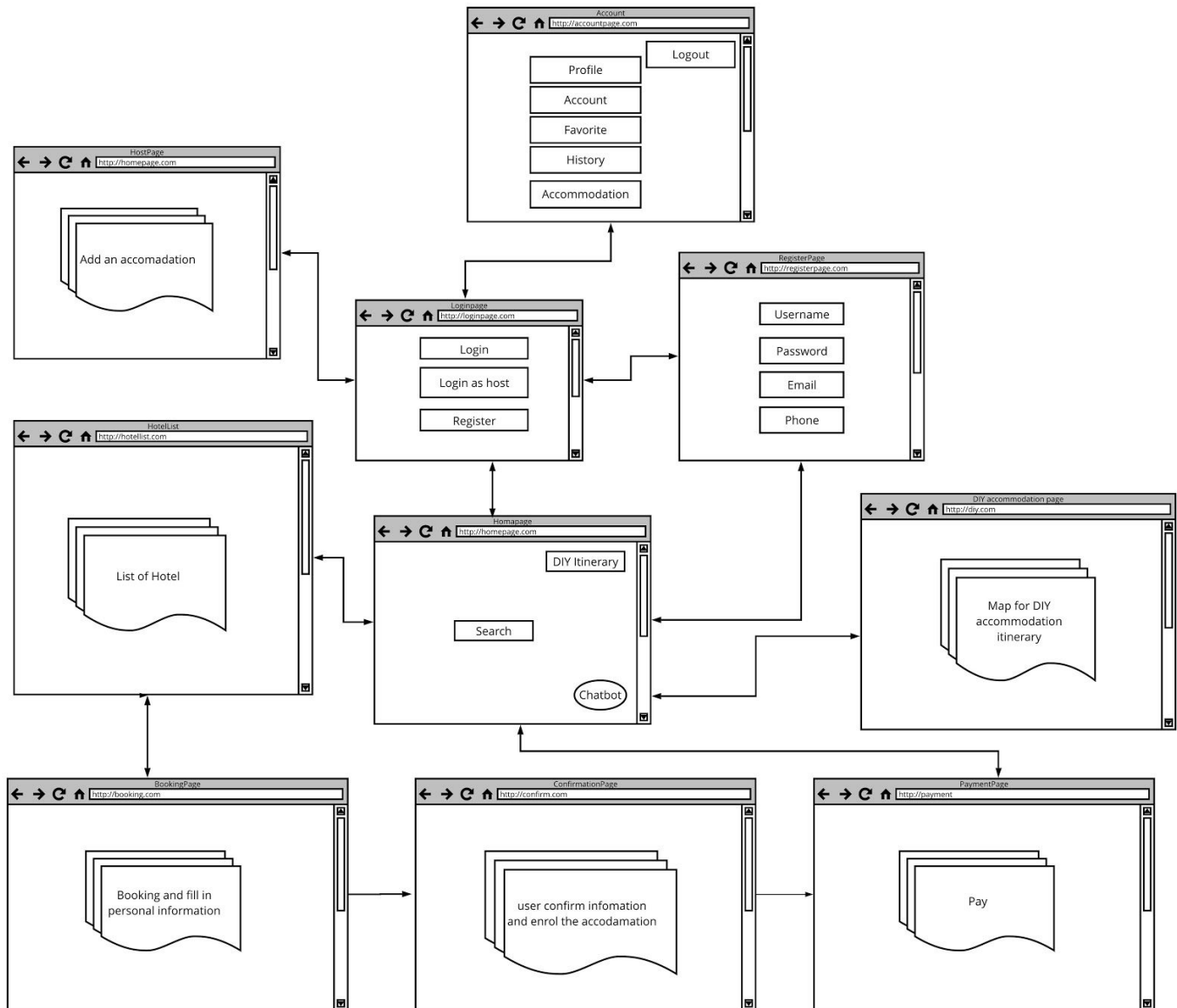
- The chatbot can only support the room booking, given that all the necessary information is provided by the user.
 - Voice input will only be embedded in the chatbot.
- Our project will support browsers like Chrome 67.0+, Firefox 60.0+, Safari 12 and IE 17, but we may not support any optimisation on mobile browsers.

Technical Design

Software Architecture



System Flow



Team Skill Set

Languages: Python (for Flask backend), TypeScript (for Angular frontend), JavaScript, Scala

Strengths: design, communication, organisation, teamwork, project management

Experience: web development, user interface design, software engineering

Epics

Authentication

The authentication functionality will provide a series of functions about the user's account. There are some features about authentication:

- Registration
 - User can open an account with email, password, and some basic information about the user, and then the system will send a verification email to the user to finish registration.
- Log in
 - User can log into the system with correct email and password.
- Modify Information
 - After login, the user can change the password, username, upload photos or some basic information.
- View history
 - After login, the booking history can be displayed to the user.

This epic has a predicted difficulty score of (4/10) because it includes some extra functions to finish. And a time estimate of 5 units.

Booking Functionalities

The booking functionalities contain a series of functions which user can modify their booking orders and provide the details of their orders include tax and service fee.

Main features:

- Make booking
 - User can make a booking with a specific date and the number of members. After paying, the user will get an order ID which is used to verification and change or cancel.
- Change booking
 - User can change the booking before they check in with the correct order ID.
- Cancel booking
 - User can cancel the booking before they check in with an order ID

Extra features:

- Send a verification email to the user

- The email contains the details of the order, as well as the check-in time and location. And it includes the features of the cost of the bill which include tax and service fee. There is no hidden fee.
- Calendar reminder
 - After the user has booked, the system will import the event into their calendar, but the system will not get any private information about users.
- User experience
 - The system allows the user to make a booking without an account. But encourage the users to create an account to get some rewards, discount. It is more convenient to use with an account.

The epic is essential for the user as it can allow the user to make a booking, change the reservation, cancel the booking. After booking, it will provide some convenient services to the user (like calendar reminder, verification email, make a booking without an account) which could get a better experience.

This epic has a predicted difficulty score of (6/10) because it includes some extra functions to finish. And a time estimate of 7 units.

Hotel Review

The hotel review functionality will display the overview of hotels. It can be accessed by clicking hotel card page (which show as a card on the HTML) to view the detail page of the hotel. The page will display the following information:

- The details of the hotel
 - Which include the location, price, contact, website, parking and so on
- Stars and text comment
 - It shows the experience of the traveller after staying. It could help the future traveller to choose a better hotel. Also, the hotel host can see the feedback to improve their accommodations.

The epic has an estimated difficulty score of (5/10) with a time estimate of 4 units.

Basic Recommendation

The basic recommendation will provide a simple recommendation for booking.

- **Search:**
 - Users can choose different ranking filters to list hotels. For example, user can select price, review or rating of a hotel to select accommodation.
- **Crowd base recommendation:**

- The system will advise some hotel that base on the comprehensive comment by Crowd, this result will list on the website when people booking.

The epic has an estimated difficult score of (4/10) with a time estimates of 4 units.

DIY Itinerary

The DIY itinerary is a single-page application. This application acts as a tool for helping the traveller find a suitable combination of accommodations alongside their routes. The page can be directed from the homepage. By clicking the button on the homepage, the browser will jump to this page.

The application contains an interactive map. On the map, users can highlight their routes. Then available accommodations will be shown alongside the selected route. Users can compare the distance or time between two accommodations. On the same page, some recommended combinations of accommodations can be provided to users for their reference. Optionally, we can add more features if we still have time in the last sprint.

The epic has an estimated difficulty score of (8/10) with a time estimate of 8 units.

Hosts Organizing Their Properties

This page will display information about the properties of the host. Hosts can organize their properties through this page:

- Become a host - Users can register to be a host here. Individual or Hotel.
- Room - Hosts can add or delete their rooms at this page.
- Room details - Hosts can change their room name, room address, room price, phone number and upload room pictures here.
- Schedule - Hosts can set schedule for their rooms. Only free rooms can be booked

This epic is important for hosts as it allows them to upload information about their properties.

This epic has an estimated difficulty score of 3/10 with a time estimate of 4 units.

Booking Assistant

We provide several functions to help users have a good experience.

- Speech Input – It can convert speech to text, which helps users who are unable to type. Users can search for hotels or asking questions by saying instead of typing.
- Chatbot - A dialogue box can be put at the bottom of the website. Users can ask the bot to make reservations for them.

This epic will improve users' booking experience and help people with a disability or new users.

This epic has an estimated difficulty score of 5/10 with a time estimate of 6 units.

Personal Recommendation

We can do a recommendation for users according to their previous reservation or asking their preference.

- Each hotel can be attached to several tags - so that we can do classification.
- Users can choose the tags they like – or we can find their preference according to their previous reservation.
- A list of recommended hotels will be shown on the screen.

This is a difficult epic because it needs knowledge of machine learning and data processing.

This epic has an estimated difficulty score of 8/10 with a time estimate of 10 units.

Final Epic Selection

From the above epics we choose as following:

Fully Implemented: Authentication, Booking Functionalities, Hotel Review, Hosts Organizing Their Properties, Booking Assistant

Partially implemented: DIY Itinerary

Not implemented: Personal Recommendation

Stand-up/Sprint Schedule

Our team will be following the Scrum methodology when developing the project. We are going to create a sprint backlog and do a sprint review and a sprint retrospective roughly every 15 days (probably more days needed in the final sprint). We are also tracking our tasks during each sprint by using GitHub Project Boards and commit our code to GitHub.

Stand-up Meetings

Since we cannot make the team meeting every day, we would like to set up stand-up meetings online if we cannot be in person.

- Every day except Wednesday and Friday: Wechat

- Wednesday: In-person
- Friday: In-person

Sprints

Project duration is 52 days from 8 October 2019 (Week 4 Tuesday) to 24 November 2019 (Week 10 Sunday).

- **Sprint 1:** 8 October 2019 - 22 October 2019
- **Sprint 2:** 23 October 2019 - 6 November 2019
- **Sprint 3:** 7 November 2019 - 24 November 2019

Rough Schedule

We believe the Gantt Chart is not appropriate to be used in agile development methodology. After discussion with our tutor (Ali Darejer) during week 3 lab, we would like to show a rough guide on how we will schedule to develop selected epic stories.

Sprint Schedule	Epic Stories To Be Completed
Sprint 1	Authentication, Booking Functionalities
Sprint 2	DIY Itinerary, Hotel Review, Hosts Organising Their Properties
Sprint 3*	DIY Itinerary, Booking Assistant

*Sprint 3 also includes writing the final report.