UNSW
AUSTRALIA

Project Proposal

Team: peppa pig
Computer Science Project COMP3900/9900

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Background

In statistics, 9.2 million international visitors to Australia in 2018. There is a big market in Australia. There was a total of 4.2 million international visitors to New South Wales in the 2017 calendar year. The total spend in New South Wales was $10.4 billion which accounted for 25% of all dollars spent in Australia for the year. From these statistics, we can find NSW is the biggest market in Australia. Due to this market, supporting tourism becomes quite potential and have big profit to dig. However, accommodation is a big part of the spend.

People love to travel, it can help release stress, open insight and enjoy the charm of scenery. It can be a family or individual of all ages, size and incomes. Additionally, travelling is not the only purpose for a trip. Some may be for business and others may make a trip for studying.

When it comes to a trip, there are many aspects you need to consider. How do you get the destination? How long does it take? Where do you live temporarily? People need to choose transportation and book accommodation. In all these parts we need to consider, accommodation is the most important part because a trip is wonderful but tiring. Good rest will make sure visitors perfectly enjoy their trip. Nowadays, there are many accommodation websites providing a booking service due to the boost in internet development, such as Airbnb.com, Booking.com and so on. Airbnb has grown in popularity in recent years as part of a broader trend towards the ‘sharing economy’, where peer to peer platforms directly connect customers and providers. Hosts across Australia accommodated around 2.1 million guests for 3.7 million nights in 2015-16. Accommodation booking has a huge potential and still have more valuable functions can be achieved.

Aim

For our team, we want to create a web application that service for people who aim to travel in New South Wales. The main customers we focus on are the people who plan a trip for a few days in New South Wales and do not have any idea about it. For this kind of customers, they may not have any information about their destination, so they may book accommodation online, in the meantime do some plans for their trip. However, we find that a lot of websites like Airbnb, tripping, booking. They just offer accommodation information, and others like TripAdvisor, Yelp. They just offer information about the great restaurants or other guidance for the trip information. This makes inefficient for customers. So, we want to merge these two resources and make customers easy to find any information they want.

Another part, we find an interesting problem that every website had. This is for every website, it is totally great for the users who are already familiar with the pattern of utilization, they can easily find what they want. But how about the people they never use any kind of these webs or people who do not know how to search for information online. They could not use the websites and need an instructor for help. Therefore, we implement a chatbot in the web application to help this kind of customers using it.

The left part is the same as the instruction described. like Airbnb, we need to provide access for both customers and client which want to be a landlord. And provide a booking function.

Features

- Search & booking function. This part, customers need to provide their requirements like date, location, price range, number of persons, etc. The search engine will take all these elements to make a relevant result list. Customer can re-sort this list by different keyword.
- Relevant recommendation. This function, customers do not need to provide many requirements like search & booking function. They could just input an event or an activity, the search engine can generate relevant results and activity related information provided by Machine Learning processing. We want this function to be efficient and effective information presenting to customers. For example, if a family wants to join Easter show in Sydney. They can just search ‘Easter show’, then the relative information like accommodation, restaurant, ticket information, will automatically show on the screen.
- Chatbot. As the previous said, we want to implement a chatbot to help customers. This chatbot is like Customer services. As we all know, the current accommodation booking website, there is less instruction information which shows the customer how to use the website. Our chatbot highlights our helping service. Customers can ask the chatbot to get any information or functions they want to access. Customers can easily use it to book accommodation, search for any travel information, ask for help. We implement Machine Learning based chatbot and NLP processing to make the accuracy is good. For example, a new customer does not how to book a house in Kingsford between 2 July to 5 July. He can simply ask the chatbot, ‘I want to book a 2-person room between 2 July to 5 July in Kingsford, Sydney.’ then, the chatbot will give a link of the book step page to the customer.
- Landlord credit. This is a new idea for the people who want to share their house with others and make some profit from it. The main idea is when someone rent your house and pay for it, the money will be added to your landlord account as a credit. The landlord can withdraw it to a bank account with a percentage of surcharge if you want. Or you can choose to keep it in the account, the credit can be used to pay when this landlord wants to rent others’ house on our website. It is another way to earn because you do not lose money from the surcharge.

Software Architecture

Presentation (Python,HTML,CSS,JavaScript)
Presentation Layer / Interface Layer
Business Layer (python)
Data Access Layer (RESTful API)
Data Storage (Redis or MongoDB)
Infrastructure Layer (Unix)

Python:

All of us be familiar with python language. So, the main body of this project will be built based on Python. Python is an interpreted, high-level, general-purpose programming language. Its language constructs and object-oriented approach helps programmers write clear, logical code for small and large-scale projects. It is mean that four of us be easily read and understand others code and integrate that. Most important point is that Python is dynamically typed and garbage collected. it supports multiple programming paradigms. Also, Python allows programmers to define their own types using classes, which are most often used for object-oriented programming.

HTML:

Hypertext Markup Language is the standard markup language for documents designed to be displayed in a web browser. It can be assisted by technologies such as Cascading Style Sheets (CSS) and a scripting language such as JavaScript.

CSS:

Cascading Style Sheets is a style sheet language used for describing the presentation of a document written in a markup language like HTML. CSS is designed for presentation and content, including layout, colors, and fonts. this separation can improve more flexibility and control in the specification of presentation characteristics, enable multiple web pages to share formatting by specifying the relevant CSS in a separate. CSS file and reduce complexity and repetition in the structural content. Beautiful is better.

JavaScript:

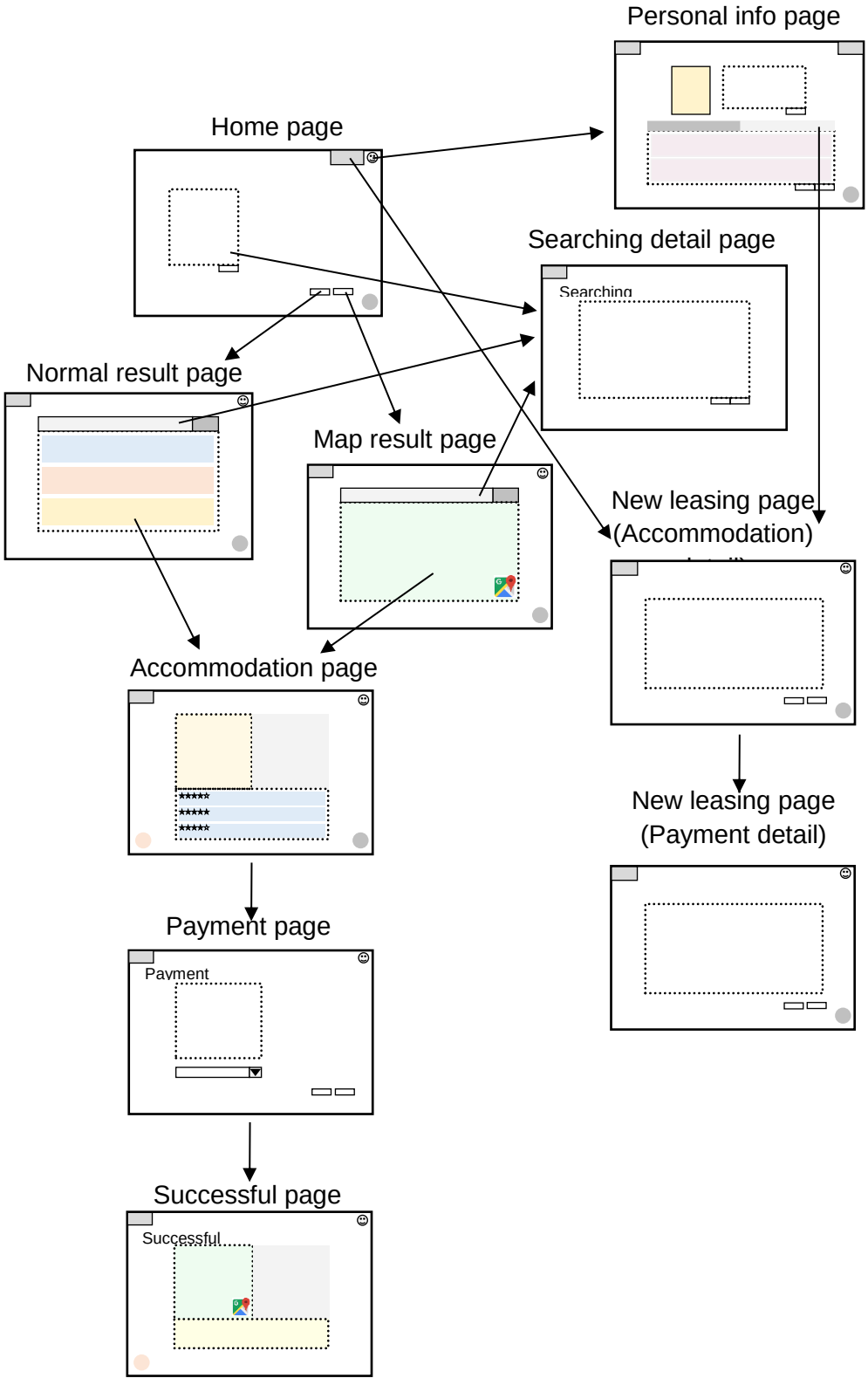
It is a high-level, interpreted programming language that conforms to the ECMAScript specification. JavaScript has curly-bracket syntax, dynamic typing, prototype-based object-orientation, and first-class function.

Redis or MongoDB:

All the data will be stored in Redis or MongoDB as JSON format like username, password, picture.

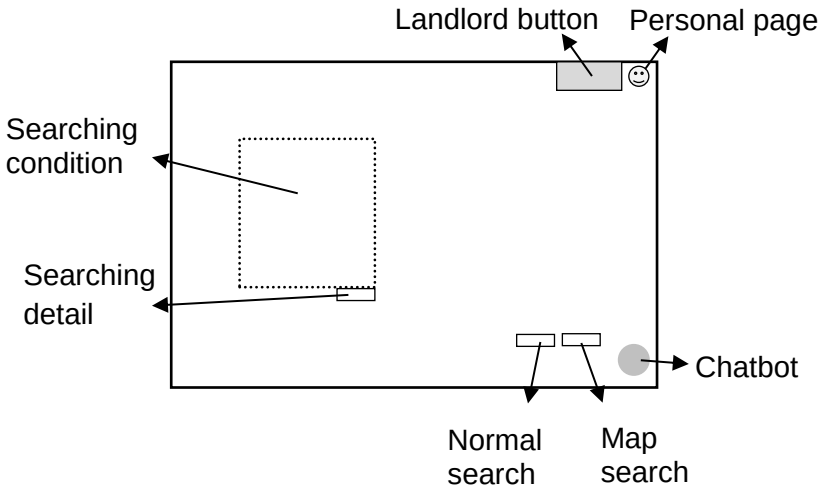
Modules / Flow

Workflow



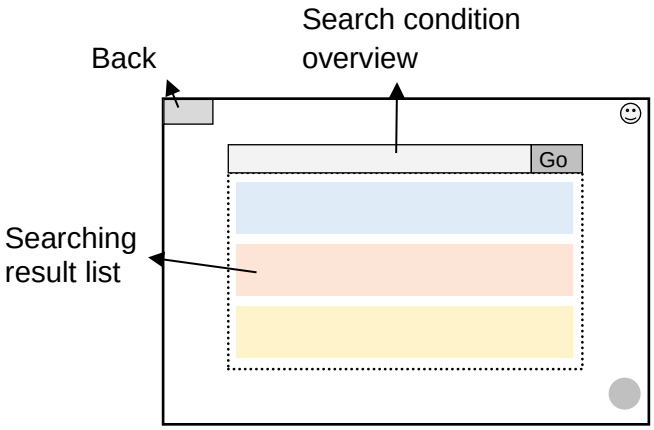
Module/Pages overview

1. Home page



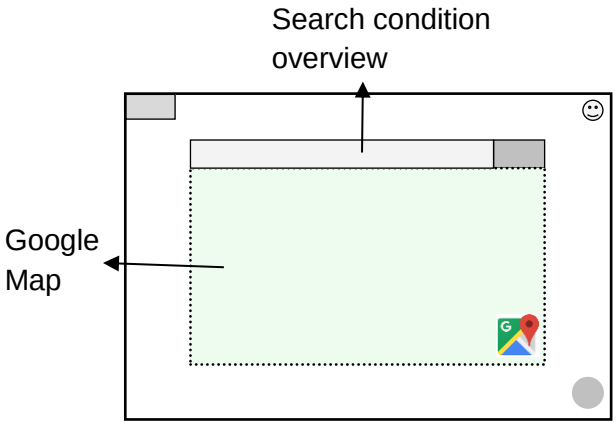
Searching condition includes the requirements of users such as destination, date, number of people and preference. Using searching detail button allow users to adjust the detail of searching condition. Chatbot will be a floating window. Landlord button allow users to become a new landlord or share a new accommodation on our website.

2. Normal result page



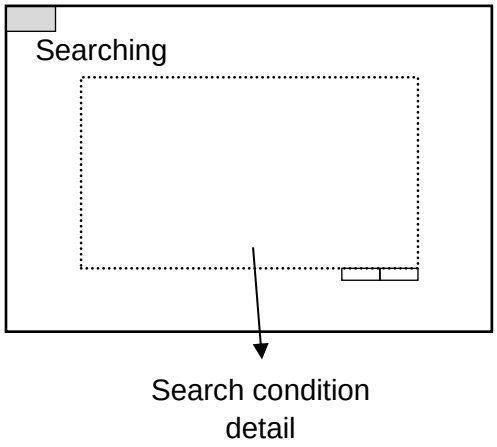
In this page, all result will be display as a list. Users can sort the result according to their own preference. Search condition overview allows users to alter the searching condition.

3. Map result page



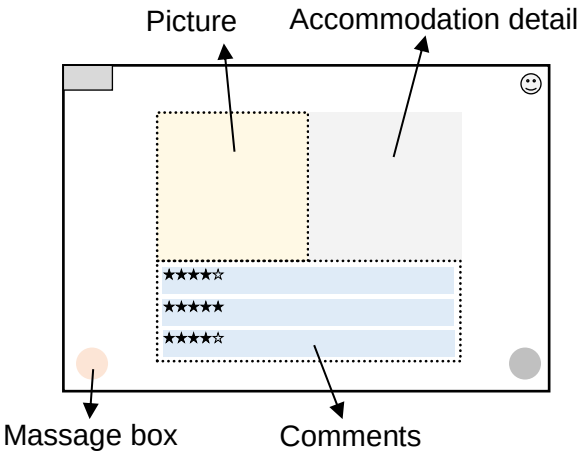
In this page, all the searching result will be displayed on the google map allows users to select an accommodation directly from the map.

4. Searching detail page



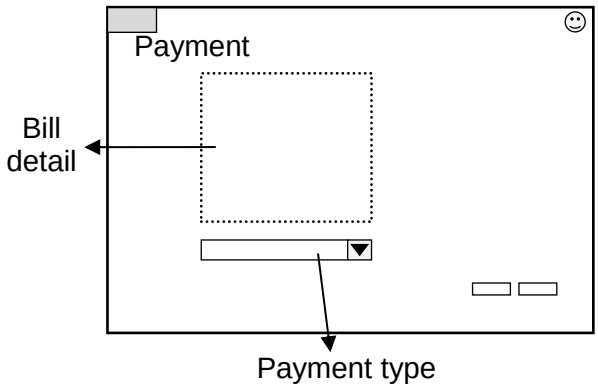
Search condition detail allows users to adjust the detail of searching condition

5. Accommodation page



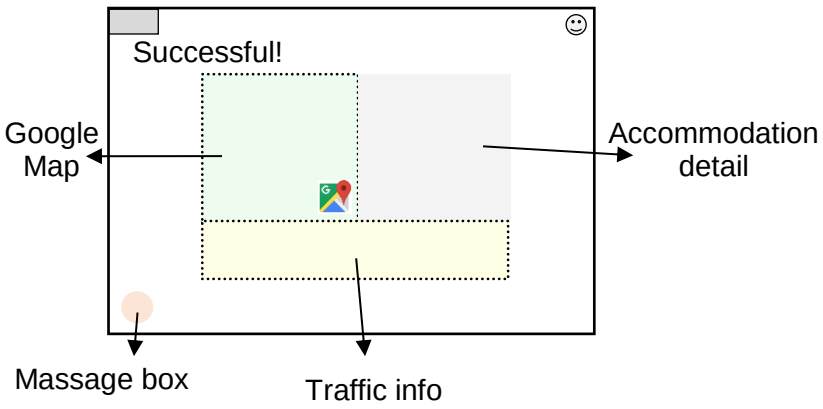
Picture area allows user to see the picture of this accommodation. Accommodation detail includes the general position of the accommodation and the general information of the accommodation owner. Users can use massage box to contact or leave a message to the owner of the accommodation. In the Comment area, user can see the comment and score giving by former customer.

6. Payment page



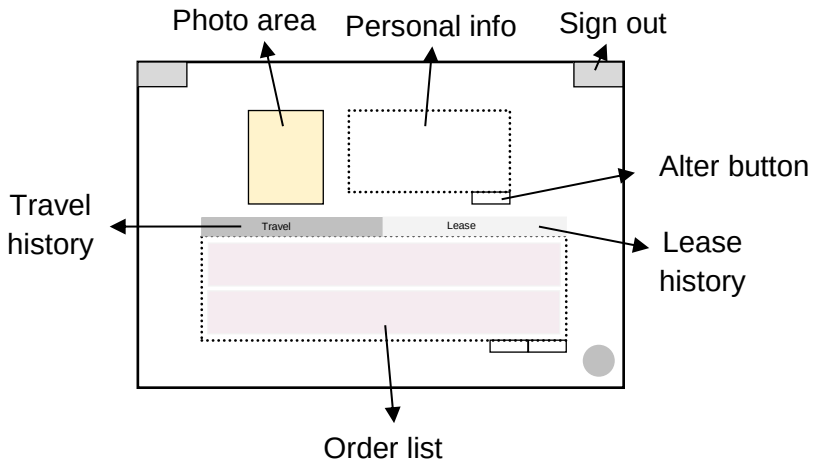
Bill detail area shows the bill information. Users can select payment type preferred below.

7. Successful page



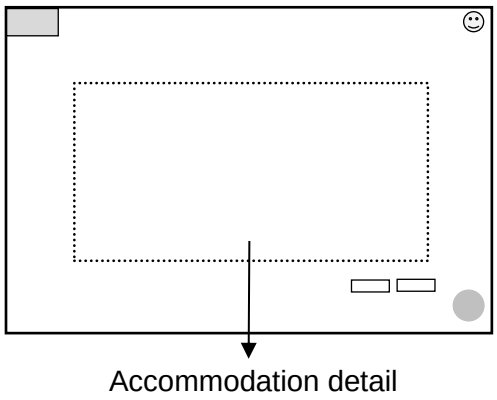
After successful payment, successful page will show the address and contact information of the accommodation owner. On the google map, system will prompt the user the conveniences within 500m. Traffic info will tell users how to get to the accommodation, or provide a external link such as Uber to help uses determine their travel mode. Users also can contact accommodation owner via massage box.

8. Personal info page



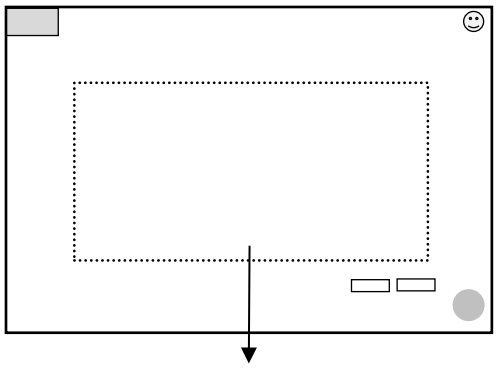
This page allows users access to their personal information, also allows users to do the alternation to their information. In the order list area, users can see two kinds of order: rent order and lease order. Users can become a new landlord or share a new accommodation on our website on this page.

9. New leasing page (Accommodation)



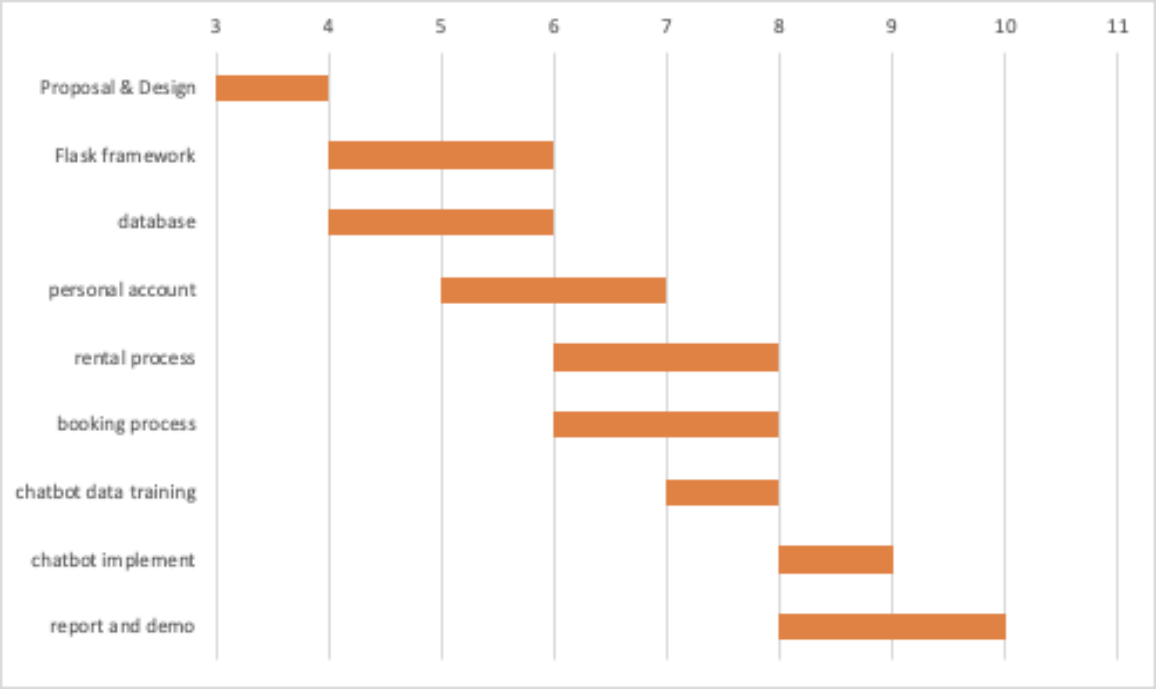
This page allows users to provide the information of their new leasing room to manager of the website. After review, this information will be displayed to their customers.

10. New leasing page (Payment)



This page allows users to choose how they get paid.

Schedule



Above is the Gantt chart for our schedule. It is just an estimated time schedule. We ill make it more flexible, for example, if one job can be done quickly, we will go for the next part. Also, if we meet some tough task, we will allocate more time for it. All of our team members make a deal, we will focus on it and make an equal contribution to our project.

Weekly Meet-up time:
Monday 15:00 - 18:00
Tuesday 15:00 - 18:00
Thursday 15:00 - 18:00
We will arrange additional discussion online or in person if necessary.

Lab Time:
Friday 13:00 - 15:00