

**COMP9900 – 2019 T2**

**Computer Science Project Report**

**Accommodation Web Portal**

**Group: Peppa pig**

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**Introduction**

This report includes three parts. First part analyzing accommodation web portal market demand and the drawback of existing accommodation web portal. Second part demonstrating our web portal functions and software implementation. Third part is conclusion and how to maintain it.

Accommodation Web Portal is a Web application that will allow providers to present their holiday units, and users to review the offers and reserve or rent a property. The application is limited to properties located in NSW.

**Background**

### Market demand

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. Additionally, accommodation is a big part of the spend.

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.

### Drawback of Existing accommodation web and APP

**However**, most part of customers may not have any information about their destination, book online becomes a good choice. Existing APP and website, like Airbnb, tripping, booking, just offer accommodation information and others like TripAdvisor, Yelp, only offer great restaurants or guidance trip information. This makes inefficient for customers. So, one APP that could merge these two resources and efficient show recommended restaurants and event information while customers looking an accommodation is urgent to be produced.

Another problem with existing website is that they are totally great for the users who are already familiar with the pattern of utilization, those customers can easily find what they want. But for new customer, there are barely instructor and not friendly.

**Aim Website**

For our team, we plan 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 or know a litter bit about it. Not only this APP have all the functions that existing APP and website has, but it will have some very new and useful functions that cover the black of the accommodation market. For example, recommended restaurants and events around their destination would be show on the accommodation page.

To solve the problem that existing APP not very friendly to new customers, we implement a chatbot in the web application. Robot chatbot will collect as many questions as possible such as how to sign up, how to order, how to cancel an order, how to contact with host and so on.

The left part is that our APP needs to provide access for both customers and client which want to be a landlord. And provide a booking function.

**Web Features & Software Implementation**

### Main functions (一个网站的基本功能)

### Robot chatbot

### Relevant Recommendation

### Search

### Landlord credit

### Message

### Database

* *Recommendation function. In this part, system will automatically recommend restaurant and event information around the property and show it on property page.*
* *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) |
| 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 user name, password, picture.

**Conclusion**

### Problems

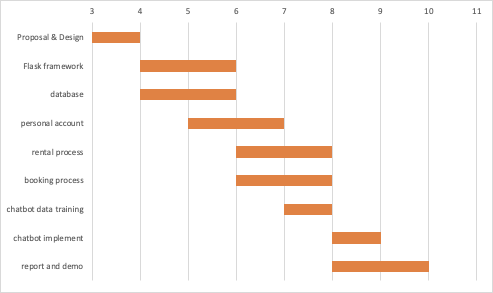
### Solutions & innovations

## **Further Improvement (看写完没)**

## **Maintenance & Operation**

## **References**

**Schedule**

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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