北 京 邮 电 大 学

BBC6521 Project 毕业设计 2016/17

Early-term Progress Report

初期进度报告

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设计（论文）题目 Project Title	A room service translation/recommendation web based system				

已完成工作：
Finished Work：

Task 1: Research the main topics, i.e. hotel room services and menus; also define and scope the user and system's requirements.

1. Determine what hotel room services are provided.

My project supervisor suggested me to look at what kind of services are provided on websites of famous chain hotels such as Sheraton, Hilton and Wanda, which turned out to be a very effective method. And I roughly sort common service into the following categories and give screenshots accordingly.

a. Room Orders:
    i. Booking new rooms
    ii. Renewing existing rooms[1]
b. Food & Drinks:
    i. Cuisine (Chinese\ Thai\ Japanese etc.)
    ii. Personal Custom
    iii. Delivery or at restaurant
c. Office & Work
    i. Meeting room
    ii. Club Lounge

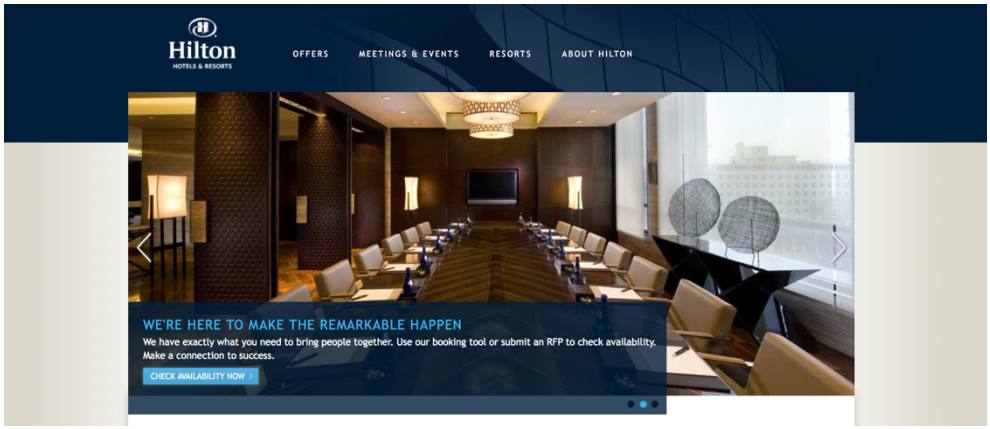


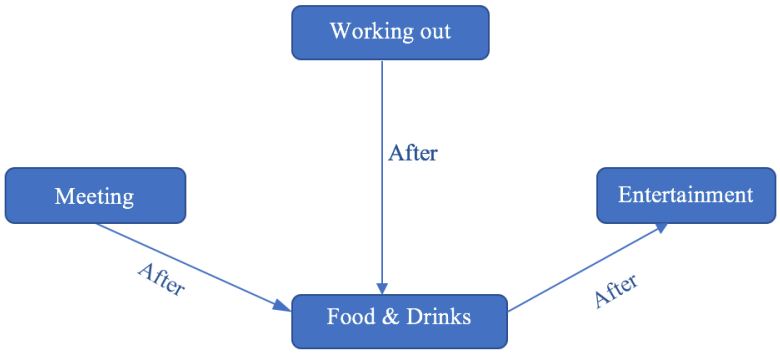
Fig. 3 Introduction of Meeting Room from Hilton®[2]

[1] Information found on the official site of Sheraton, available here: http://www.starwoodhotels.com/sheraton/property/dining/index.html?propertyID=3775&language=en_US&localeCode=en_US

[2] Picture captured from the official site of Hilton, available here: http://www3.hilton.com/en/events/meetings/index.html

d. Entertainment
    i. Swimming Pool
    ii. Fitness
    iii. Kids

2. Determine the logical relationship between services so that recommendation can be made accordingly. There are logical relationships between the services I listed above, for example, a customer may need food and snacks after working out at a fitness gym. The basic relationship can be roughly presented as follows:

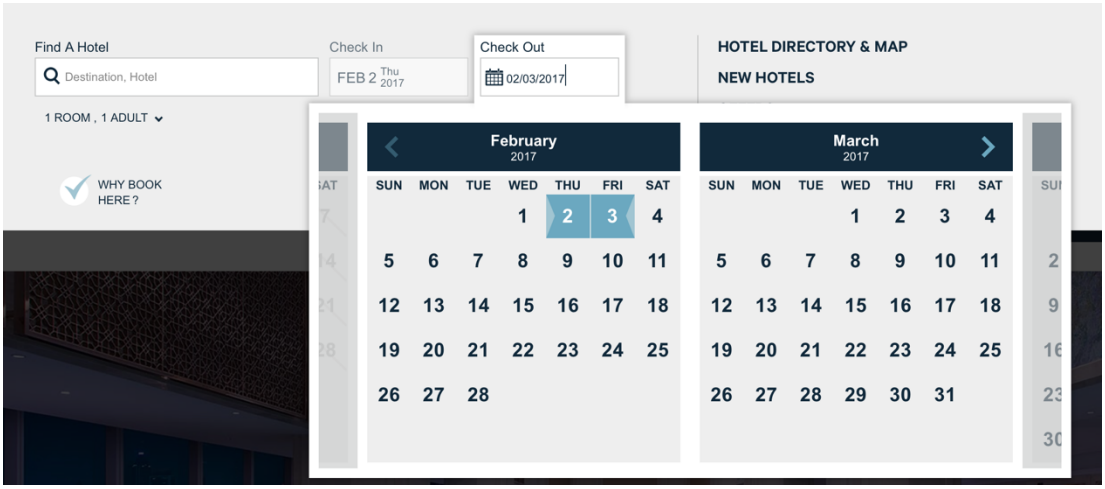


Besides, there are also detailed recommendations, such as:

a. Customers who book a new room may want a picking up service at the airport;
b. If a customer is just finishing working out, he/she may not want Chinese food (heavy in oil and salt);
c. Customers with kids usually do not need business service (meeting room etc.).

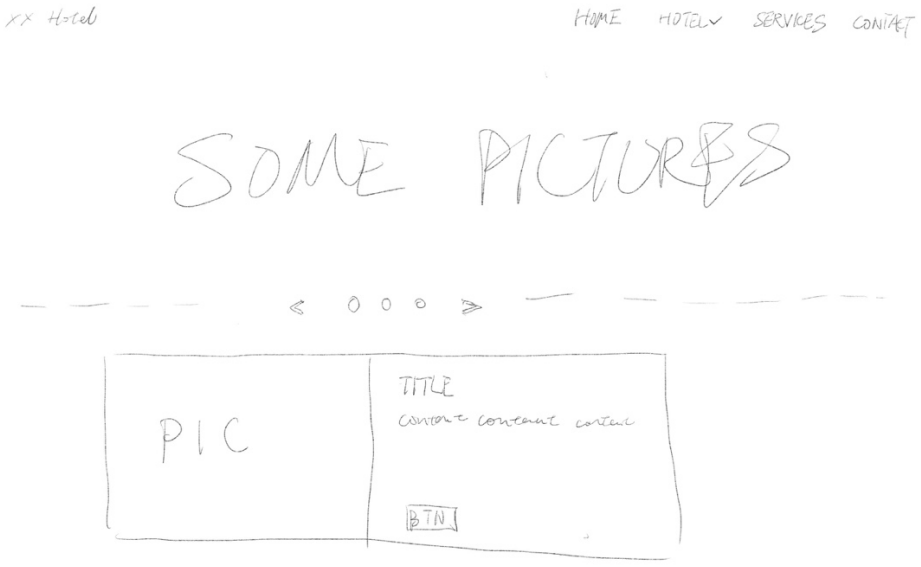
3. Gathering and analyzing the user and system requirements.
    a. Users can order all the services listed above online and the system is required to successfully handle user requests and store information appropriately.
    b. Every time a service is ordered, the system should give recommendation according to the logical relationship with the previous service as we discussed before.

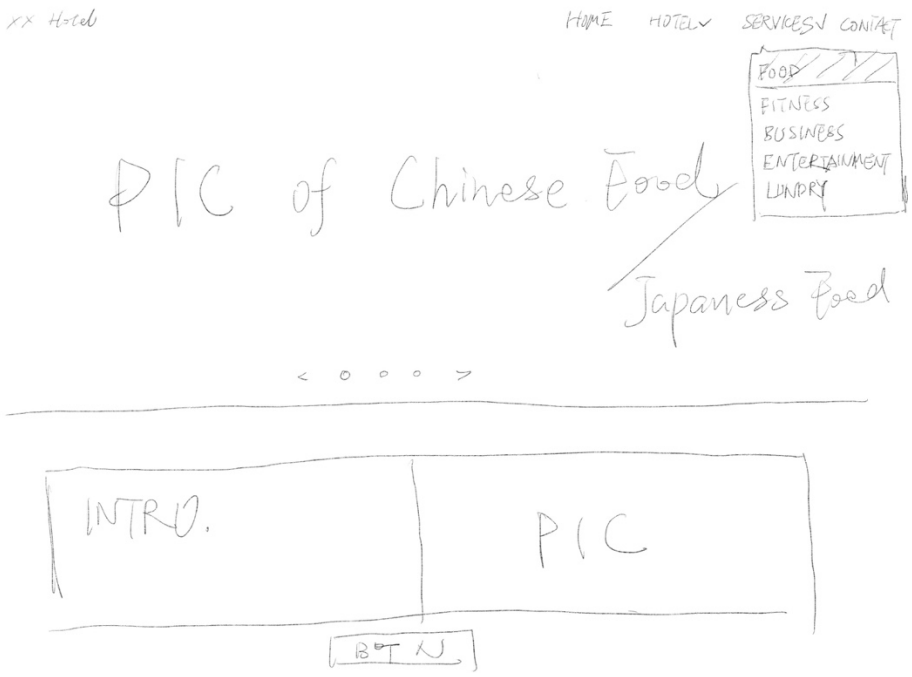
c. The interface should be easy to use, for example, a time picker should be used when the user want to input a data, shown as follows:



4. Design way of presentation of these services and get prepared for web design.

First of all, the services will be folded into categories as I suggested above, which will be presented as a navigation bar on the top of the website. And the details of each service will be presented in the center section. I drew a layout of the website shown as follows:





Task 2: Design a database driven server to manage all the information about the hotel services and users.

1. Determine what kind of database technology to use.

There are mainly two database technology involved and they are MongoDB[3] and MySQL[4]. I decide to adopt MongoDB over MySQL because of following reasons (included but not limited to):

a. Developers who use NodeJS (JavaScript) to build web applications tend to use MongoDB, which means that I can be better supported by the community if I choose MongoDB over MySQL.
b. MySQL better suits applications that require complex, multi-row transactions (e.g., a double-entry bookkeeping system), while the application I am going to build does not involve complex data structures.
c. MongoDB has many advanced features over MySQL (shown in table 1), and thus, be widely used in many state-of-art fields such as data mining. Therefore, getting familiar with it is not a bad idea.

[3] Introduction of MongoDB can be found here: https://www.mongodb.com/what-is-mongodb

[4] Main features of MySQL can be found here: https://www.mysql.com/why-mysql/

	MySQL	MongoDB
Rich Data Model	No	Yes
Dynamic Schema	No	Yes
Typed Data	Yes	Yes
Data Locality	No	Yes
Field Updates	Yes	Yes
Easy for Programmers	No	Yes
Complex Transactions	Yes	No
Auditing	Yes	Yes
Auto-Sharding	No	Yes

Table 1 Feature Comparison between MySQL and MongoDB[5]

是否符合进度？On schedule as per GANTT chart?	YES

[5] Information can be found here: https://www.mongodb.com/compare/mongodb-mysql

下一步：
Next steps:

1. I need to implement the database fields with what I have designed for the web application, such as customer ID, service name and order timestamp.
2. I need to connect the database to NodeJS server and fix bugs may emerge, making sure it works well as expected.
3. I need to design the web page in more details and implement it in HTML, CSS and JavaScript files, which can be decomposed into three subtasks:
    a. Implement the overall architecture and add components such as navigation bar and buttons in HTML files.
    b. Design the look and style of the web page and implement CSS files accordingly.
    c. Add animation to the web page through JavaScript functions.