Interface

INTERFACE

Smart House Purchase Project

Team : Group 11 - Interface

12/03/2021

1 Executive Summary

1.1 Background

Nowadays, renting and selling house is still a problem because of the high agency fee or bad service. So we decide to create a high quality community for house selling and renting with some cool functions, such as estimating the price of your houses or what's more.

1.2 Relevant Product, Market and Competitor

There are lots of relevant product can be seen, for instance: Beike, Lianjia, etc. But these platforms all play roles like agency. The market of house selling is still important in the society. So building a platform something a little bit like community with the third party supervision is a good idea.

1.3 Goal

Different from other platforms, we want to make the customer can buy their house or sell their house with no agency fee, they can communicate with other users directly, the contract of selling will be established on our platform, and we will give the house an estimated price at first according to the provided information or photo.

1.4 Management team

Our management team consists of 4 men whose are both students in SE. we have four groups: Leading Group, Code Group, Maintenance Group and Customer Group, whose responsibilities can be seen on the work packages.

2 Statement of the Problem

In this system, purchaser could know how much they should pay for the house they want and owners could know how much they will get from this house. This function can be achieved by using machine learning. Here are some reasons of chosen this problem.

- There are lots of company have their own system for users to buy or sell a house. But users don't know how much the suitable price is. So we would like to make it possible.
- Experts who are professional in the field of housing appraisal are always highly paid. However, most people can't afford this high cost. If we can train computers to do this job, most of the people can know the value of the house without paying for it.
- All of our group members have learned machine learning before, so we believe that we can make a good machine learning model.

3 Objectives

this part will be divided into two parts —— the basic website part and the new technology part.

3.1 Basic website part

This website is no only provide for buyers but also for personal sales, so we will offer two ports for users so they can select what they want. What is more, there is a special authority account for service staff, staffs can manage any data on the website So our members need to develop a housing buying, selling and inquiry system, and an extra system to provide potential customers to the housing sales staff.

3.2 New technology part

- Using Machine Leaning to develop a model to help customer to predict their house price.
- Recommend potential customers to the housing sales staff based on their interests if customers agree to provide.
- Using recommend system to provide the most relevant house based on user's search

4 Technical Approach

We decided to use Spring as the back-end framework and the React.js as our front-end framework. We use Spring and React with following reasons:

- Spring can eliminate the overuse of Singletons that is common in many projects. Singleton reduces the testability and object-oriented nature of the system.
- Applications built with Spring are easy to unit test.
- Spring provides a consistent framework for data access, whether using JDBC or O/ RMapping products
- React does not manipulate the DOM directly. It introduces a concept called virtual DOM, which is inserted between JavaScript logic and the actual DOM and performs well; React code is more modular, making it easier to reuse code and maintainable; It also has good compatibility.

5 Project Schedule

Here is the Gantt Chart.

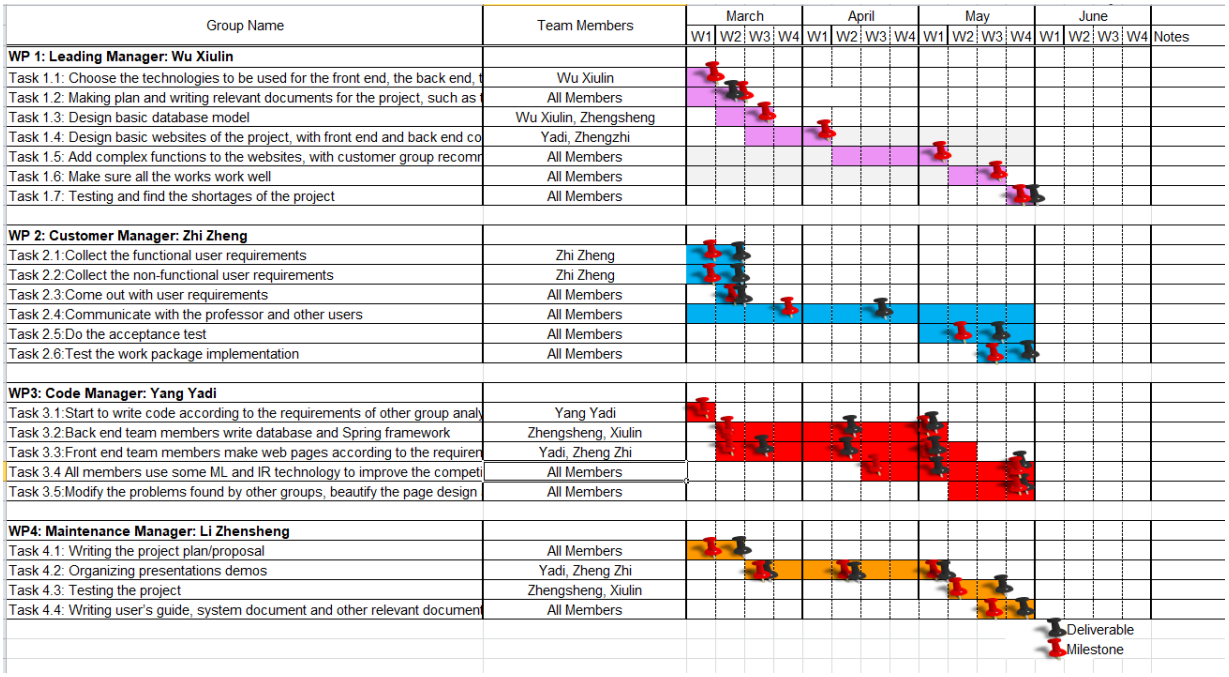

Figure 1: Project Schedule

6 Deliverables

A website that can be used in computers and smart phones. Users need to register and login in, and then they can estimate the price of the houses and get the recommended houses that depend on their requirements.

6.1 Leading Group

Xiulin Wu takes charge of the leading group, who is responsible for determine the timeline of the project, dealing with the problems in the project, examine the progress of the whole project, writing relevant documents.

6.2 Code Group

Yadi Yang takes charge of the code group. This is the most important part of the project, four members all take part in this group's work. The main goal of this group is building strong project with efficient technologies.

6.3 Maintenance Group

Zhensheng Li takes charge of the maintenance group. This group is responsible for the relevant document and video. Testing is also this group's work.

6.4 Customer Group

Zhi Zheng takes charge of the customer group, who is responsible for collecting user requirements, communicating with the TA and professor and the respondence of users.

7 Project Focus

The project will mainly focus on the Machine Learning, Recommending System and Multi-platforms. For example, our website can be used both on the PC, smart phone and Wechat. We can estimate the price of the house and recommend the houses that user wants.