

# **Product Requirements Document**

## **Project: Easyplan**

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### **Revision History**

1/22/15 - Initial Draft

### **Introduction**

Landlords and tenants expect rental process to be a convenient online experience. While much of rental process has been moved online, the process of efficiently creating and effectively presenting a visual of a rental unit has not yet been perfected. Tenants do not want to waste their time trying to figure out a complex floor plan with no indication of what the property actually looks like. Landlords want a more modern way to present their property information to potential tenants.

Using the gyroscope and accelerometer in a mobile device, this mobile application will allow landlords to generate a floor plan that can be stored in the cloud. When using the application, landlords will be able to input features of a room such as doors, windows, and major appliances. Landlords can also enhance their floor plan by associating actual photos of the room with points on the floor plan. Tenants can interact with floor plans that a landlord has generated and made available online. The application will also provide a backend that will allow the landlords to store this data online. From this backend, they can export the data, share it with tenants, or edit it to suit future changes.

### **Glossary of Terms**

Application: Our product, that can be used through the Internet, to create, view, and do related tasks with floor plans.

Landlords: Users who use the application to create a floor plan.

Tenants: Users who will interact with a completed floor plan.

Floor plan: In our application, a floor plan is a representation of a real property or structure and is made up of data that is collected by the application.

## **System architecture overview**

We will be using Javascript running in a mobile browser to access the phone's accelerometer, gyroscope, and camera, in order to create a floor plan and add features of the room to the map. Ruby on Rails will be used to serve up the Javascript content and store the data in a database.

## **Requirements**

User stories:

1. As a landlord, I can start the measurement, in order to test the distance between two points.

Acceptance test: The landlord is able to successfully move the application from an idle state to a state in which is actively collects data.

2. As a landlord, I can stop the measurement, in order to test the distance between two points.

Acceptance test: The landlord is able to successfully move the system from a state in which it is actively collecting data, to an idle state, and all the data tracked is retained.

3. As a landlord, I can read the distance, in order to test the distance between two points.

Acceptance test: The device is able to accurately measure distance between two points.

4. As a landlord, I can take a picture, in order to show off how great an apartment is.

Acceptance test: The landlord is able to use the application to take a picture with a phone's camera.

5. As a landlord, when I take a picture the position and orientation are preserved, in order to make the photos more clear to tenants.

Acceptance test: The application is able to determine the position and orientation of the device when taking a picture and save it along with the image.

6. As a tenant, when I look at a floor plan, I can see where each photo was taken, in order to more clearly understand the floor plan.

Acceptance test: Each photo is labeled on the floor plan in such a way that the position and orientation of the device at the time the photo was taken are accurately represented.

7. As a landlord, I can view a floor plan I have created, in order to check my work.  
Acceptance test: The application can store that data collected and show it to the landlord so that they may verify the details
8. As a tenant, I can view a floor plan, in order to see what an apartment looks like.  
Acceptance test: The application can serve up the data collected in a graphical form.
9. As a landlord, I do not need to set the phone \*everywhere\* to generate a floor plan, just one place per flat surface, in order to save time.  
Acceptance test: After setting the phone down on several surfaces in the room, the application is able to make a suitable geometric model of the room that accurately represents the dimensions and features.
10. As a landlord, I can indicate the features in the apartment in some manner, in order to add detail to the floor plan.  
Acceptance test: The user is able to mark the features of the room as he/she is creating the floor plan, and the features of the room are accurately represented in the finalized floor plan image.

### **Prototyping code and test cases (Github URL)**

<https://github.com/cscheung/CAPSTONE> (initial used for testing)

<https://github.com/cscheung/Mapfolio> (the one we plan to be using from 1/29/15 on)

### **Appendix A: Technologies employed**

Front end:

- Javascript/CoffeeScript
- CSS
- HTML 5

Backend:

- Ruby on rails
- Amazon AWS
- SQL Databasing implemented with Active Record