Vision Statement (Updated 10-31-18)

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Team

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Project Title

Free Real Estate

Project Overview

Our project will allow property managers to avoid the hassle of buying furniture and other decor by staging a property virtually. Our augmented reality application will allow the user to change the paint color of the walls, alter the floor style, add furniture, art, and appliances. Currently, property managers have to hire people to move in furniture, decorations, and appliances. This takes a considerable amount of time and money, and it prevents the property manager from showing anyone the property until it is completed. In addition to making the property managers job easier, prospective renters will be able to view properties decorated in their preferred style. Our application gives the customer the power of choosing how the interior looks while they view the property, in real time. Moving into a new property is a big commitment — with our app, customers will be able to feel more secure in their investment.

Although there are current augmented reality applications on the market that allow users to place furniture or change the color of walls, there are no applications that combine both technologies. Furthermore, the existing applications do not target property owners. The most commonly used solution is staging properties with example interior designs or individual pieces

of furniture. There does not appear to be anything currently in existence that aims to fully virtually furnish an apartment to assist in negotiating new apartment rentals, so our app will address a very real need.

Technologies Leveraged

Our product will be written primarily in Swift for iOS devices, utilizing Apple's ARKit 1 to identify flat horizontal and vertical surfaces and place basic 3D models. It will also utilize new features to ARKit 2 for better surface recognition and the ability to host multi-device sessions where multiple users can view the same scene on their own devices in real time. ARKit 2 also enables persistent scenes, so a user can set up a room with virtual furniture, close the app, launch the app later, and see all the furniture in the room just as they first set it up. To make setup-free touring a reality, our team will be utilizing the latest in augmented reality technology. In order to ensure a fluid and dynamic user experience, we will be storing 3D model and preset data on a remote server, which will serve packaged data to customers using the app using ASP.NET written in C#. The menus and buttons will be written in React Native because our mentors have informed us that basic UI elements are easier to program in React Native than Swift.

Project Timeline

Initial goal:

The initial goal is to create a minimum viable product that can handle simple AR functionality. To us, this is the ability to change the type and color of the floor, as well as the color of the walls. We plan to prototype an app that can look at a wall and change its color. We will then do the same thing with floors. Once we have that completed, we will move on to being able to place furniture and appliances.

1. Assemble end-to-end framework that allows us to test the app with something that works. This means building both the stager's and the viewer's UI and creating communication between the two.
2. Pivot towards exploring AR technologies and implementing the core features: changing floors and walls. After floors and walls we will begin exploring furnishings.

3. Fine tune the UI components and test.
4. Enable persistent scenes and multi-device sessions.