SOFTWARE REQUIREMENTS SPECIFICATION

OF

HOME FURNISHING USING AUGMENTED REALITY

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1. INTRODUCTION

1.1 Purpose

The document lays out a project plan for the development of “ARHouseFurnishing” mobile application by Kush Mehta.

The plan will include, but is not restricted to, a summary of the system functionality, the scope of the project from Kush Mehta and the restrictions of the application.

1.2 Customers

The document and project are for every furniture store who would like to incorporate the method of furniture selection through AR furnishing. The furniture stores can create their personalized application with their desired furniture product.

1.3 Project Scope

The purpose of the app is to allow the customers of the furniture store to preview the look of their home from a given set of furniture of the store through Augmented Reality and selecting the best possible design. The scope assumed is to be of every furniture store willing to adopt this model and enable its customers to get a personalized view.

2. OVERALL DESCRIPTION

2.1 Functionality

- 2.1.1 Users should be able to choose the location to place the furniture
- 2.1.2 From the desired location they can select a furniture from the given set of furniture.
- 2.1.3 They can drag, scale, and rotate the furniture to set the furniture in the desired location and in accordance to their house structure.
- 2.1.4 Upon finalizing they can fix the furniture to the location.
- 2.1.5 Further they can select and place multiple items.
- 2.1.6 If unsatisfied they can delete an item selected.
- 2.1.7 They can add desirable items to the cart to store and for future reference.

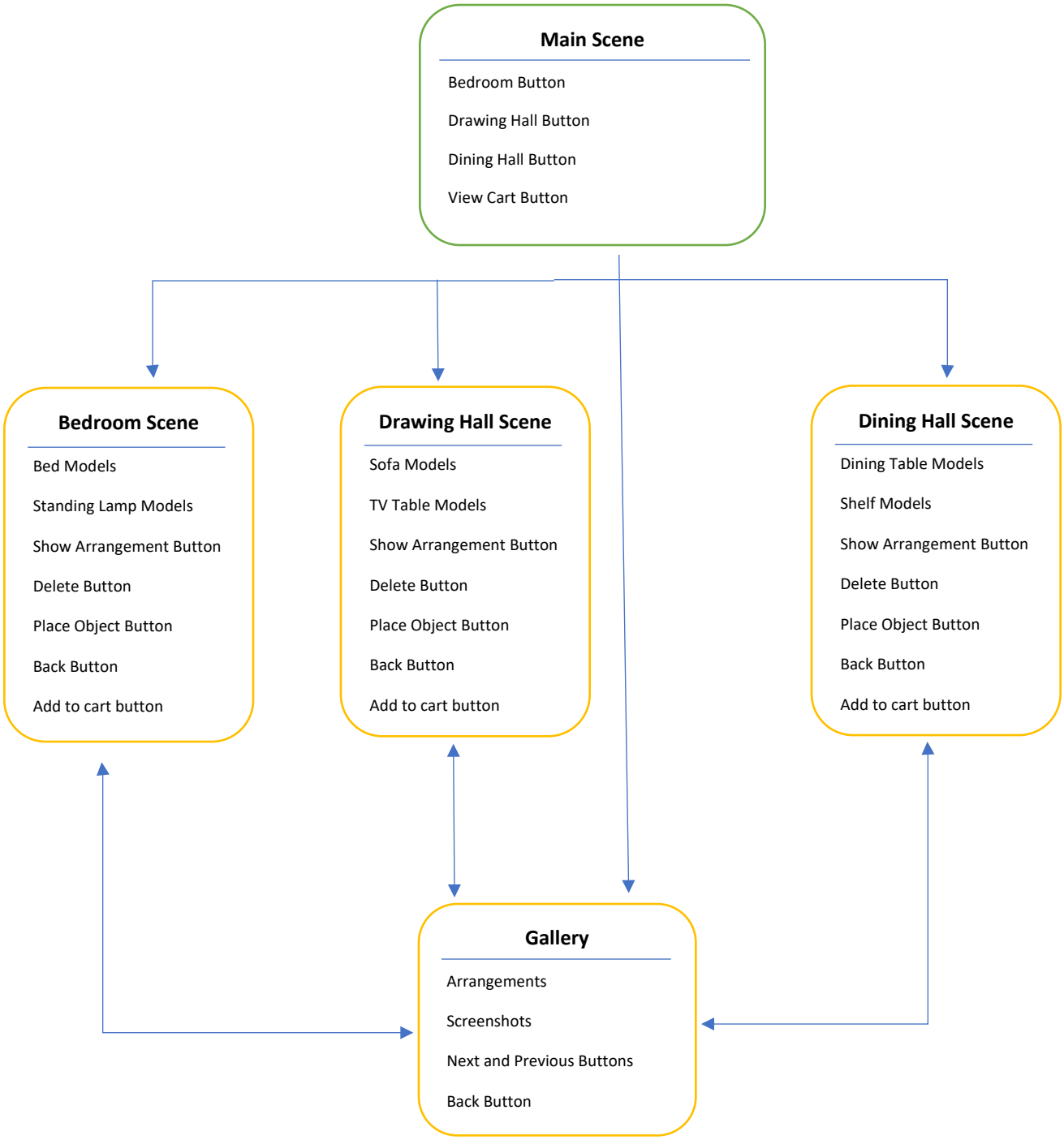
2.2 Platform

The app is built for android devices.

2.3 Operating Environment

Software: Unity
Platform: Vuforia
Database: Firebase
Operating System: Windows

2.4 **Product features**



2.5 Scenes and Characteristics

Users should be able to toggle between the three locations and in each location, they should be able to select the desired model from the provided models. Further they should be able to drag and move the furniture around and scale and rotate it. The user should be able to fix it to a position, delete the furniture, show the desired arrangement chosen and add the items to the cart.

2.5.1 Main Scene

- Buttons to toggle between the locations
- Button to go to the cart to view the previously saved arrangements

2.5.2 Location Scenes

- Select 3D models from the available options
- Drag, scale, and rotate using fingers to place and adjust
- Button to fix the object
- Button to delete a selected furniture
- Button to show the chosen arrangement
- Button to add the selected items to the cart

2.5.3 Gallery Scene

- Screenshots of the arrangements stored in File manager -> Android -> Data -> Application Name -> Files
- Next and Previous screenshot button to toggle between the screenshots
- Back button to go to the main Scene

3. Risks and System Requirements

3.1 System Requirements

The features of the app are only supported by the devices which support platform enables (ARCore and ARKit) or devices which have been specifically calibrated by Vuforia. The link https://library.vuforia.com/content/vuforia-library/en/platform-support/vuforia-engine-recommended-devices.html provides the list of the devices which could host the app.

3.2 Risks

With companies like Google and Apple investing heavily into the AR technology and famous furniture brands such as IKEA Furniture developing apps in the similar domain creates risk in the functionalities of the app.

3.2.1 Risk Mitigation

Brands like IKEA create similar apps which hosts only their own furniture. This app allows any furniture store to give their models to be deployed in the app and provide separate interfaces to individual stores.

3.3 Constraints

The constraints which the app possesses is the fixed and limited set of furniture available provided by the store.

4. Scheduling and Estimates

Milestone	Description	Completion Date
M1	Application view and design	31st May 2020
M2	Functionalities of selecting and placing furniture	6th June 2020
M3	Collision management and UI improvements	13th June 2020
M4	Screenshot Storage	19th June 2020
M5	Cart functionality	24th June 2020

5. References

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3. https://library.vuforia.com/content/vuforia-library/en/platform-support/vuforia-engine-recommended-devices.html
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