Software Testing Document

for

Augmented Reality BC Campus Tour App

Version 1.2
15 March 2019

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Electronic version Google Drive

Revisions

Version	**Primary Author**	**Description**	**Date Completed**
1.0	All team members	Original document	11/21/2018
1.1	All team members	Add test cases	11/25/2018
1.2	All team members	Added test cases	03/15/2019

Table of Contents

1 Introduction

1.1 Purpose

The purpose of this document is to describe the overall test plan and strategy for testing the Augmented Reality BC Campus Tour App.

1.2 Scope

The scope of this document is to cover edge cases within the entire app which comprises of the Database, UI, AR and Parser. The load and security testing will be out of scope for this version.

1.3 Test Approach

Testing methodologies to use:

- Unit testing to validate that each unit of the software performs as designed.
- Integration testing to test possible faults in the interaction between integrated units: app and web server, web server and DB.

1.4 References

Software Requirement Specifications document
Software Design document

2 Test Plan

2.1 Features to be tested

- App run on different devices (according to requirements list)
- App can request information from DB
- App must recognize A building
- App must recognize B building
- App must recognize C building
- App must recognize D building
- App must recognize E building
- App must recognize K building
- App must recognize L building
- App must recognize M building
- App must recognize N building
- App must recognize R building
- App must recognize S building
- App must recognize T building
- App must recognize U building
- App must recognize student housing building
- Ability to parse web page
- Ability to make a phone call from the app

2.2 Features not to be tested

- Max users at the same time (load testing)
- Security issue for using camera and gps allocation

2.3 Testing Tools and Environment

- Android Studio
- Google Pixel, API 28
- Android tablet

3 Test Cases

3.2.1 Test Cases for Housing Building

3.2.1.1 Test Case #1 - MainActivity Apply Button

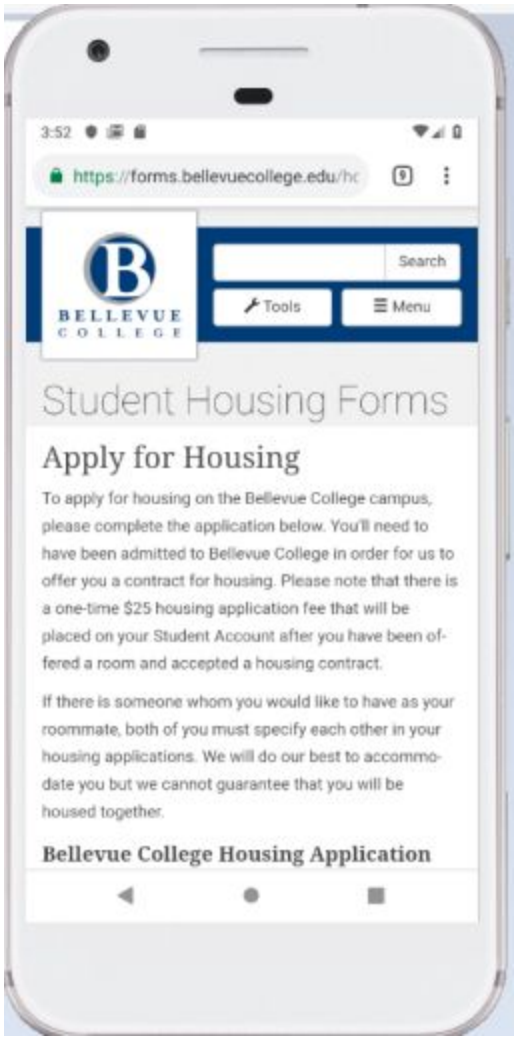
1. Purpose

Apply button takes to housing web page with online application

2. Input

Press Apply Button

3. Expected Output



4. Pass/Fail Criteria
Pass if web page opens, fail otherwise

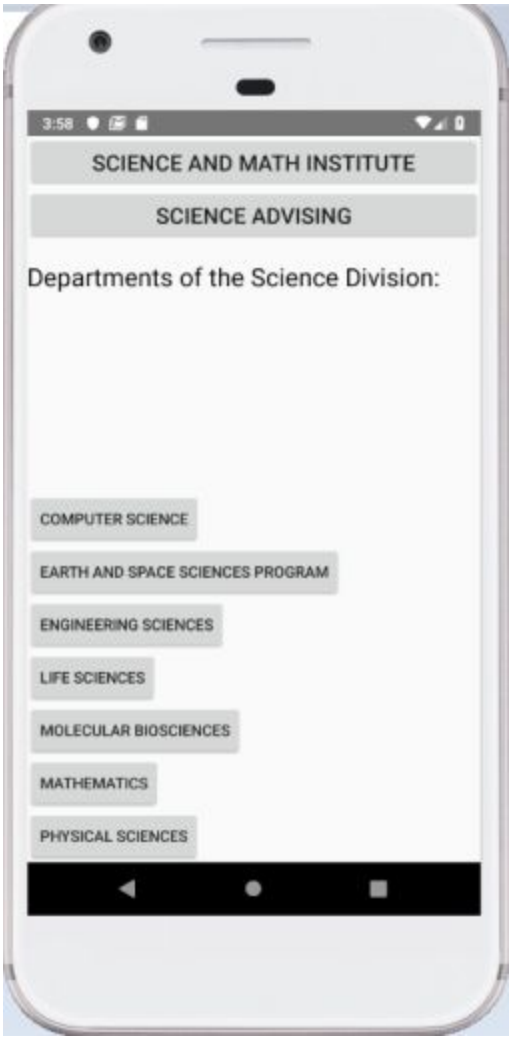
3.2.1.2 Test Case #2 - General_Information button
1. Purpose
General Information button takes to GeneralInfoActivity
2. Input
Press General Information button
3. Expected Output

4. Pass/Fail Criteria
Pass if GeneralInfoActivity opens, fail otherwise

3.2.2 Test Cases for Building L

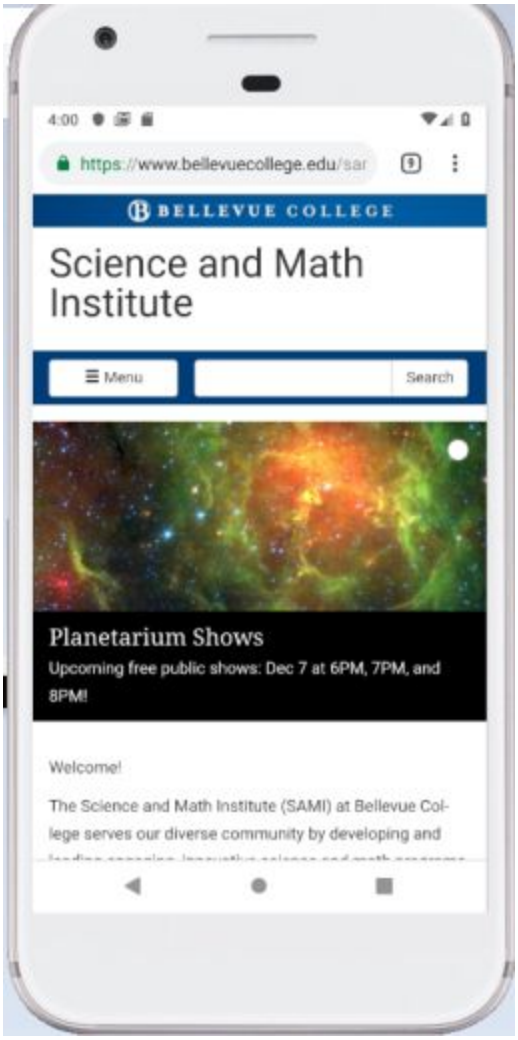
3.2.2.1 Test Case #1 - MainActivity_science_division_button

1. Purpose
Make sure that the click on science_division button opens ScienceDivision Activity
2. Input
Press “science_division” button
3. Expected Output



4. Pass/Fail Criteria
Pass: open ScienceDivision Activity with science departments
Fall: otherwise

3.2.2.2 - Test Case #2 - ScienceDivisionActivity_SAMI_button
1. Purpose
Make sure that the click on “SAMI” button opens “Science and Math Institute“ web page in the browser
2. Input
Press “SAMI” button
3. Expected Output



4 Pass/Fail Criteria
Pass: App switches activity to the browser and open SAMI web page
Fall: otherwise

3.2.2.3 Test Case #3 - ScienceDivisionActivity_science_advising_button

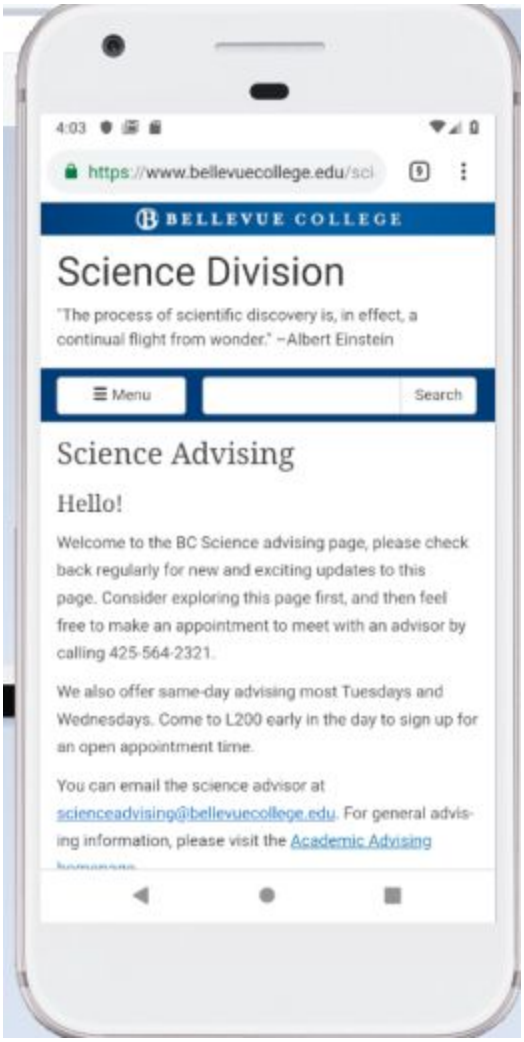
1. Purpose

Make sure that the click on “science_advising” button opens “Science Advising“ web page in the browser

2. Input

Press “science_advising” button

3. Expected Output

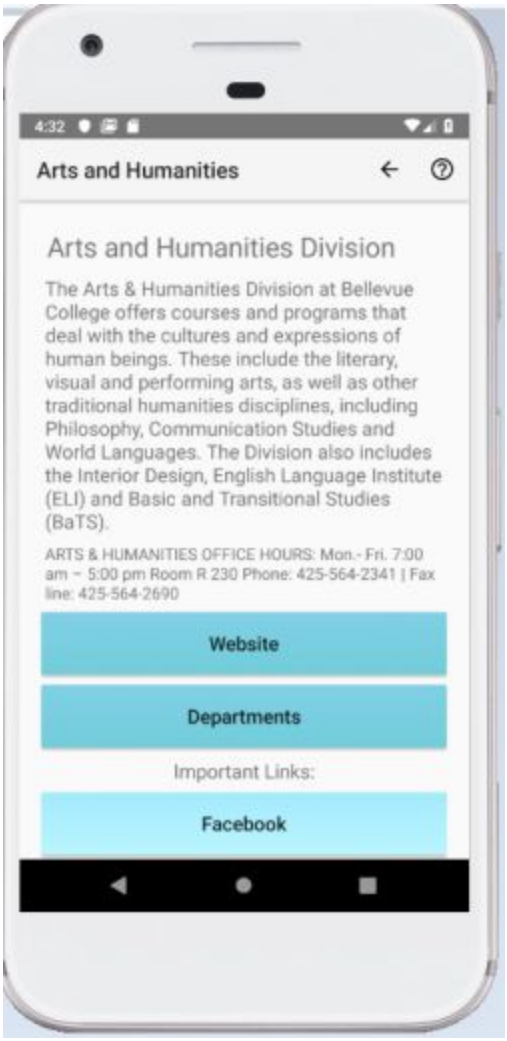


4. Pass/Fail Criteria
Pass: App switches activity to the browser and open Science Advising web page
Fall: otherwise

3.2.3 Test Cases for Building R

3.2.3.1 Test Case #1 - Arts and Humanities Button

1. Purpose
Ensure the arts and humanities button properly brings up the related information.
2. Input
Press the “arts and humanities” button
3. Expected Output



4. Pass/Fail Criteria

Passes if shows, fails if it fails to display information.

3.2.3.2 Test Case #2 - ELI Button

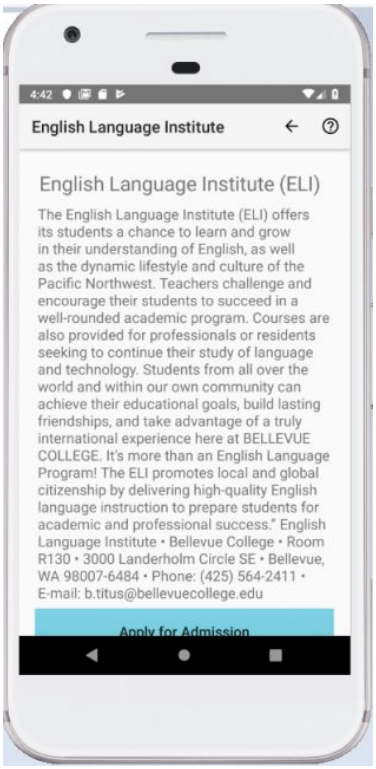
1. Purpose

Brings up a new activity regarding ELI specific options

2. Input

Press the “ELI” button

3. Expected Output



4. Pass/Fail Criteria

Passes if activity launches, fails if it fails to launch

3.2.3.3 Test Case #3 - Dance Studio Button

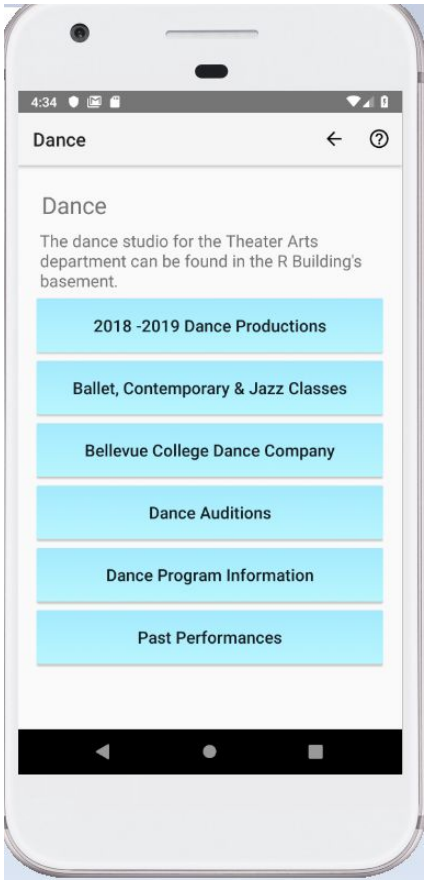
1. Purpose

Ensure the Dance Studio button properly brings up the related information.

2. Input

Press the “Dance Studio” button

3. Expected Output



4. Pass/Fail Criteria

Passes if shows, fails if it fails to display information.

3.2.3.4 Test Case #4 - ABE Button

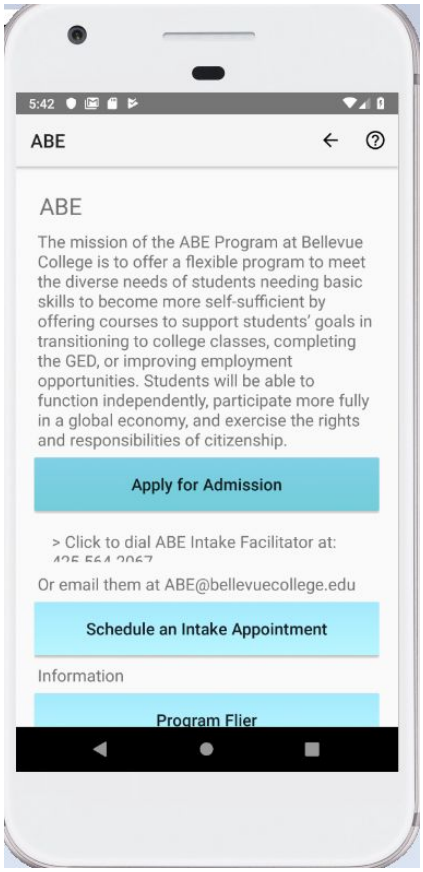
1. Purpose

Ensure the ABE button properly brings up the related information.

2. Input

Press the “ABE” button

3. Expected Output



4. Pass/Fail Criteria

Passes if shows, fails if it fails to display information.

3.2.3.5 Test Case #5 - HR TextView

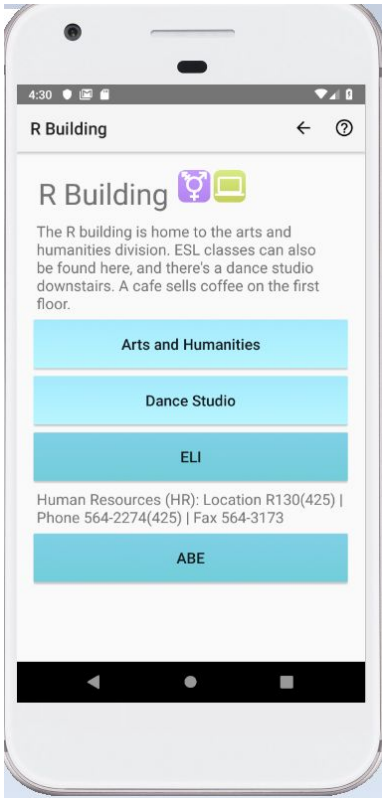
1. Purpose

Ensure the HR Textview properly brings up the related information.

2. Input

Open the R Building page

3. Expected Output



4. Pass/Fail Criteria

Passes if shows, fails if it fails to display information.

3.2.4 Test Cases for Building S

3.2.4.1 Test Case #1 - Science Division Website

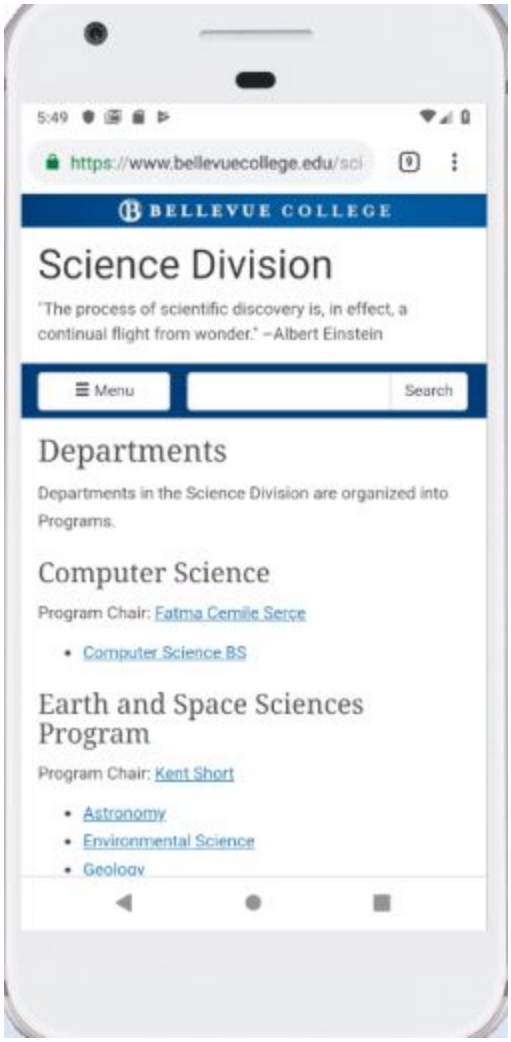
1. Purpose

Make sure that the click on “Science Division Website” button opens the website.

2. Input

Click on “Tutoring Information” button

3. Expected Output



4. Pass/Fail Criteria

Passes if website shows. Fails if not opened..

3.2.4.2 Test Case #2 - S Building Departments

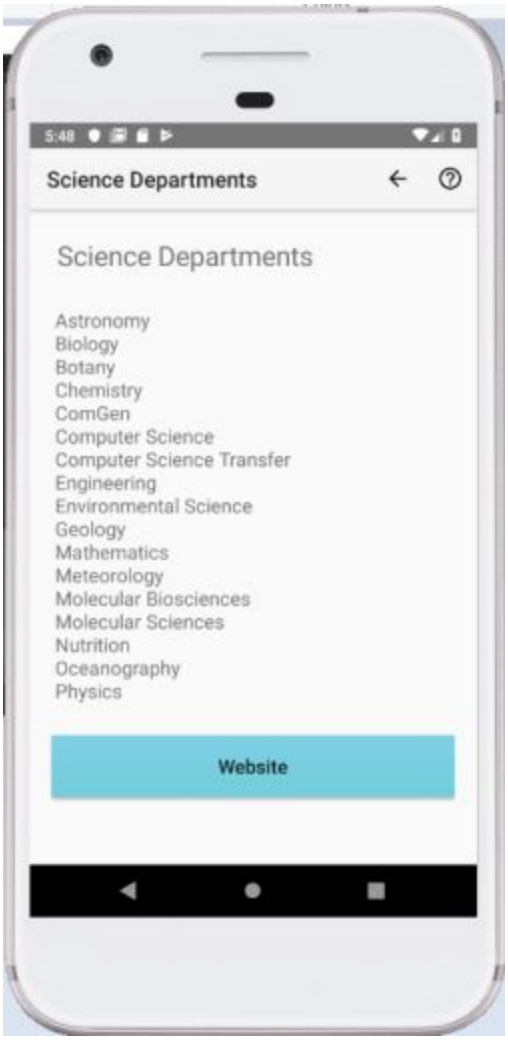
1. Purpose

Make sure that the click on “S Building Departments” button opens list of departments.

2. Input

Click on “S Building Divisions” button

3. Expected Output



4. Pass/Fail Criteria

Passes if list shows. Fails if no list available.

3.2.4.3 Test Case #3 - Science Clubs button

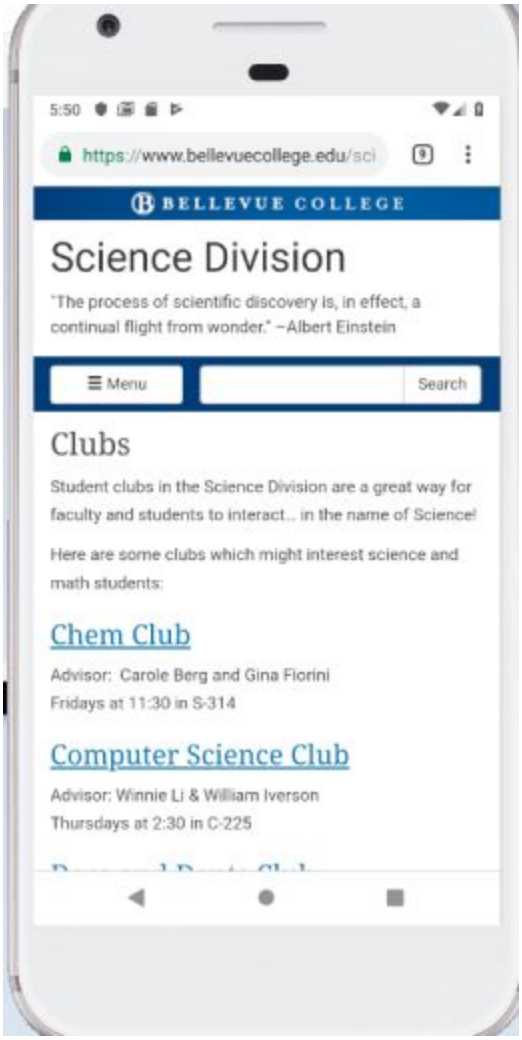
1. Purpose

Make sure that the click on “Science Clubs” button opens the science clubs page.

2. Input

Click on “Science Clubs” button

3. Expected Output



4. Pass/Fail Criteria

Passes if page opens. Fails if page doesn't open.

3.2.5 Test Cases for Image Recognition

3.2.5.1 Test Case #1 - Recognition the image

1. Purpose

Make sure that the app allow to recognise the upload image.

2. Input

Live stream throw camera (the view on the picture, that must be recognised)

3. Expected Output

3d object (airplane)

4. Pass/Fail Criteria

Pass: The object (airplane) is displayed.

3.2.5.2 Test Case #2 - 35’ angle of image view
1. Purpose
Make sure that the app allow to recognise the upload image from at least 35’.
2. Input
Live stream throw camera (the view on the picture, that must be recognised; visibility angle around 35’)
3. Expected Output
3d object (airplane)
4. Pass/Fail Criteria
Pass: The object (airplane) is displayed.

3.2.5.3 Test Case #3 - Display XML File
1. Purpose
Display an XML file we can edit later based on image recognition
2. Input
Live stream from phone camera
3. Expected Output
XML File (object)
4. Pass/Fail Criteria
Pass: The object (XML file) is displayed.

3.2.5.4 Test Case #4 - Change angle of XML file
1. Purpose
Models often come out at the wrong angle for our needs. Alter the vector to make the object appear at the correct orientation.
2. Input
Live stream from phone camera
3. Expected Output
XML File (object)
4. Pass/Fail Criteria
Pass: The object (XML) is displayed in the correct orientation.

3.2.5.5 Test Case #5 - XML file object phone button
1. Purpose
The button on the XML object correctly opens the phone intent.
2. Input
Button press
3. Expected Output
Launched phone intent
4. Pass/Fail Criteria
Pass: The browser activity successfully launches

3.2.5.6 Test Case #6 - Building recognition

1. Purpose

Recognize a letter from one of the buildings.

2. Input

Live stream from phone camera

3. Expected Output

AR object

4. Pass/Fail Criteria

Pass: The object is displayed over the letter of the building.

3.2.5.7 Test Case #7 - Multi Image Recognition

1. Purpose

Recognize multiple different images

2. Input

Live stream through camera and bitmap in the application

3. Expected Output

The same AR object on all images that are recognized

4. Pass/Fail Criteria

Pass: The object is displayed over the image in front of the camera

3.2.5.28 Test Case #28 - Background is transparent

1. Purpose

The background behind the activity is transparent

2. Input

None

3. Expected Output

When activity is launched, background shows the image behind it

4. Pass/Fail Criteria

Pass: The image is displayed behind the activity

3.2.5.29 Test Case #29 - Back Button

1. Purpose

Back button on taskbar navigates back to the AR activity

2. Input

Button press

3. Expected Output

Previous activity is opened again

4. Pass/Fail Criteria

Pass: The previous activity successfully opens

3.2.5.30 Test Case #30 - Theme

1. Purpose

The theme should be light, transparent, and have no action bar

2. Input
none
3. Expected Output
none
4. Pass/Fail Criteria
Pass: The correct theme is displayed with each activity

4 Requirements Traceability Matrix

Requirement-ID Requirement Description	Design Component	TestCase #
FR6 - Interact with Overlays	Housing Building Activity	3.2.1.1
FR6 - Interact with Overlays	Housing Building Activity	3.2.1.2
FR6 - Interact with Overlays	L Building Activity	3.2.2.1
FR6 - Interact with Overlays	L Building Activity	3.2.2.2
FR6 - Interact with Overlays	L Building Activity	3.2.2.3
FR6 - Interact with Overlays	R Building Activity	3.2.3.1
FR6 - Interact with Overlays	R Building Activity	3.2.3.2
FR6 - Interact with Overlays	R Building Activity	3.2.3.3
FR6 - Interact with Overlays	R Building Activity	3.2.3.4
FR6 - Interact with Overlays	R Building Activity	3.2.3.5
FR6 - Interact with Overlays	S Building Activity	3.2.4.1
FR6 - Interact with Overlays	S Building Activity	3.2.4.2
FR6 - Interact with Overlays	S Building Activity	3.2.4.3
FR5 - recognize building	Image Recognition	3.2.5.1
FR5 - recognize building	Image Recognition	3.2.5.2

FR5 - recognize building	Image Recognition	3.2.5.3
FR5 - recognize building	Image Recognition	3.2.5.4
FR5 - recognize building	Image Recognition	3.2.5.5
FR5 - recognize building	Image Recognition	3.2.5.6
FR5 - recognize building	Image Recognition	3.2.5.7

5 Responsibilities

Each member is responsible for testing each feature they add prior to adding to the group project on GitHub.

6 Staffing and Training Needs

TBD

7 Schedule

TBD