Test Plan for RaiderNAV

Table of Contents

1. Unit Testing3		
		1.1 AddressMap Unit Tests3
		1.2 ScheduleEntryList Unit Tests5
		1.3 ScheduleSingleEntry Unit Tests8
2.	Use	Case Testing12
		2.1 Story 112
		2.2 Story 217
		2.3 Story 319
		2.4 Story 421
		2.5 Story 523
		2.6 Story 624
		2.7 Story 724
		2.8 Story 824
		2.9 Story 925
		2.10 Story 1027
		2.11 Story 1127
		2.12 Story 1227
		2.13 Story 1327
		2.14 Story 1427
		2.15 Story 1528
		2.16 Story 1628
		2.17 Story 1728
		2.18 Story 1828
		2.20 Story 2031
		2.21 Story 2131
		2.22 Story 2232
		2.23 Story 2332
		2.24 Story 2432
		2.25 Story 2535
		2.26 Story 2635
		2.27 Story 2735
		2.28 Story 2835
		2.29 Story 2936
		2 30 Story 3039

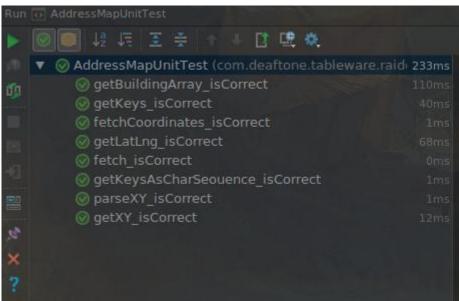
3. Acceptance Testing42

1. Unit Testing

1.1 AddressMap Unit Tests

```
package com.deaftone.tableware.raidernav;
import org.junit.Before;
import org.junit.BeforeClass;
import org.junit.Test;
import static org.junit.Assert.*;
public class AddressMapUnitTest {
 @Before
 public void initialize() {
    AddressMap.initialize();
 @Test
 public void getKeys isCorrect() {
    assertEquals("ADMIN", AddressMap.getKeys().iterator().next());
 @Test
 public void getKeysAsCharSeouence isCorrect() {
    assertEquals("AGRI", AddressMap.getKeysAsCharSequence()[4]);
  }
 @Test
 public void getXY isCorrect() {
    assertEquals(-101.874702,AddressMap.getXY("ADMIN")[1],.1);
  }
 @Test
 public void parseXY isCorrect() {
    assertEquals(33.583427, AddressMap.parseXY("33.583427, -101.874702")[0],.1);
 @Test
 public void getLatLng isCorrect() {
    assertEquals(33.587275, AddressMap.getLatLng("ENGCTR").latitude, 1);
```

```
@Test
public void getBuildingArray_isCorrect() {
    assertEquals("ADMIN",AddressMap.getBuildingArray().iterator().next());
}
@Test
public void fetch_isCorrect() {
    assertEquals("33.587275, -101.875771", AddressMap.fetch("ENGCTR"));
}
@Test
public void fetchCoordinates_isCorrect() {
    assertEquals("33.583427, -101.874702",AddressMap.fetchCoordinates("ADMIN"));
    assertEquals(null,AddressMap.fetchCoordinates("GARBAGE HALL"));
}
```

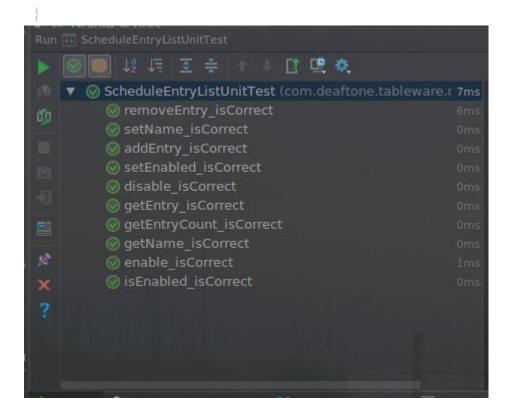


1.2 ScheduleEntryList Unit Tests

```
package com.deaftone.tableware.raidernav;
import org.junit.Before;
import org.junit.Test;
import static org.junit.Assert.assertEquals;
public class ScheduleEntryListUnitTest {
 ScheduleEntryList sel;
 private ScheduleSingleEntry sse;
 private final String coursenumber = "RUSN 1502";
 private final String building = "Foreign Language";
 private final String starttime = "0900";
 private final String endtime = "0950";
 private boolean days = {false, true, true, true, true, true, false};
 @Before
 public void initialize() {
    sel = new ScheduleEntryList();
    sse= new ScheduleSingleEntry(coursenumber, building, starttime, endtime, days);
 @Test
 public void addEntry isCorrect() {
    sel.addEntry(sse);
    assertEquals(building, sel.getEntry(0).getBuilding());
  @Test
 public void removeEntry isCorrect() {
    sel.removeEntry(sse);
    assertEquals(0, sel.getEntryCount());
  @Test
 public void getEntry isCorrect() {
    sel.addEntry(sse);
```

```
assertEquals(building, sel.getEntry(0).getBuilding());
@Test
public void getEntryCount isCorrect() {
  assertEquals(0,sel.getEntryCount());
@Test
public void getName isCorrect() {
  assertEquals(null,sel.getName());
  sel.setName("nomad");
  assertEquals("nomad",sel.getName());
@Test
public void setName isCorrect() {
  sel.setName("House");
  assertEquals("House",sel.getName());
@Test
public void enable isCorrect() {
  sel.enable();
  assertEquals(true,sel.isEnabled());
@Test
public void disable_isCorrect() {
  sel.disable();
  assertEquals(false,sel.isEnabled());
@Test
public void setEnabled_isCorrect() {
  sel.setEnabled(false);
  assertEquals(false,sel.isEnabled());
```

```
@Test
public void isEnabled_isCorrect() {
    assertEquals(false,sel.isEnabled());
    sel.setEnabled(true);
    assertEquals(true,sel.isEnabled());
}
```

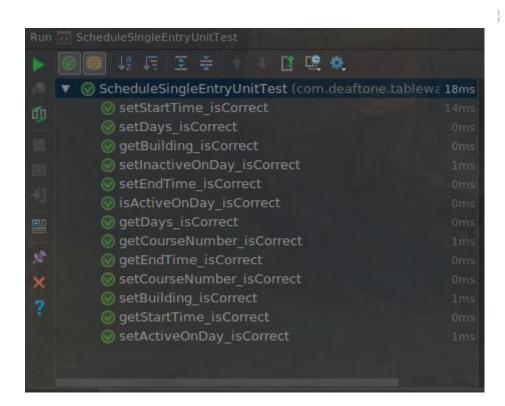


1.3 ScheduleSingleEntry Unit Tests

```
package com.deaftone.tableware.raidernay;
import org.junit.Before;
import org.junit.Test;
import static org.junit.Assert.assertEquals;
public class ScheduleSingleEntryUnitTest {
 private ScheduleSingleEntry sse;
 private final String coursenumber = "RUSN 1502";
 private final String building = "Foreign Language";
 private final String starttime = "0900";
 private final String endtime = "0950";
 private boolean days = {false, true, true, true, true, true, false};
 @Before
 public void initialize() {
    sse = new ScheduleSingleEntry(
         coursenumber, building, starttime, endtime, days);
 @Test
 public void getCourseNumber isCorrect() {
    assertEquals(coursenumber, sse.getCourseNumber());
 @Test
 public void setCourseNumber isCorrect() {
    sse.setCourseNumber("CS 4352");
    assertEquals("CS 4352", sse.getCourseNumber());
 @Test
 public void getBuilding_isCorrect() {
    assertEquals(building, sse.getBuilding());
 @Test
 public void setBuilding isCorrect() {
```

```
sse.setBuilding("Holden Hall");
  assertEquals("Holden Hall", sse.getBuilding());
@Test
public void getStartTime_isCorrect() {
  assertEquals(starttime, sse.getStartTime());
@Test
public void setStartTime isCorrect() {
  sse.setStartTime("0300");
  assertEquals("0300", sse.getStartTime());
}
@Test
public void getEndTime isCorrect() {
  assertEquals(endtime, sse.getEndTime());
@Test
public void setEndTime isCorrect() {
  sse.setEndTime("0400");
  assertEquals("0400", sse.getEndTime());
@Test
public void getDays isCorrect() {
  assertEquals(false, sse.getDays()[0]);
  assertEquals(true, sse.getDays()[1]);
@Test
public void setDays_isCorrect() {
  boolean[] newdays = {true, false, true, true, true, true, false};
  sse.setDays(newdays);
  assertEquals(true, sse.getDays()[0]);
```

```
assertEquals(false, sse.getDays()[1]);
}
@Test
public void setActiveOnDay isCorrect() {
  sse.setActiveOnDay(0);
  assertEquals(true, sse.getDays()[0]);
  sse.setActiveOnDay(1);
  assertEquals(true, sse.getDays()[1]);
@Test
public void setInactiveOnDay_isCorrect() {
  sse.setInactiveOnDay(0);
  assertEquals(false, sse.getDays()[0]);
  sse.setInactiveOnDay(1);
  assertEquals(false, sse.getDays()[1]);
@Test
public void isActiveOnDay_isCorrect() {
  sse.setActiveOnDay(0);
  sse.setInactiveOnDay(1);
  assertEquals(true, sse.isActiveOnDay(0));
  assertEquals(false, sse.isActiveOnDay(1));
```



2. Use Case Testing

Formatting

Title: Actors:

Requirement: Main Scenario: Alternatives:

Test Situations: Test Coverage:

Base: number of main and alternative scenarios = Test situations cover all cases

100% coverage of use case

Test Record:

Test Case:

2.1 Story 1

Use Case: Add Schedule

Summary: App User creates a new class schedule

Actors: User **Dependency:**

Precondition: The application should be displaying the My Schedules screen

Description:

- 1. User presses Create New Schedule button on the My Schedules screen.
- 2. The application prompts the user to enter the schedule name.
- 3. User inputs schedule name and presses OK.
- 4. The system adds the schedule to a visible list on the My Schedules screen.

Alternatives:

3a. The user presses Cancel

3a.1 The system displays the My Schedules screen.

Postcondition: The user has created a schedule.

Title: Add Schedule

Actors: User Requirement: R1 Main Scenario:

- 1. User presses Create New Schedule button on the My Schedules screen.
- 2. The application prompts the user to enter the schedule name.
- 3. User inputs schedule name and presses OK.
- 4. The system adds the schedule to a visible list on the My Schedules screen.

Alternatives:

- 3a. The user presses Cancel
- 3a.1 The system displays the My Schedules screen.
- 3b. The user inputs nothing and presses OK

3b.1 The system displays the My Schedules screen.

Test Situations:

- 1. New schedule is added to a visible list on the My Schedules screen.
- 2. User presses Cancel
- 3. The user inputs nothing and presses OK

Test Coverage:

Base: number of main and alternative scenarios = 3

Test situations cover all 3 cases 100% coverage of use case

Test Record:

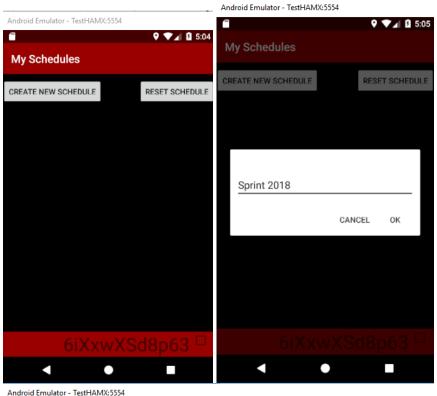
Test Case 1:

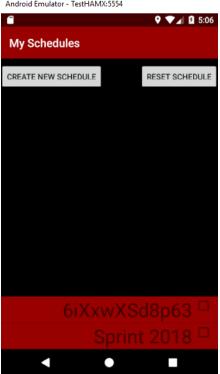
User presses Create New Schedule button on the My Schedules screen.

The application prompts the user to enter the schedule name.

User inputs schedule name and presses OK

The system adds the schedule to a visible list on the My Schedules screen.





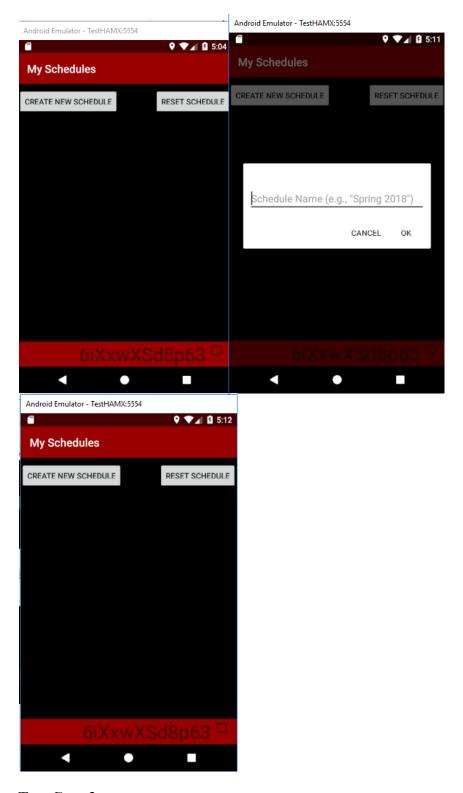
Test Case 2:

User presses Create New Schedule button on the My Schedules screen.

The application prompts the user to enter the schedule name.

The user presses Cancel

The system displays the My Schedules screen

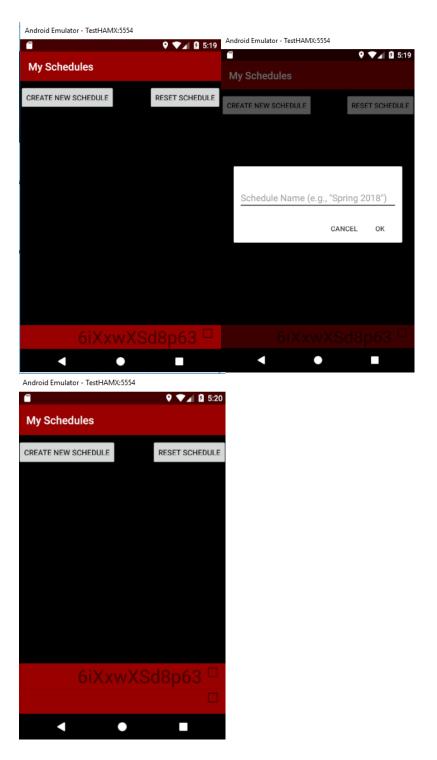


Test Case 3:

User presses Create New Schedule button on the My Schedules screen. The application prompts the user to enter the schedule name. The user inputs nothing and presses OK

The user inputs nothing and presses OK

An empty schedule is added



Note on R1 Test Result:

The user inputs nothing and presses OK, the empty schedule should not be added.

Use Case: Save Class schedule

Summary: App User saves a created class schedule

Actors: User

Dependency: View Saved Schedules

Precondition: The user has entered the course's details (name, building, days of week,

and the starting and ending times) in the course edit screen.

Description:

1. User presses the Save button.

Alternatives:

1a. If the schedule saved for a specific day overlaps with regards to time with another schedule on the same day, the application displays an error message.

Postcondition: The class schedule is saved.

Title: Save Class schedule

Actors: User Requirement: R2 Main Scenario:

User presses the Save button after entering course details

The class schedule is saved

Alternatives:

1a. The schedule saved for a specific day overlaps with regards to time with another schedule on the same day,

1a.1 The application displays an error message.

Test Situations:

- 1. User presses the Save button after entering course details, the class schedule is saved
- 2. The schedule saved for a specific day overlaps with regards to time with another schedule on the same day

Test Coverage:

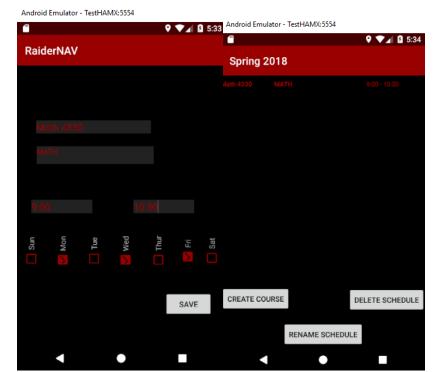
Base: number of main and alternative scenarios = 2 Test situations cover all 2 cases 100% coverage of use case

Test Record:

Test Case 1:

User presses the Save button after entering course details

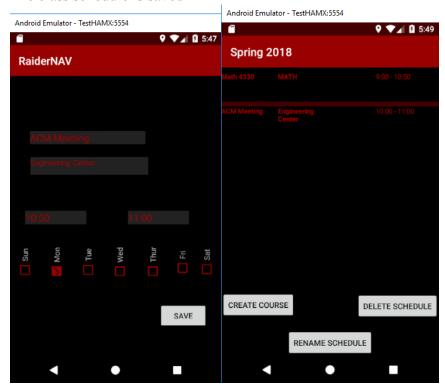
The class schedule is saved



Test Case 2:

The schedule saved for a specific day overlaps with regards to time with another schedule on the same day

The class schedule is saved



Note on R2 Test:

Time overlapped course should not be saved.

Use Case: Edit Class schedule

Summary: App User edits a previously saved class schedule.

Actors: User **Dependency:**

Precondition: The application should be in the My Schedules screen and the list of

schedules must have at least one element.

Description:

1. The user presses desired schedule from list on My Schedules screen.

- 2. The application lists the courses saved to that schedule along with Create Course, Delete Schedule, and Rename Schedule buttons.
- 3. The user presses a desired course from the displayed list.
- 4. The application displays modifiable fields for the course name, building, start and end times, and days of the week, along with Save and Delete buttons.
- 5. The user fills in fields as desired and presses Save button.

Alternatives:

Postcondition: The user has edited a previously saved class schedule.

Title: Edit Class schedule

Actors: User Requirement: R3 Main Scenario:

- 1. The user presses desired schedule from list on My Schedules screen.
- 2. The application lists the courses saved to that schedule along with Create Course, Delete Schedule, and Rename Schedule buttons.
- 3. The user presses a desired course from the displayed list.
- 4. The application displays modifiable fields for the course name, building, start and end times, and days of the week, along with Save and Delete buttons.
- 5. The user fills in fields as desired and presses Save button.

Alternatives: None

Test Situations:

Edited class schedule is saved

Test Coverage:

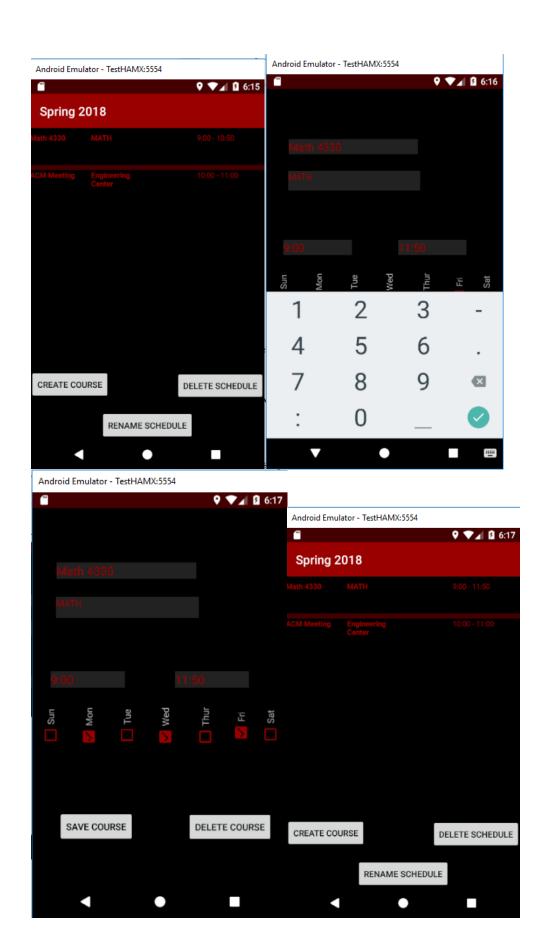
Base: number of main and alternative scenarios = 1

Test situations cover one case 100% coverage of use case

Test Record:

Test Case:

Edit Class schedule



Use Case Name: Delete Class Schedule

Summary: This user case will allow user to delete a previously created class schedule.

Actor: User

Dependency: View Saved Schedule

Precondition: The application should be in the My Schedules screen and the list of schedules must have at least one element.

Description:

1. The user presses desired schedule from list on My Schedules screen.

- 2. The application lists the courses saved to that schedule along with Create, Delete, and Rename buttons.
- 3. The user presses the Delete Schedule button.
- 4. The application deletes the schedule from the schedule list and returns the user to the My Schedules screen.

Alternatives:

Postcondition: User has deleted the class schedule.

Title: Delete Class Schedule

Actors: User Requirement: R4 Main Scenario:

- 1. The user presses desired schedule from list on My Schedules screen.
- 2. The application lists the courses saved to that schedule along with Create, Delete, and Rename buttons.
- 3. The user presses the Delete Schedule button.
- 4. The application deletes the schedule from the schedule list and returns the user to the My Schedules screen.

Alternatives:

None

Test Situations:

Class Schedule is deleted

Test Coverage:

Base: number of main and alternative scenarios = 1

Test situations cover one case 100% coverage of use case

Test Record:

Test Case:

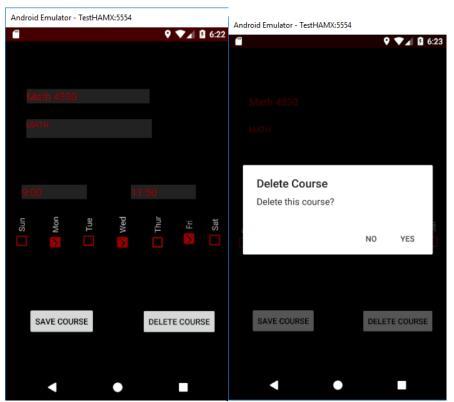
The user presses desired schedule from list on My Schedules screen.

The application lists the courses saved to that schedule along with Create,

Delete, and Rename buttons.

The user presses the Delete Schedule button.

The application deletes the schedule from the schedule list and returns the user to the My Schedules screen.



Android Emulator - TestHAMX:5554



Use Case Name: Navigate to Campus Destinations

Summary: This use case allows users to select a building name/acronym from a drop-down menu which the system will then determine a geographic location for and add to the daily route.

Actor: User and Mapping Engine

Dependency: The name (or acronym) of the building must be known by the user. **Precondition:** The user has selected the "Add course" or "Create Schedule" option. **Description:**

- 1. The user selects the desired building name/acronym from the drop-down menu.
- 2. The user enters other pertinent details for the course/schedule and selects "Save".
- 3. The system passes the option selected to the CoordinateMap class.
- 4. The CoordinateMap class returns the location mapped to the desired selection.

Alternatives:

Postcondition: Coordinates representing the location of the user's selection have been received by the system.

Title: Navigate to Campus Destinations **Actors:** User and Mapping Engine

Requirement: R5 Main Scenario:

- 1. The user selects the desired building name/acronym from the drop-down menu.
- 2. The user enters other pertinent details for the course/schedule and selects "Save".
- 3. The system passes the option selected to the CoordinateMap class.
- 4. The CoordinateMap class returns the location mapped to the desired selection.

Alternatives: None

Test Situations: Test Coverage:

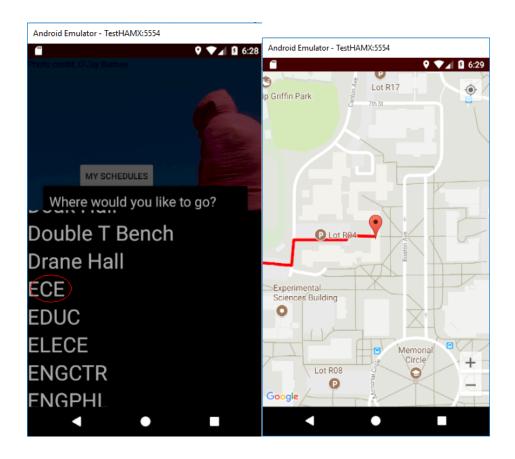
Base: number of main and alternative scenarios = 1

Test situations cover one case 100% coverage of use case

Test Record:

Test Case:

The correct location information was passed to system after user selected building.



2.6 Story 6

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2.7 Story 7

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2.8 Story 8

Use Case: Calculate Shortest Route

Actor: User

Dependency: None **Precondition:** None.

Description:

- 1. The user determines starting point and destination they are going to
- 2. The app finds the shortest route from the user

Alternatives:

Postcondition: The shortest route between starting point and destination has been calculated.

Title: Calculate Shortest Route

Actors: User and app

Requirement: R8 Main Scenario:

- 1. The user determines starting point and destination they are going to
- 2. The app finds the shortest route from the user

Test Situations:

Shortest route is generated on the map by the system.

Test Coverage:

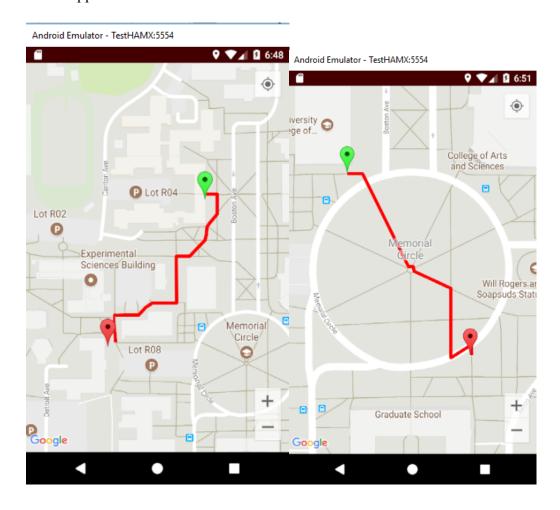
Base: number of main and alternative scenarios = 1

Test situations cover one case 100% coverage of use case

Test Record:

Test Case:

- 1. The user determines starting point and destination they are going to
- 2. The app finds the shortest route from the user



2.9 Story 9

Use Case: Display current location

Actor: User

Dependency: None

Precondition: User has already calculated a route

Description:

- 1. User starts their route towards the destination
- 2. Current location is retrieved from the GPS
- 3. Every 3-5 seconds, the time sends an input to the GPS to recalculate location
- 4. Current location is constantly displayed to the user on the map

Postcondition:

Title: Display current location

Actors: App Requirement: R9 Main Scenario:

App shows user's current location on the map.

Test Situations:

App shows user's current location on the map.

Test Coverage:

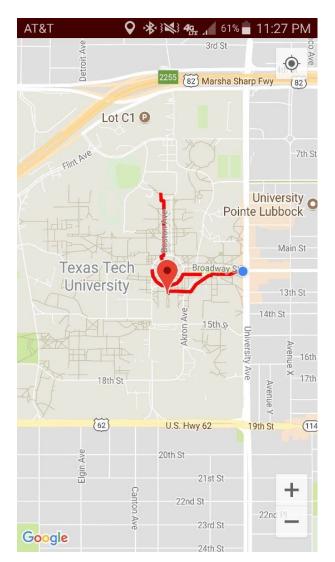
Base: number of main and alternative scenarios = 1

Test situations cover one case 100% coverage of use case

Test Record:

Test Case:

App shows user's current location (the blue dot) on the map.



2.10 Story 10

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2.11 Story 11

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2.12 Story 12

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2.13 Story 13

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2.14 Story 14

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2.15 Story 15

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2.16 Story 16

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2.17 Story 17

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2.18 Story 18

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2.19 Story 19

Use Case: Edit Class schedule

Summary: App User edits a previously saved class schedule.

Actors: User **Dependency:**

Precondition: The application should be in the My Schedules screen and the list of

schedules must have at least one element.

Description:

- 1. The user presses desired schedule from list on My Schedules screen.
- 2. The application lists the courses saved to that schedule along with Create Course, Delete Schedule, and Rename Schedule buttons.
- 3. The user presses a desired course from the displayed list.
- 4. The application displays modifiable fields for the course name, building, start and end times, and days of the week, along with Save and Delete buttons.
- 5. The user fills in fields as desired and presses Save button.

Postcondition: The user has edited a previously saved class schedule.

Title: Edit Class schedule

Actors: User Requirement: R19 Main Scenario:

- 1. User click the existing schedule.
- 2. User edits the destination location, class time in the schedule.
- 3. User click the "save" button to finish editing

Alternatives: None

Test Situations:

Edited class schedule is saved

Test Coverage:

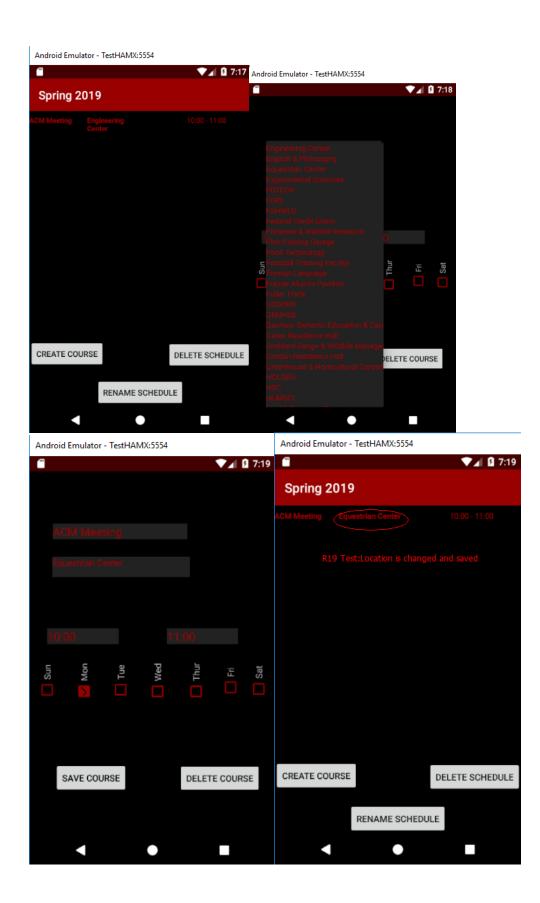
Base: number of main and alternative scenarios = 1

Test situations cover 1 case 100% coverage of use case

Test Record:

Test Case:

Edit schedule



2.20 Story 20

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2.21 Story 21

Use Case: Display privacy policy

Summary: The app displays the privacy policy when the application is loaded the first

time.

Actor: User

Precondition: User has opened the app for the first time.

Description:

1. The privacy implications of using the application is displayed to the user.

2. The user is prompted to select OK if he agrees to the terms.

Postcondition: The application home screen is loaded.

Title: Display privacy policy

Actors: User

Requirement: R21 Main Scenario:

1. The privacy implications of using the application is displayed to the user.

2. The user is prompted to select OK if he agrees to the terms.

Test Situations:

The privacy implication is displayed to the user.

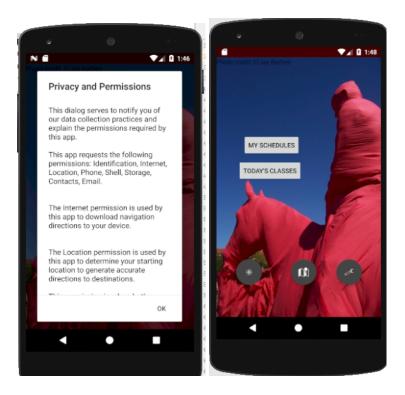
Test Coverage:

Base: number of main and alternative scenarios = 1 Test situations cover all 1 cases 100% coverage of use case

Test Record:

Test Case:

User opens RaiderNav first time, the privacy implications is displayed to the user, after user click OK, APP shows the main screen.



2.22 Story 22

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2.23 Story 23

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2.24 Story 24

Use Case: Navigate to Unscheduled Location

Summary: The app shall allow the user to generate a map to a location which is not

within any schedule and which will not be saved to any schedule.

Actor: User

Precondition: User is currently on the main screen.

Description:

- 1. The user presses the unscheduled location button.
- 2. The system displays the list of locations to choose from.
- 3. The user selects a location from the list and confirms the decision.
- 4. The system displays a map to the destination.

Alternatives:

- 3a. The user selects the "Cancel" button.
- 3a.1 The system returns the user to the main screen.

Postcondition: The user has generated a map to an unscheduled destination.

Title: Navigate to Unscheduled Location

Actors: User

Requirement: R24 Main Scenario:

- 1. The user presses the unscheduled location button.
- 2. The system displays the list of locations to choose from.
- 3. The user selects a location from the list and confirms the decision.
- 4. The system displays a map to the destination.

Alternatives:

a. The user selects the "Cancel" button.

3a.1 The system returns the user to the main screen.

Test Situations:

- 1. App shows the selected building's location on the map
- 2. App returns to the main screen after user selected "Cancel"

Test Coverage:

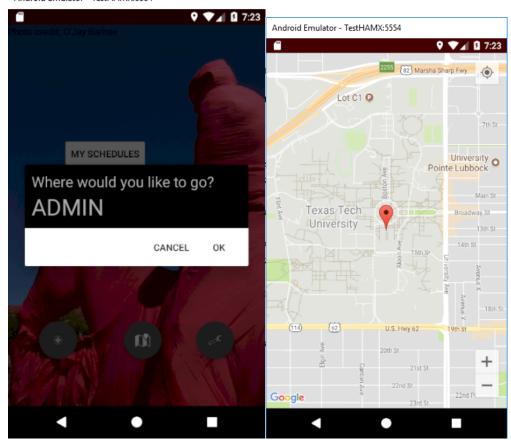
Base: number of main and alternative scenarios = 2

Test situations cover all 2 cases 100% coverage of use case

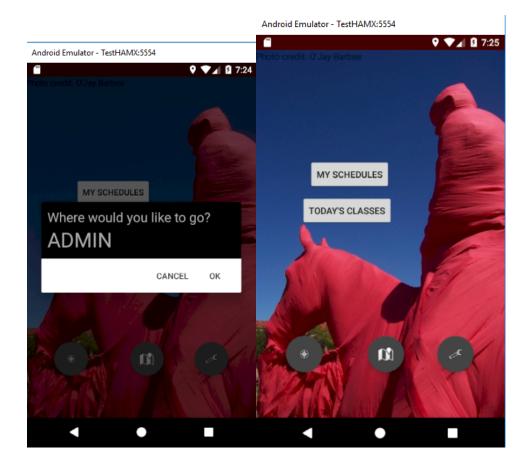
Test Record:

Test Case 1:

The user selects a location from the list and confirms the decision.



Test Case 2: The user selects the "Cancel" button.



2.25 Story 25

This section intentionally left blank.

2.26 Story 26

This section intentionally left blank.

2.27 Story 27

This section intentionally left blank.

2.28 Story 28

This section intentionally left blank.

Use Case: Rename Schedule

Summary: The app shall allow the user to rename a saved schedule.

Actor: User

Precondition: User previously saved a schedule in the app. User is currently on "My

Schedules" screen.

Description:

- 1. The user selects a saved schedule.
- 2. The system displays the schedule details.
- 3. The user selects the "Rename Schedule" button.
- 4. The system displays a prompt showing the current schedule name.
- 5. The user enters a replacement name for the selected schedule using the Android keyboard and selects "Ok".
- 6. The system returns the user to the "My Schedules" screen.

Alternatives:

5a. The user selects the "Cancel" button.

Postcondition: The user has successfully renamed a saved schedule.

Title: Rename Schedule

Actors: User

Requirement: R29 Main Scenario:

- 1. The user selects a saved schedule.
- 2. The system displays the schedule details.
- 3. The user selects the "Rename Schedule" button.
- 4. The system displays a prompt showing the current schedule name.
- 5. The user enters a replacement name for the selected schedule using the Android keyboard and selects "Ok".
- 6. The system returns the user to the "My Schedules" screen.

Alternatives:

5a. The user selects the "Cancel" button.

Test Situations:

1. New schedule name is saved

2. The user selects the "Cancel" button.

Test Coverage:

Base: number of main and alternative scenarios = 2

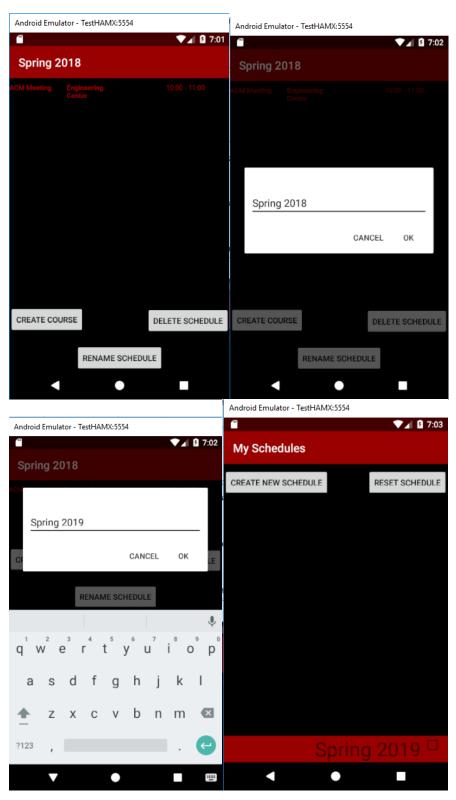
Test situations cover all 2 cases

100% coverage of use case

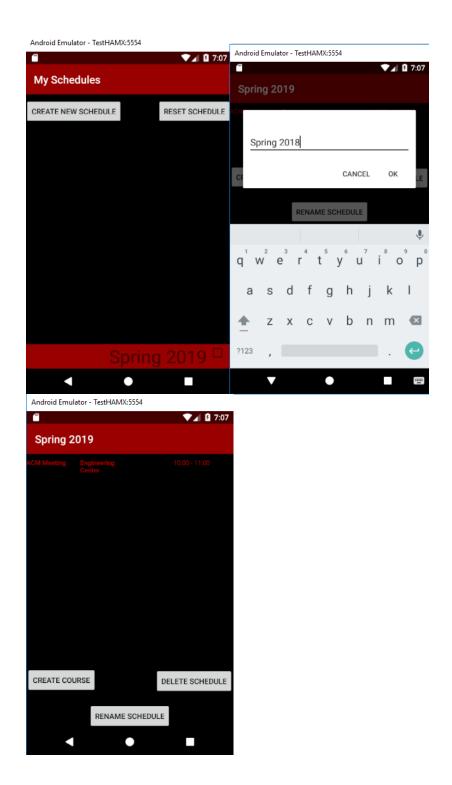
Test Record:

Test Case 1:

New schedule name is saved



Test Case 2: The user selects the "Cancel" button.



Use Case: Delete Notification

Summary: Before the user deletes a schedule, the user must be given a notification to ensure that the user wants to delete the schedule, because all data will be lost.

Actor: User

Precondition: The user is at the schedule screen.

Description:

- 1. The user presses the Delete button.
- 2. A notification is given to the user to confirm the deletion, along with an option to cancel and not delete the schedule and a Delete button to delete the schedule.
- 3. If the user presses Delete, then the schedule will permanently be deleted and the user is then taken back to the schedules page.

Alternatives:

3a. If the user presses cancel, then they will be taken back to the main schedule page. **Postcondition**: The user is returned to the schedule screen if they pressed Cancel or to the My Schedules screen if the user confirmed schedule deletion.

Title: Delete Notification

Actors: User

Requirement: R30 Main Scenario:

- 1. The user presses the Delete button.
- 2. A notification is given to the user to confirm the deletion, along with an option to cancel and not delete the schedule and a Delete button to delete the schedule.
- 3. If the user presses Delete, then the schedule will permanently be deleted and the user is then taken back to the schedules page.

Alternatives:

3a. If the user presses cancel, then they will be taken back to the main schedule page.

Test Situations:

- 1 Schedule is deleted after notified
- 2. Schedule keep remained after user chooses "Cancel" the delete operation.

Test Coverage:

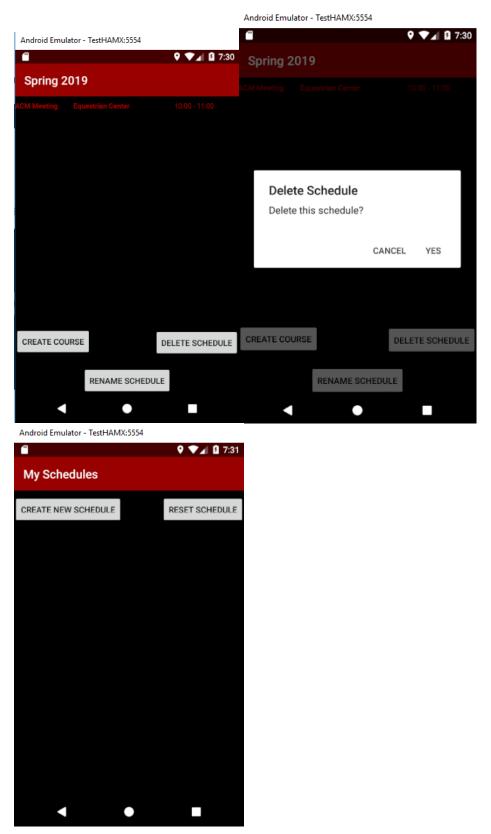
Base: number of main and alternative scenarios = 2

Test situations cover all 2 cases 100% coverage of use case

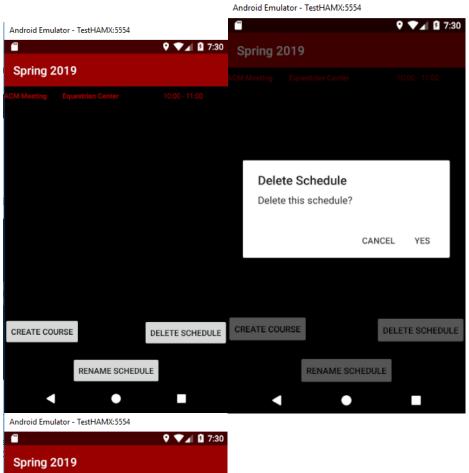
Test Record:

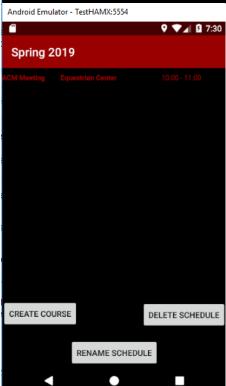
Test Case 1:

Schedule is deleted after notified



Test Case 2: Schedule keep remained after user chooses "Cancel" the delete operation.





3. Acceptance Testing

Acceptance Criteria

User stories 1-6, 8, 10-16, 21, 24, 29, and 30 must be implemented. Usability test scores must represent at least a 90% success rate.

Acceptance Evaluation

User stories 1-5, 8, 19, 21, 24, 29, and 30 implemented User stories 6 and 10-16 NOT implemented. User test score represents 92.8% success rate.

Acceptance Decision

Acceptance Rejected

Reason:

User stories 6 and 10-16 NOT implemented.