Refactoring:

1. **Method Rename:**

**Mapbox:**Renamed *navigationSearchButton* method to *navigationSearchButtonClicked (lines 110 and 131 of NavigationFragment.java)*

1. **Additional Comments:**

**Mapbox:**Added *// Add cached search address marker* (line 88 of NavigationFragment.java)

Added *// Add cached current location marker* (line 96 of NavigationFragment.java)

Added *// Public method for moving current location information to AddToContactFragment* (line 117 of NavigationFragment.java)

Added *// Callback method invoked when the user selects the "Search" button from the Navigation menu item* (line 130 of NavigationFragment.java)

Added *// Try to get the latitude and longitude, otherwise show toast and catch exception and return* (line 143 of NavigationFragment.java)

Added *// If somehow latAndLng is still null, show toast and return (*line 152 of NavigationFragment.java)

Added *// Private function to prepare for map being shown*

*(*line 194 of NavigationFragment.java)

Added *// Public function that creates the intent and sends info through it in order to add a contact to ContactManager (*line 206 of MainActivity.java)

Added *// Retrieve extra strings to be sent to Contact Manager*

*(*line 211 of MainActivity.java)

Added *// Add extra strings to be sent to Contact Manager*

*(*line 219 of MainActivity.java)

Added *// Start the intent so that ContactManager can retrieve data*

*(*line 219 of MainActivity.java)

1. **Class/Method Removal:**

**Mapbox:**Removed unused *MarkerInfoWindow* class and unused *infowindow\_marker.xml.* This class was used in our initial implementation but was later replaced with the *NavigationInfoWindow* class. The same can be said for the *infowindow\_marker.xml* file which was later replaced with the *infowindow\_navigation.xml* file.

1. **Encapsulated Public Field**

**Mapbox:**

Changed *// Changed accessor on the following fields to private*

*// (lines 58, 66, and 74 of NavigationFragment.java)*

private boolean skipSearchBar = false;

private LineString routeToDisplay = null;

private LatLng initialLatAndLng = null;

Added *// Add get and set methods for the fields*

*// (lines 59-64, 67-72, and 75-80 of NavigationFragment.java)*

public boolean getSkipSearchBar() {

return skipSearchBar;

}

public void setSkipSearchBar(boolean newSkipSearchBar) {

skipSearchBar = newSkipSearchBar;

};

public LineString getRouteToDisplay() {

return routeToDisplay;

}

public void setRouteToDisplay(LineString newRouteToDisplay) {

routeToDisplay = newRouteToDisplay;

}

public LatLng getInitialLatAndLng() {

return initialLatAndLng;

}

public void setInitialLatAndLng(LatLng newInitialLatAndLng) {

initialLatAndLng = newInitialLatAndLng;

}

Changed *// Replaced mutations of now public fields with calls to setters*

*// (lines 82-83 of NavigationRoutesFragment.java)*

navFragment.setRouteToDisplay(routeToDisplay);

navFragment.setSkipSearchBar(true);

1. **Removed Magic Number**

**Mapbox:**

Added *// Add private constant fields for UC’s lat and long*

*// (lines 55-56 of NavigationFragment.java)*

private final double ucLat = 39.131080;

private final double ucLong = -84.517784;

Changed *// Replaced instances of these magic numbers with the new fields*

*// (lines 107 and 194 of NavigationRoutesFragment.java)*

initialLatAndLng = new LatLng(ucLat, ucLong);