3A04 Group 3: FIA
Detailed Design

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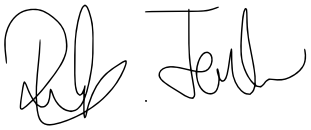

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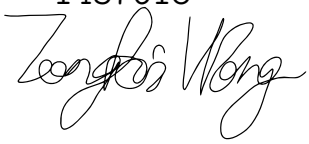

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March 28, 2018
Version 1.0

Contents

Table 1: **Revision History**

Version	Date	Notes
1.0	20/03/2018	Created and updated document
1.0	29/03/2018	Finalized document for revision 1

1 Introduction

1.1 Purpose

The purpose of this detailed design document is to provide guidance for the architecture of the Flag Identification (FIA) system. This document details how each aspect of the system communicates with one another and the fine details needed to implement the application. This document serves as a detailed reference for the developers of the application to utilize throughout implementation. This document can also be referenced throughout testing of the application.

1.2 System Description

The systems primary function is flag identification. The system will allow the user to upload an image of a flag through their Android Smartphone. The information will be handled by three system experts; colour expert, graph expert and GPS expert. With the help of the three experts, the system will be able to present the user with six flags that best match the flag uploaded. The user will be able to select which of the returned flags, if any, match their uploaded image. The application will allow the user to view their previously searched flags. Additionally, the application will allow users to see the most searched for flags across all users.

1.3 Overview

The following sections detail in-depth implementation details. Section 2 contains the state charts for each controller class in the FIA system; the View Controller, Forum Controller, State Controller, Colour Controller and GPS Controller. Section 3 consists of the sequence diagrams corresponding to the FIA system and the use cases detailed in the High-Level Architectural Design document. Section 4 details the detailed class diagram of the system. Appendix A details how each member of the development team contributed to the document.

2 State Charts for Controller Classes

2.1 View Controller

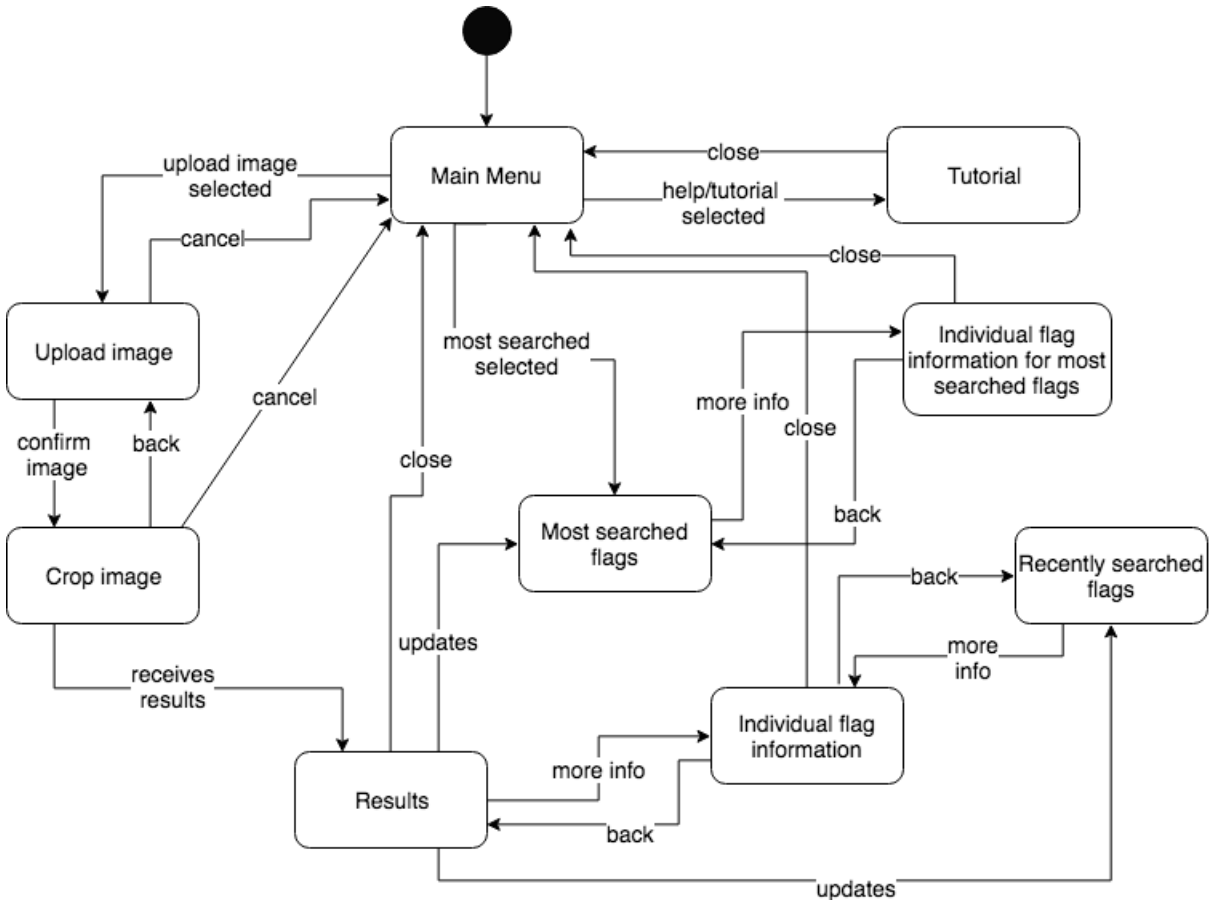

Figure 1: State chart for View Controller

2.2 Forum Controller

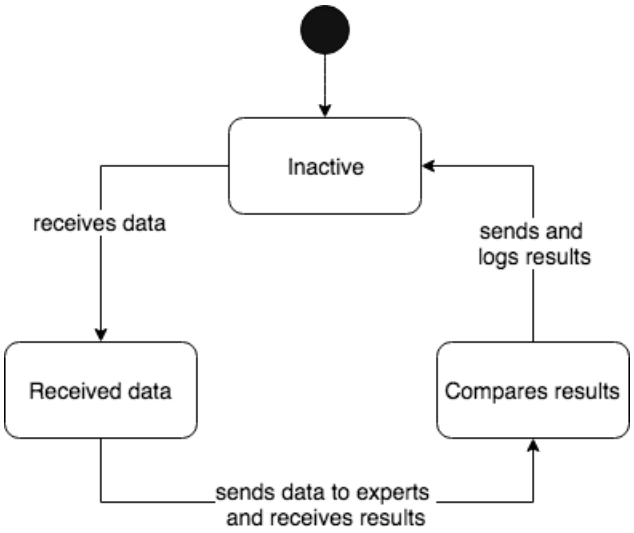

Figure 2: State chart for Forum Controller

2.3 Shape Controller

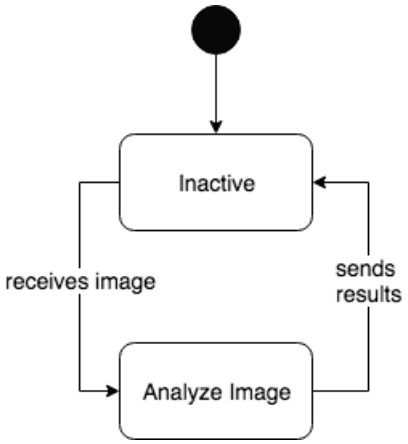

Figure 3: State chart for Shape Controller

2.4 Colour Controller

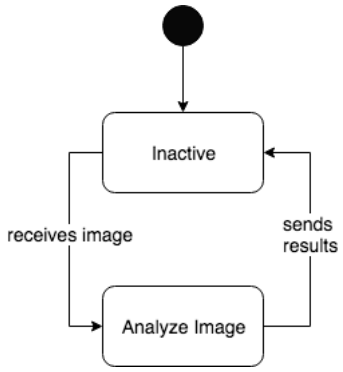

Figure 4: State chart for Colour Controller

2.5 GPS Controller

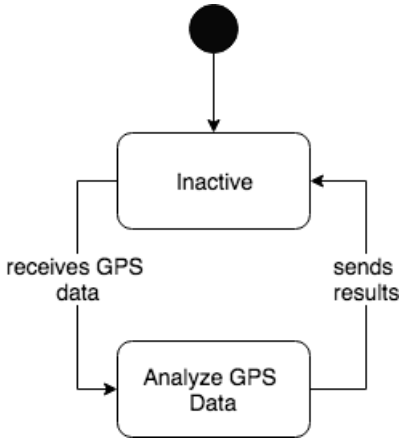

Figure 5: State chart for GPS Controller

3 Sequence Diagrams

Following are the sequence diagrams for each use case in the FIA system.

3.1 Use Case 1: Navigating to the Most Searched Flags Page

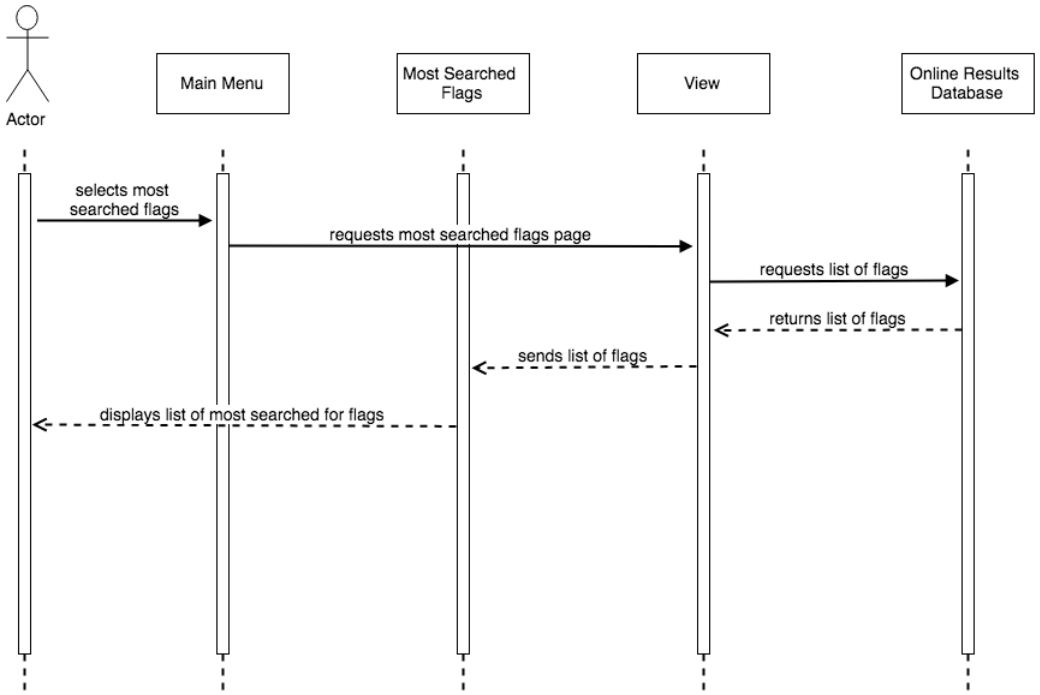

Figure 6: Sequence diagram for navigating to the most searched flags page

3.2 Use Case 2: Navigating to the Previous Results Page

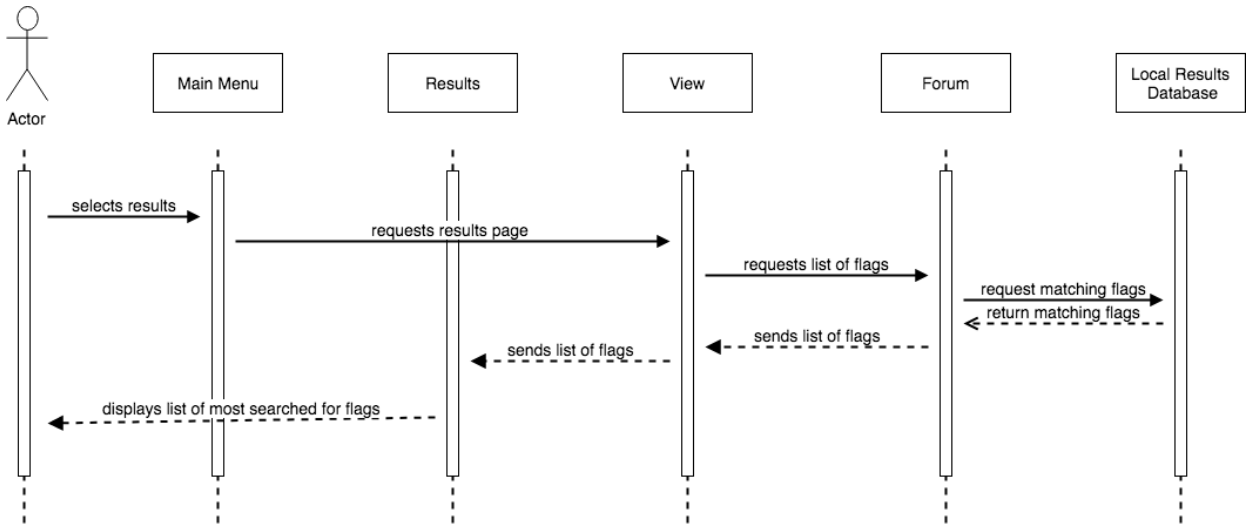

Figure 7: Sequence diagram for navigating to the previous results page

3.3 Use Case 3: Identifying a Flag

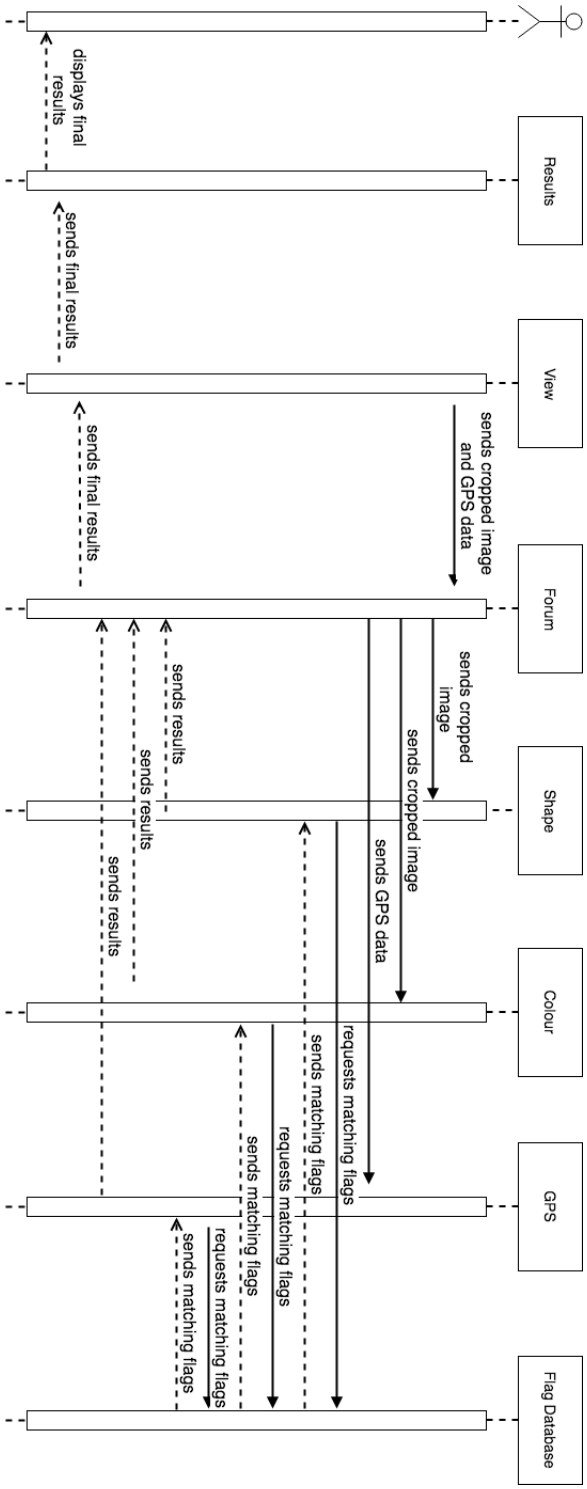

Figure 8: Sequence diagram for identifying a flag

3.4 Use Case 4: More Information from the Previous Results Page

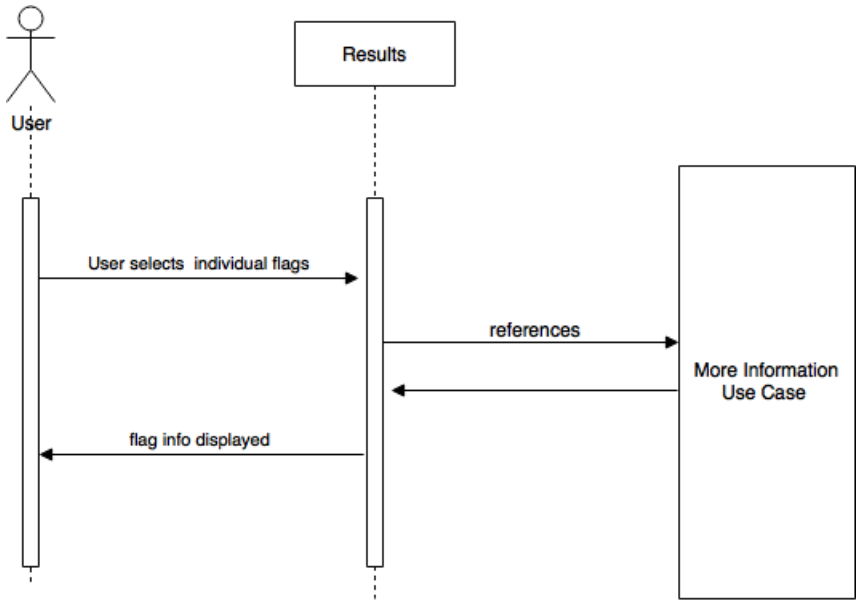

Figure 9: Sequence diagram for the user requesting more information on an individual flag from the previous results page

3.5 Use Case 5: More Information from the Most Searched Flags Page

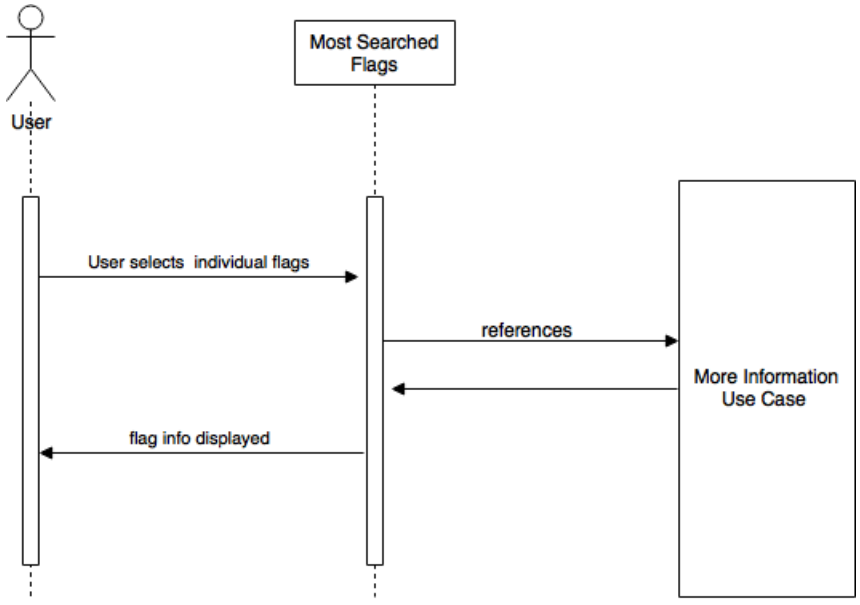

Figure 10: Sequence diagram for the user requesting more information on an individual flag from the most searched flags page

3.6 Use Case 6: More Information on a Flag

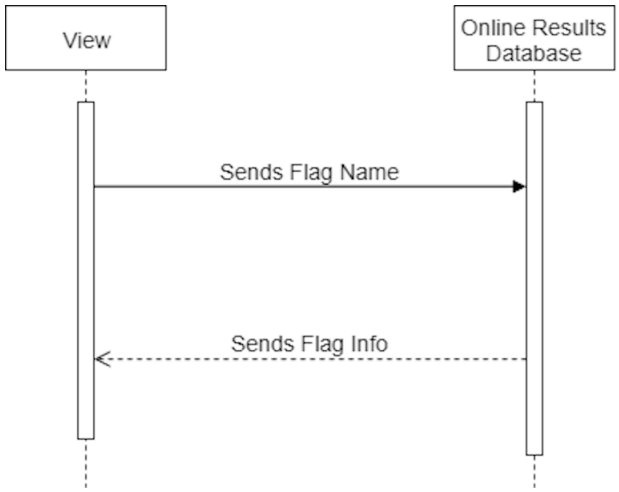

Figure 11: Sequence diagram for viewing more information on an individual flag

3.7 Use Case 7: User Uploads an Image

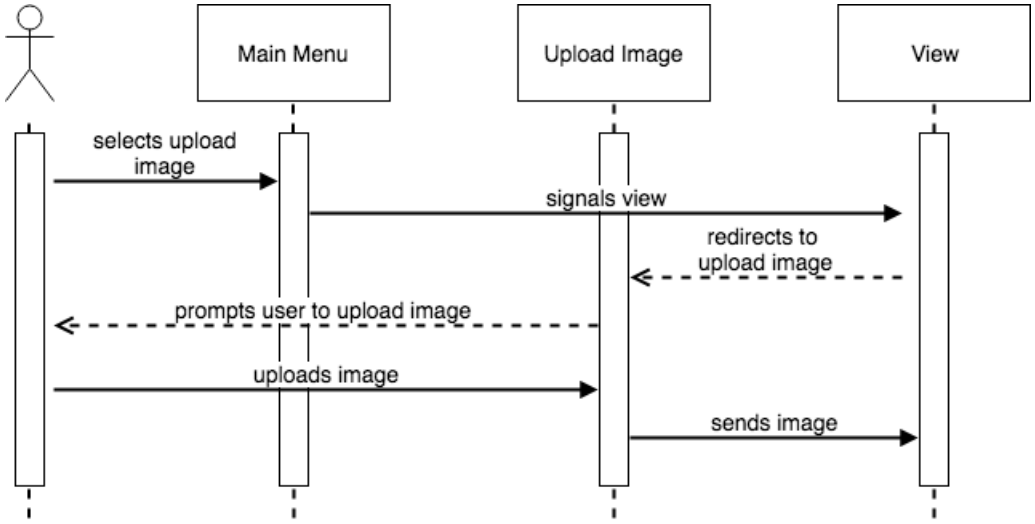

Figure 12: Sequence diagram for the user uploading an image

3.8 Use Case 8: User Crops an Image

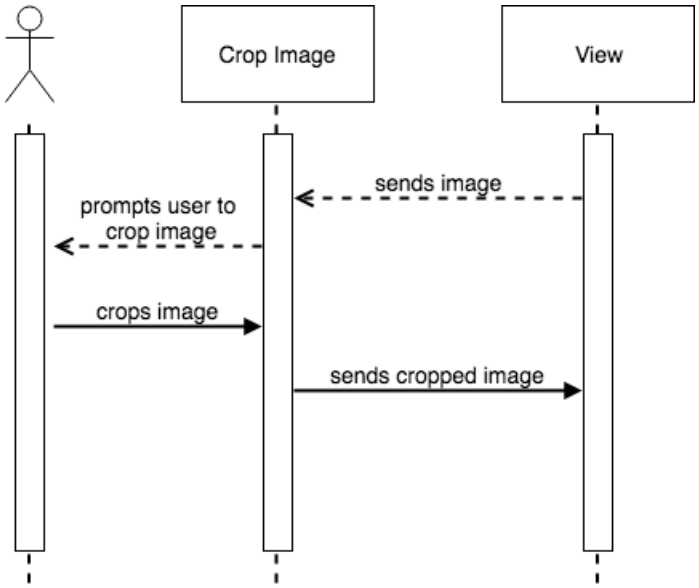

Figure 13: Sequence diagram for the user cropping an image

3.9 Use Case 9: User Selects the Correct Result

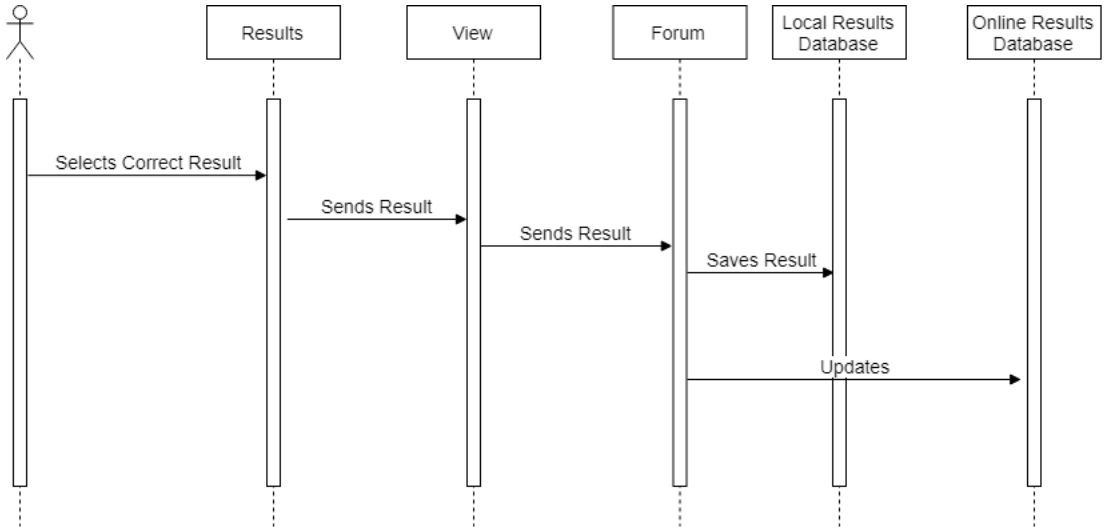

Figure 14: Sequence diagram for the user selecting the correct result

4 Detailed Class Diagram

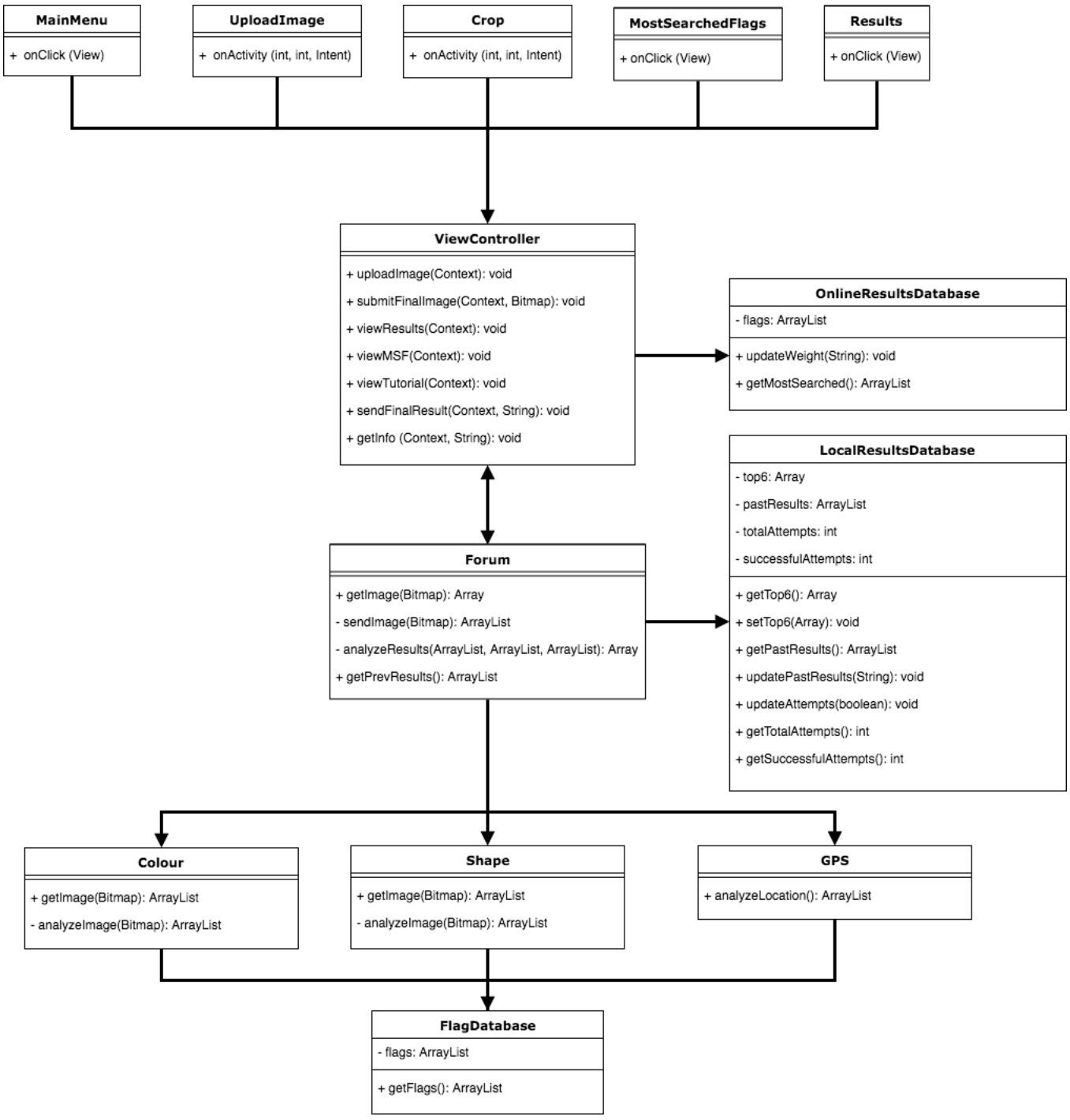

Figure 15: UML Class Diagram for the FIA System

A Division of Labour

- Section 1.1: Kathryn Kodama
- Section 1.2: Christopher Cagna, Dalip Jandir
- Section 1.3: Mariah Janet Lindsay, Tongfei Wang
- Section 2: Christopher Cagna, Dalip Jandir, Kathryn Kodama, Mariah Janet Lindsay, Tongfei Wang
- Section 3: Christopher Cagna, Dalip Jandir, Kathryn Kodama, Mariah Janet Lindsay, Tongfei Wang
- Section 4: Christopher Cagna, Dalip Jandir, Kathryn Kodama, Tongfei Wang