Detailed Architectural Design
21 Questions

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1 Introduction

This document is called the detailed architectural design document and it will be giving the stakeholders an in depth look at how the project, *21 Questions*, is designed. More precisely, this document outlines the details concerning each class as well as how classes interact with one another.

1.1 Purpose

The detailed architectural design document outlines the functionality of the system through the State Chart diagrams, and focuses on the detail of each class through the Detailed Class diagrams. The interactions among the classes, more specifically the messages passed between classes, will be defined in the Sequence diagrams. The main purpose of this document is to explain in detail the software system to be developed, which in this case is the application, *21 Questions*. Through the use of the various diagrams mentioned before, all components of the product and their relationships with each other are revealed in more detail. The main target audience for this document is the software developers as they need to see, in greater detail, how the system and its modules interact and how they are designed to work in relation to each other.

1.2 System Description

21 Questions is an android application that can be used as a location identifier whose intended use is for any user above the age of ten. The application requires minimal training, experience or technical expertise to use, and can be easily picked up and used by anyone. 21 Questions is a simple game that asks the user a series of twenty-one polar or binary questions to try to identify their area of interest. In this game the area of interest is limited to an establishment, building, place, or effigy with a focus on locations only with an end goal of displaying the result through Google Maps.

1.3 Overview

This document will not only outline the design, but the details of the *21 Questions* application from an implementation perspective. The document will begin from state perspective, in more detail how one gets from one state to another as well as which states follow each other. This is portrayed in the State Charts. This is followed by a sequence overview depicting how each class passes messages to one another. Finally the details of each class are illustrated in the Detailed Class diagram. These sections highlight the classes in greater detail, including how each class interacts with one another. This document easily lends itself to being a model for the implementation.

2 State Charts for Controller Classes

The following section contains state charts for the controller classes in the *21 Questions* application. Figures 1 and 2 are the state charts for the GUI and Question Controller classes, respectively.

2.1 Graphic User Interface Controller

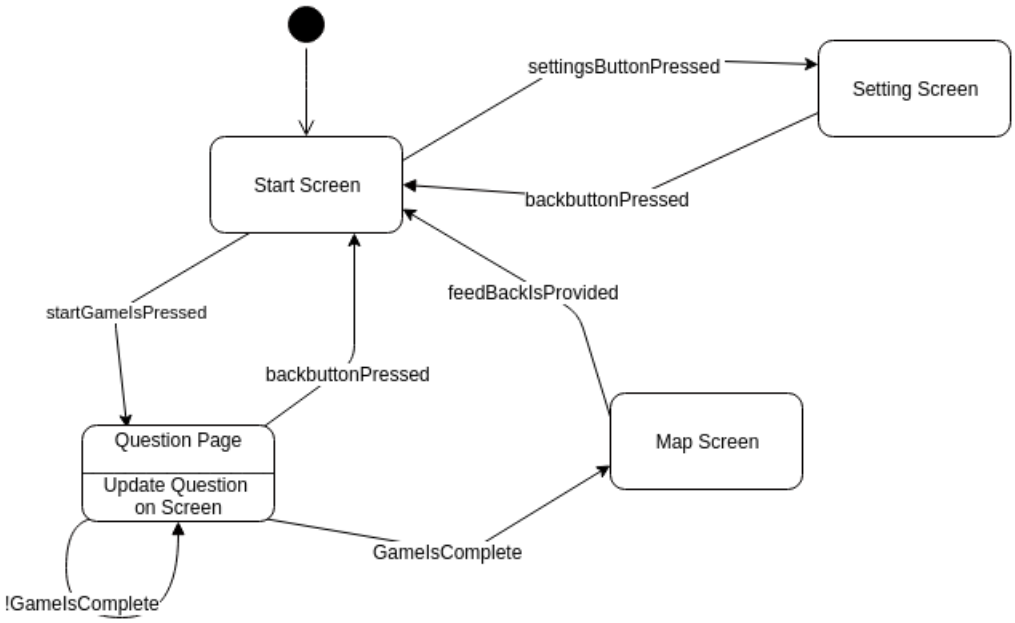

Figure 1: State chart for the GUI Controller class.

2.2 Question Controller

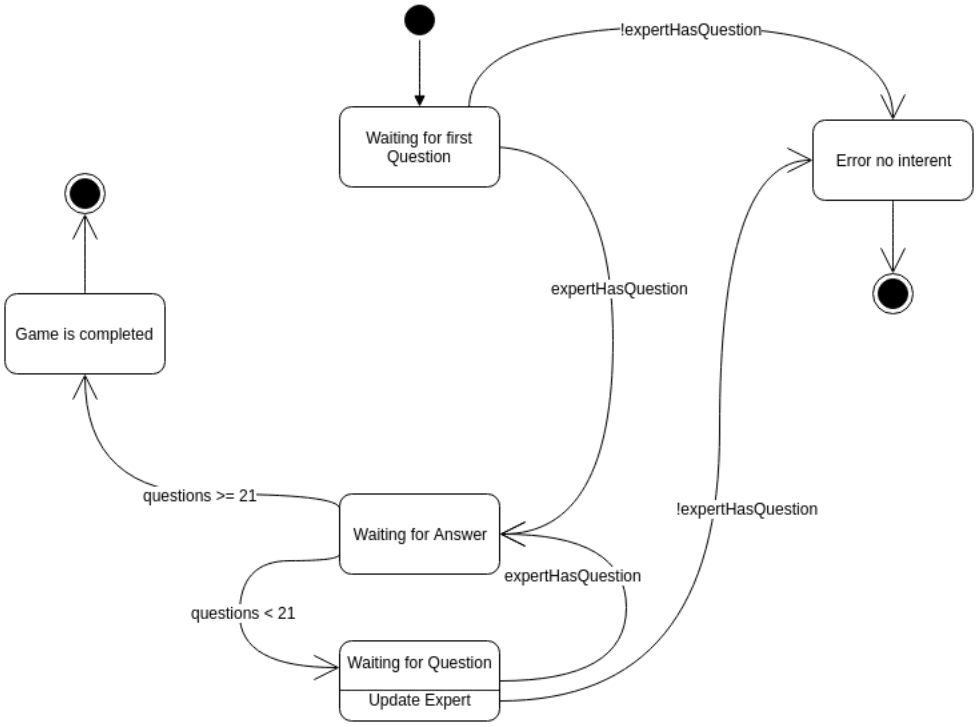

Figure 2: State chart for the Question Controller class.

2.3 Expert Controller

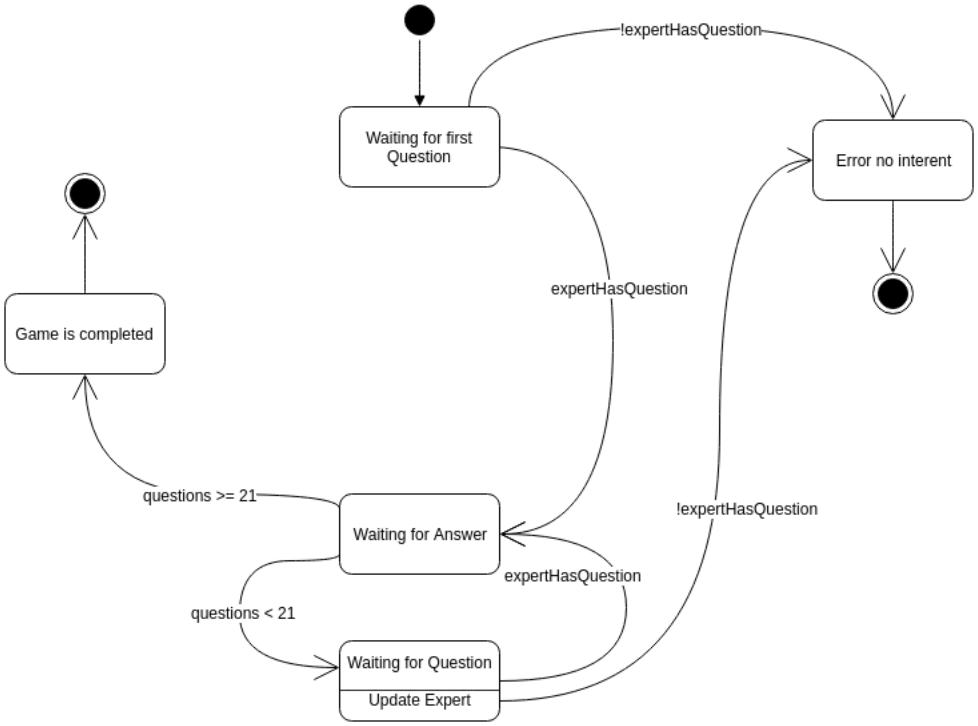

Figure 3: State chart for each Expert Subclass.

3 Sequence Diagrams

3.1 User wants to enter new search

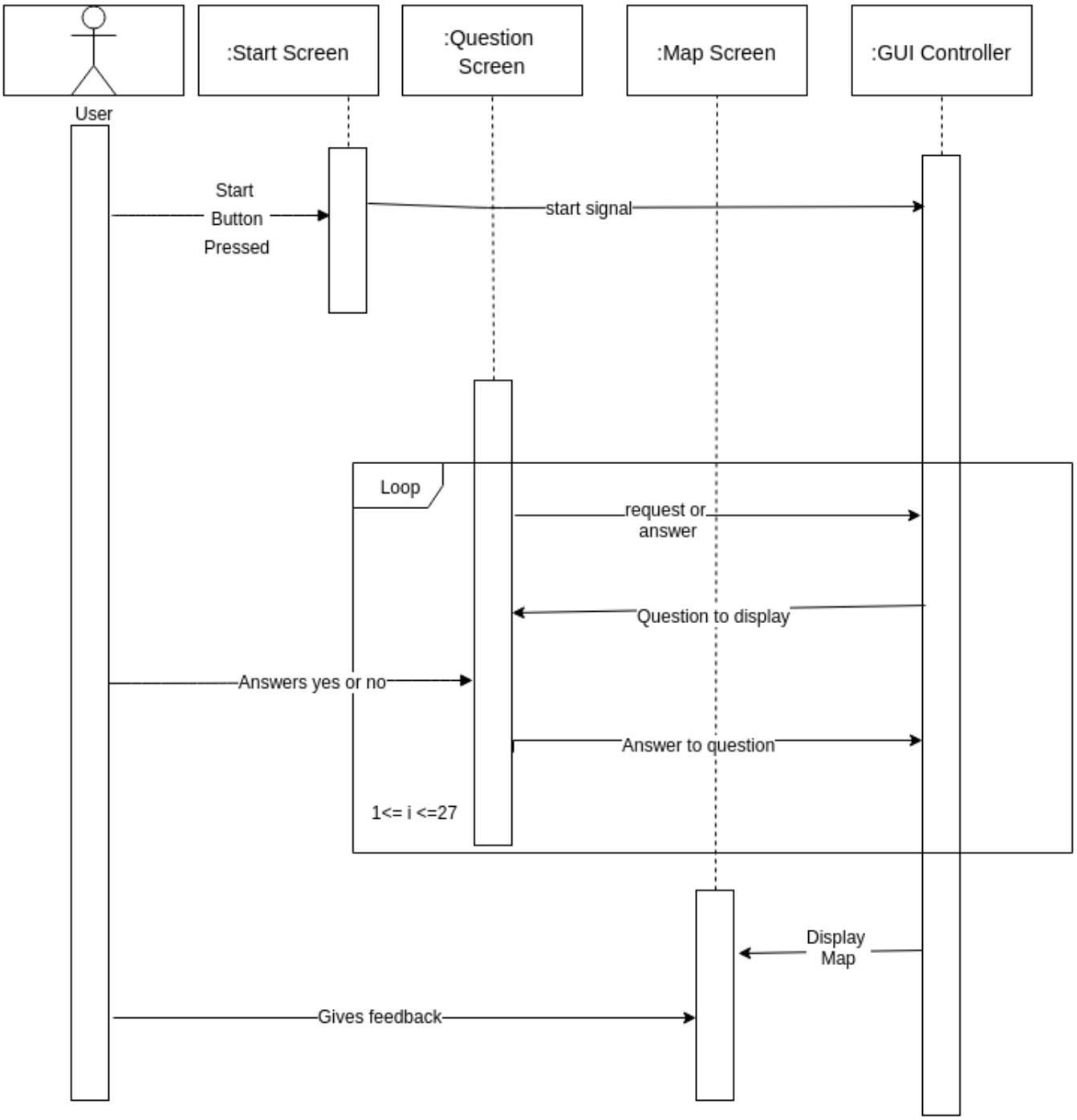

Figure 4: Sequence diagram for the user interaction of a new game/search.

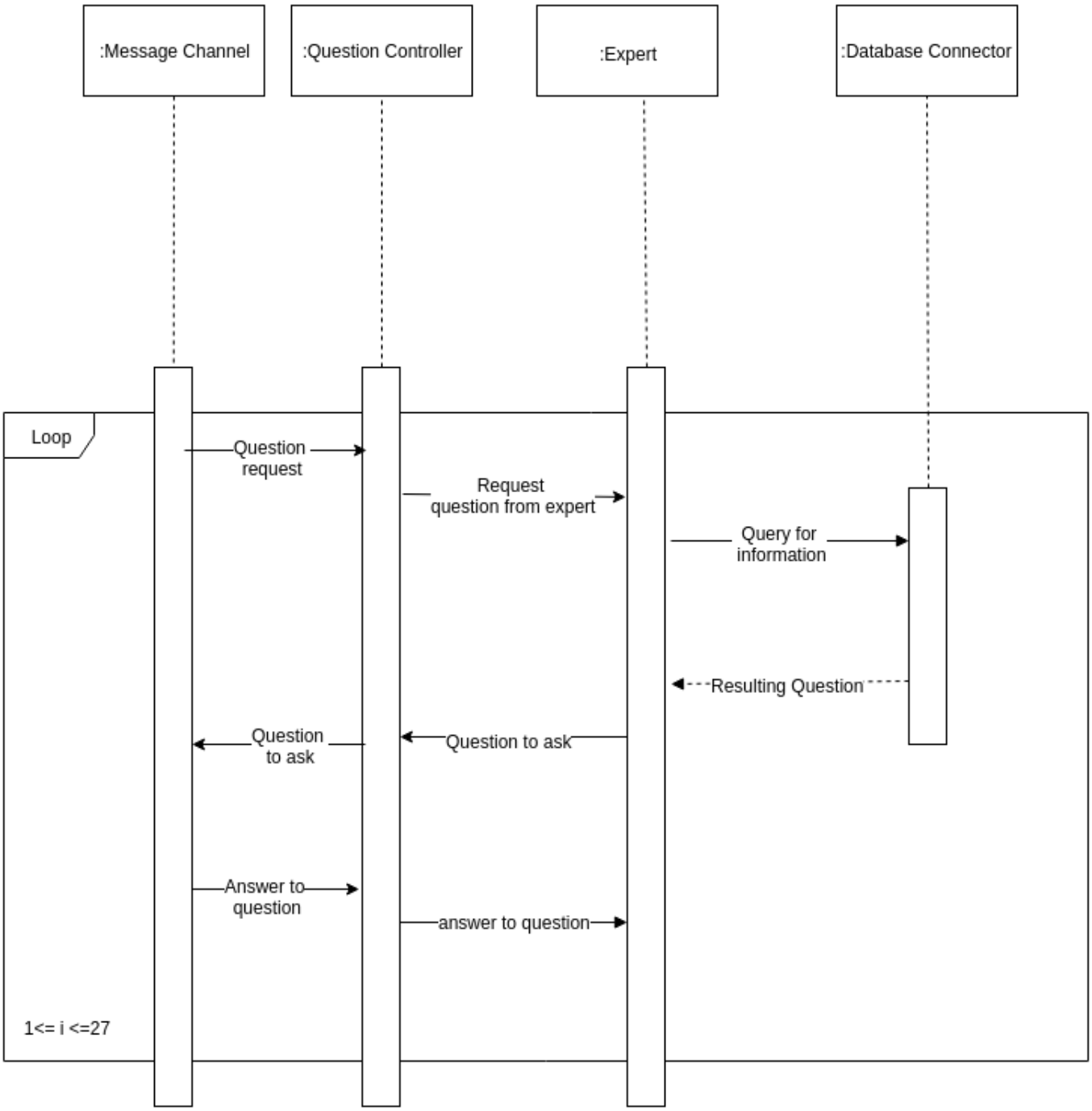

Figure 5: Sequence diagram for the application to provide the user with a question.

3.2 An unlisted establishment requests to be included in the application.

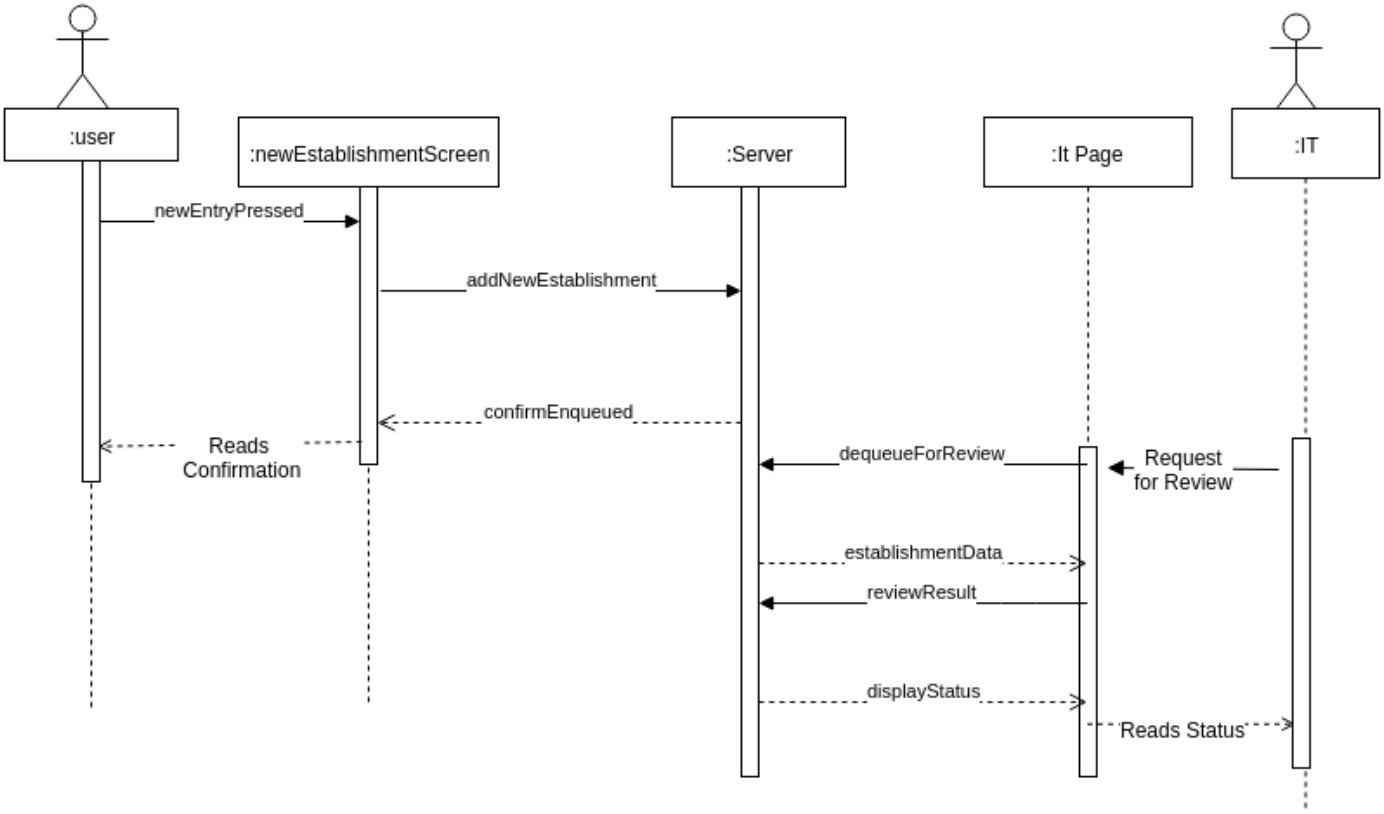

Figure 6: Sequence Diagram for when a new establishment requests to be added

3.3 Updates or maintenance of the application is required.

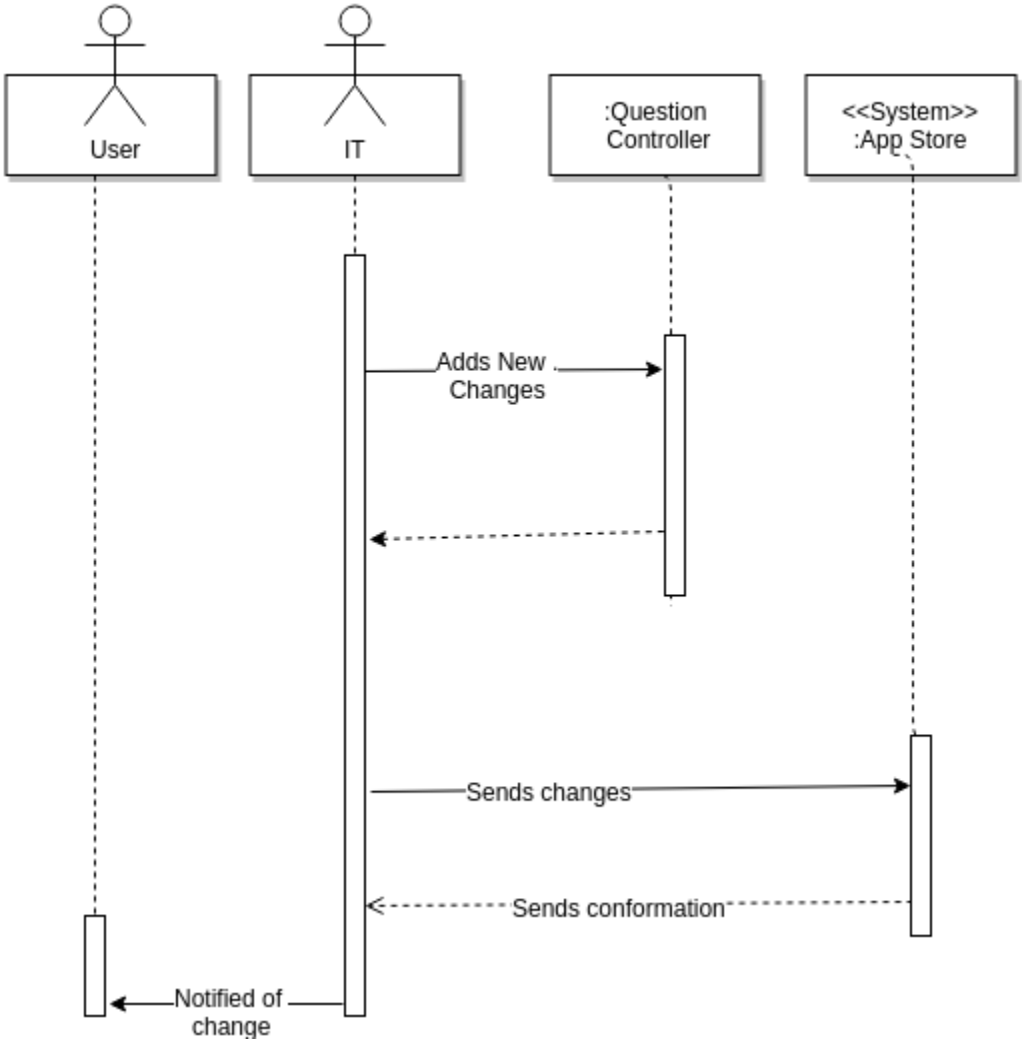

Figure 7: Sequence Diagram for when maintenance or updates must be preformed.

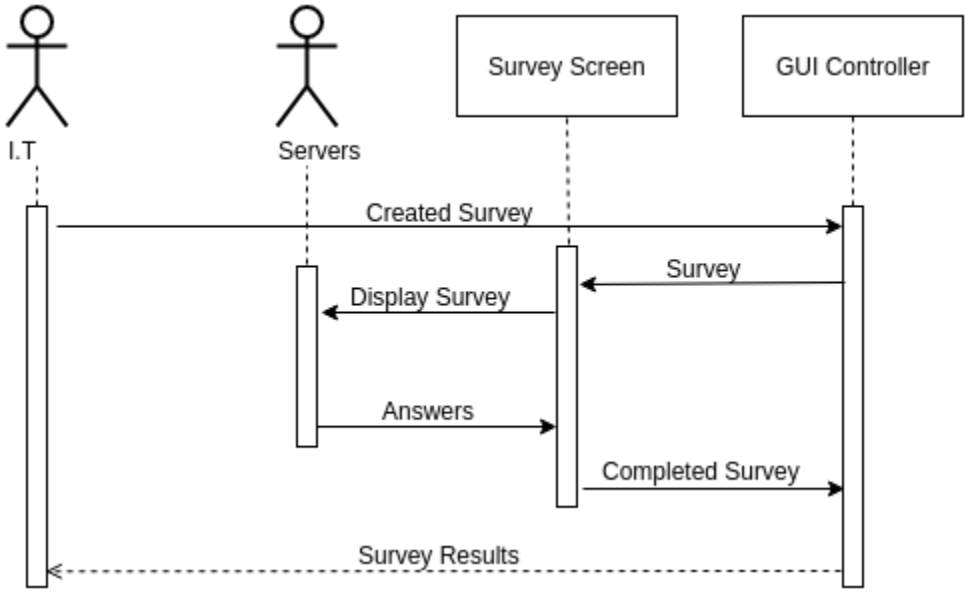

Figure 8: Sequence Diagram for when maintenance or updates requires a beta testing group.

3.4 Management requests implementation or change of experts.

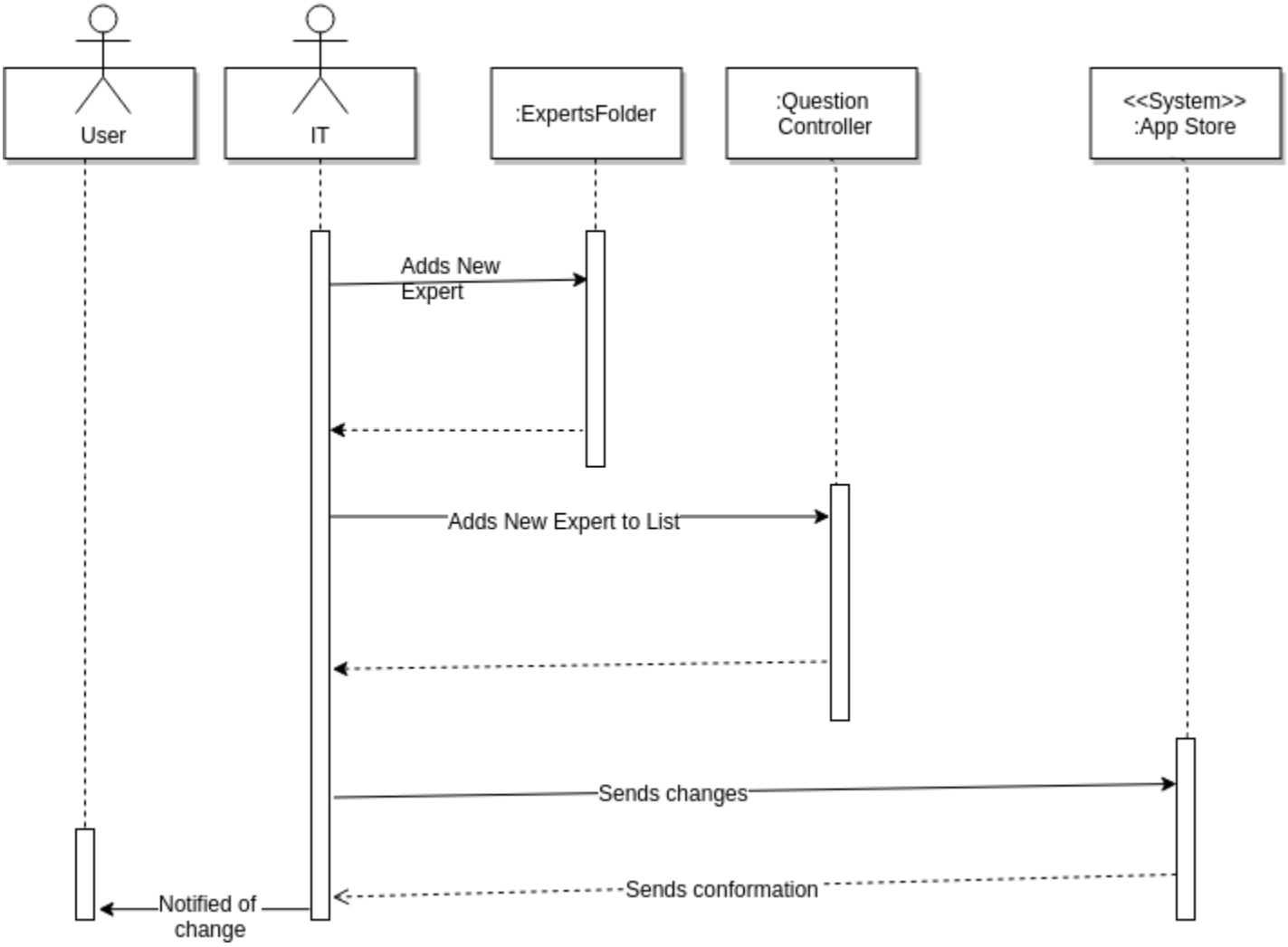

Figure 9: Sequence Diagram for when a new expert must be added.

3.5 User flags an incorrect or inappropriate search or result

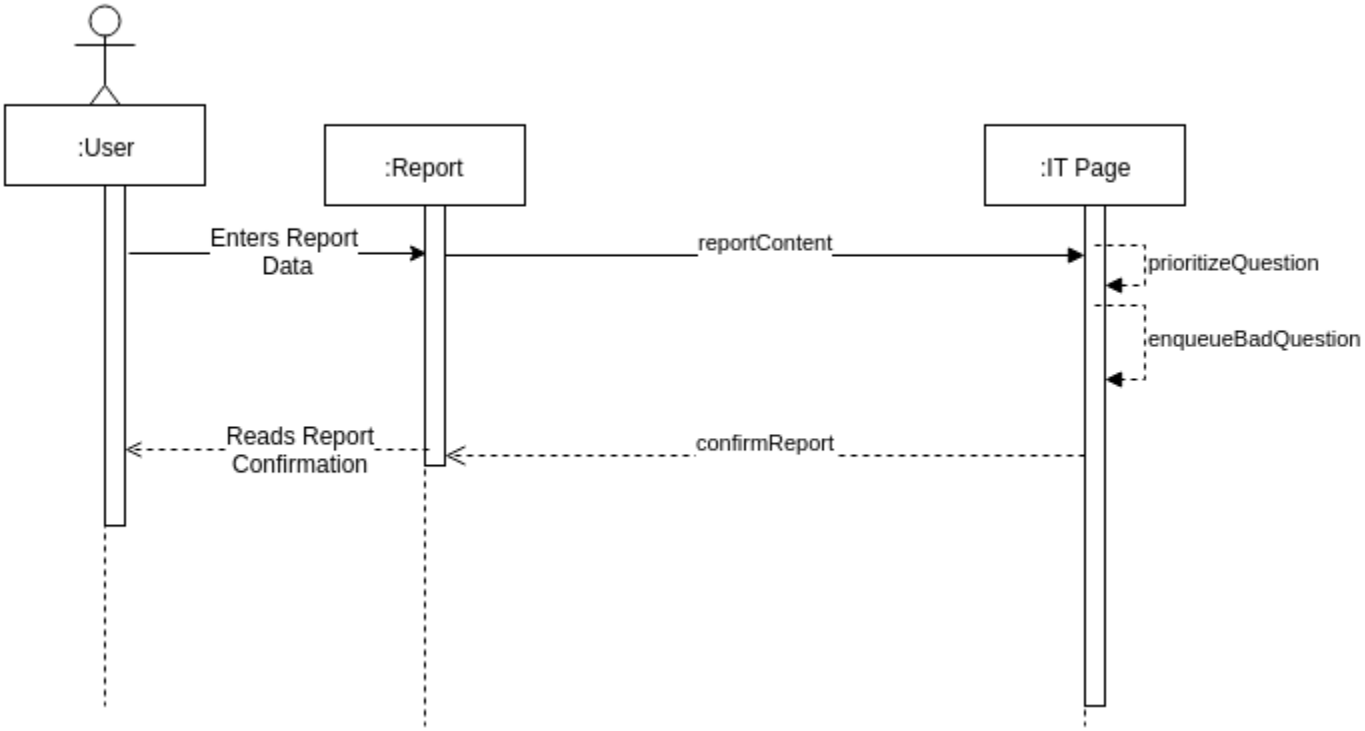

Figure 10: Sequence Diagram for thew user wishes to flag something as inappropriate.

4 Detailed Class Diagram

This section should provide a detailed class diagram for your application.

4.1 Front End Application

Please see the 11 inch by 17 inch page attached.

4.2 Back End Application

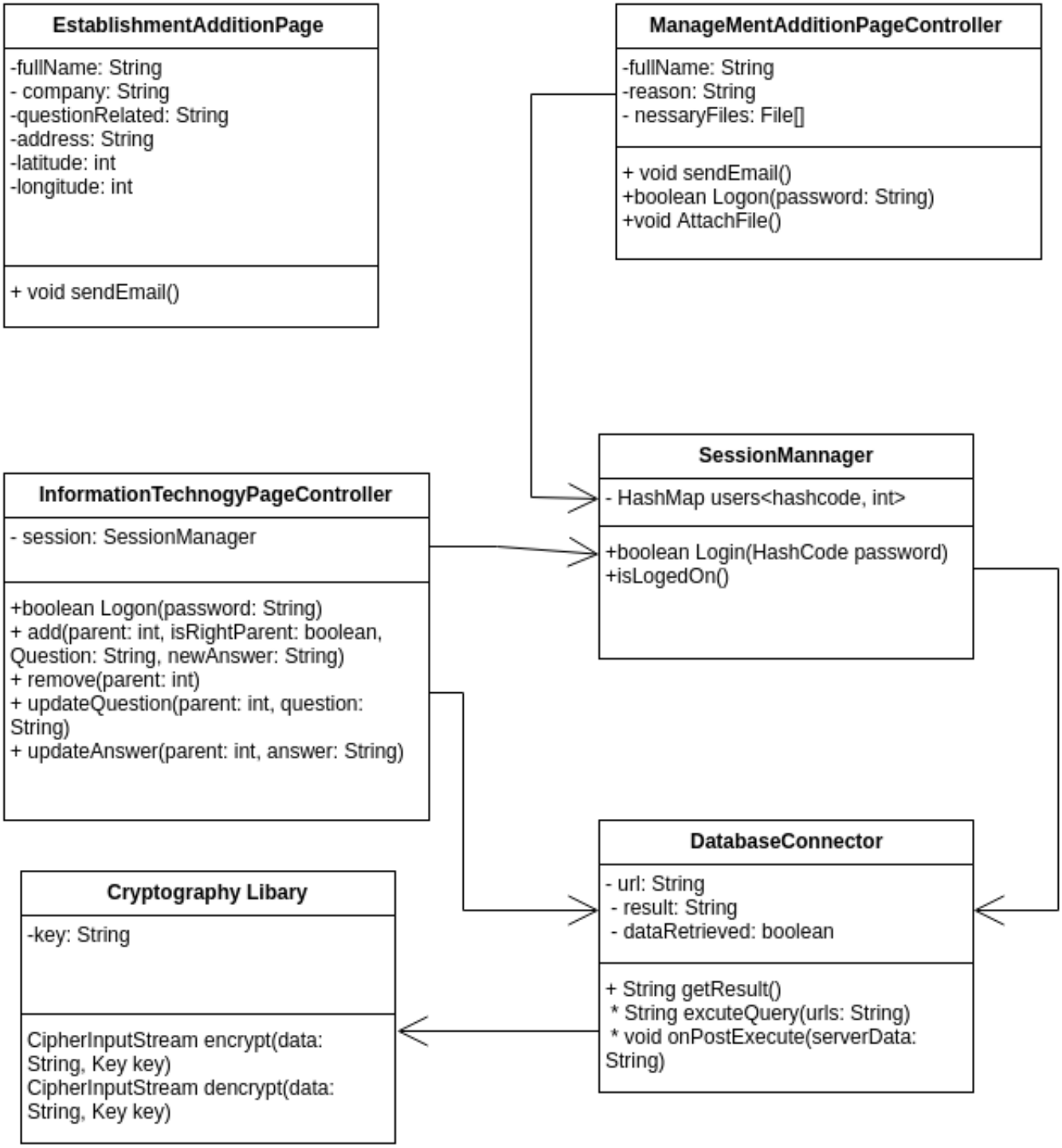

Figure 12: Detailed Class diagram of the web back end of the application.

A Division of Labour

Team Member	Contributions
Gabriel Lopez de Leon	Insert your contribution here.
Maxwell Moore	Insert your contribution here.
Curtis Milo	Generated the sequence diagrams for BE 1, Created Expert and question controller. Created detail class diagram for both the front end and the back end of the application. Edited other sequence diagrams and controllers to maintain consistency.
Alexandra Rahman	Completed Section 1; introduction. Contributed to a few sequence diagrams, the detailed class diagram, and all state chart diagrams. Made all necessary changes to Deliverable 2. In this case, changed the analysis class diagram, changed the use case diagrams and the scenarios related to them. Finally, changed the class responsibility collaboration cards to match the updated analysis class diagram.
Connor Sheehan	Collaborated on design of architecture. Generated state charts.

Table 1: Division of Labour

Gabriel Lopez de Leon Date

Curtis Milo Date

Maxwell Moore Date

Alexandra Rahman Date

Connor Sheehan Date