A Software requirements specification
On

Smart App for Airport Feedback

MENTOR

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Table of Contents

Introduction

The Airport Feedback system is the web-based feedback collecting system from the passengers and provides the automatic generation of feedback which is given by passengers. By using this technology we can give feedback in an online system as fast as compared to the existing paper feedback system. This web app is available on the default Wi-Fi of the airport. The user can rate the different departments of the airport by giving them a rating between 1 to 5 and can also provide feedback in the form of a message. The admin can view all the feedback provided by the passengers and can also sort the feedbacks on certain criteria

1.1 Methodology

Rational Unified Process:

The Rational Unified Process brings together elements from all of the generic process models, sup-ports iteration and illustrates good practice in specification and design. The RUP is normally de-scribed from three perspectives:

- A ***dynamic perspective*** that shows the phases of the model over time.
- A ***static perspective*** that shows the process activities that are enacted.
- A ***practice perspective*** that suggests good practices to be used during the process.

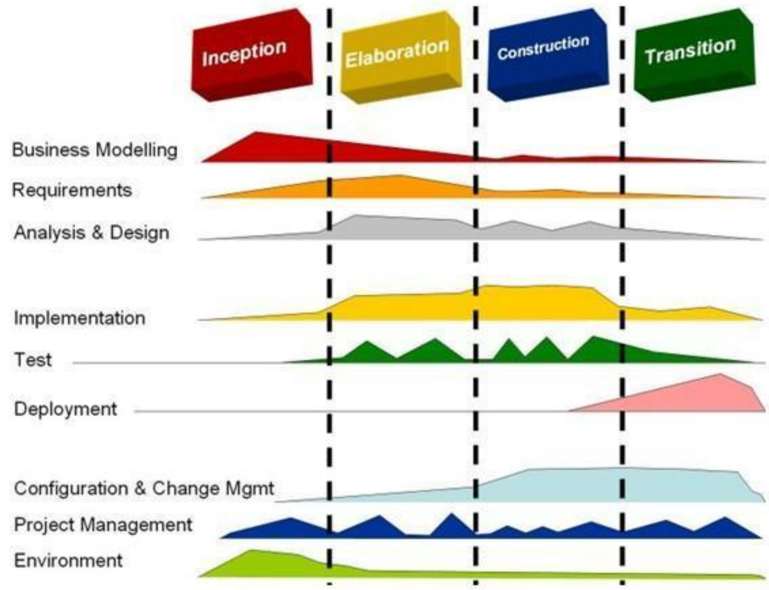


Fig 1.1: Phases of RUP

The different phases in RUP are:

- **Inception**

  The goal of the inception phase is to establish a business case for the system. Identifying all external entities that will interact with the system and defining these interactions. This information is used to assess the contribution of system to business.

- **Elaboration**

  The goals of the elaboration phase are to develop an understanding of the problem domain, establish an architectural framework, develop project plan and identify key project risks.

- **Construction**

  This phase is concerned with system design, programming and testing. Parts of the system are developed in parallel and integrated during this phase.

- **Transition**

  This is the final phase of RUP and is concerned with moving the system from the development com-munity to the user community and making it work in real environment.

1.2 Purpose

Using digital feedback software, you can hear the voice of each passenger – about airport staff, airport amenities and general passenger perception about the airport and about the flights. It gives you a platform to recognize key trends, track repetitive issues and resolve them faster than before.

- 100% more passenger feedback at airports and in airlines
- Real-time passenger feedback
- Resolve passenger issues faster than before
- Track staff and teller performance at airports and airlines
- Compare passenger satisfaction different touch-points
- Improve passenger delight and happiness

1.3 Scope

Airport Feedback App helps the staff in doing everything they can to make the journey less stressful. The real-time feedback system has expanded to allow passengers to rate lounges, staff, store, etc., in addition to the cleanliness of facilities. Prime focus on actionable insights has led to increased airport productivity. This has refined the service standards for better passenger experience.

Our project aims at Business process automation, i.e. we have tried to computerize various processes of Airport Feedback App

- In computer system, the person has to fill various forms & number of copies of the forms can be easily generated at a time.
- In computer system, it is not necessary to create the manifest but we can directly print it, which saves our time.
- To assist the staff in capturing the efforts spent on their respective working areas.
- To utilize resources in an efficient manner by increasing their productivity through automation.
- The system generates types of information that can be used for various purposes.
- It satisfies the user requirement.
- Be easy to understand by the passenger and the operator.
- Be easy to operate
- Have a good user interface
- Be expandable
- Delivered on scheduled within the budget.

1.4 Definitions, Acronyms and Abbreviations

- **Admin (Administrator)**

  He has the authority to add/delete users, grant permission to doctors and
- **UML (Unified Modeling Language)**

  It is a standard language for writing software blueprints. The UML may be used to visualize, specify, construct and document
- **XML (Extensible Markup Language)**

  It is a text based format that let developers describe, deliver and exchange structured data between a range of applications to client for display and manipulation.
- **HTTP (Hypertext Transfer Protocol)**

  It’s a service protocol.

- **JSON (JavaScript Object Notation)**

  It is a text format for storing and transporting data.
- **NPM (Node Package Manager)**

  It is a package manager for the JavaScript programming language.
- **API (Application Program Interface)**

  It’s a way for two or more computer programs to communicate with each other.
- **JSX (JavaScript XML)**

  It’s a syntax extension to JavaScript which allow us to write HTML in React.

1.5 Tools Used

1.5.1 Application architecture – Node.js, Express.js, React.js

- **Node.js**

  Node.js is an open-source, cross-platform, back-end JavaScript runtime environment that runs on a JavaScript Engine and executes JavaScript code outside a web browser, which was designed to build scalable network applications.
- **Express.js**

  Express.js, or simply Express, is a back end web application framework for Node.js, released as free and open-source software under the MIT License. It is designed for building web applications and APIs. It has been called the de facto standard server framework for Node.js.
- **React.js**

  React is a free and open-source front-end JavaScript library for building user interfaces based on UI components. It is maintained by Meta and a community of individual developers and companies.

1.5.2 Development tool – Visual Studio Code

Visual Studio Code, also commonly referred to as VS Code, is a source-code editor made by Microsoft for Windows, Linux and macOS. Features include support for debugging, syntax highlighting, intelligent code completion, snippets, code refactoring, and embedded Git.

1.5.3 Database platform – MongoDB

MongoDB is a source-available cross-platform document-oriented database program. Classified as a NoSQL database program, MongoDB uses JSON-like documents with optional schemas. MongoDB is developed by MongoDB Inc. and licensed under the Server Side Public License which is deemed non-free by several distributions.

1.5.4 Design tool - Creately

Creately is a SaaS visual collaboration tool with diagramming and design capabilities designed by Cinergix. Creately has two versions: an online cloud edition and a downloadable offline edition for desktop which is compatible with Windows, Mac and Linux.

1.5.5 Web server – Node Server

A Node.js server makes your app available to serve HTTP requests. It provides the interaction between users and your application. Creating and starting a server is easy with Node.js's built-in http module. Node. js runs on chrome v8 engine which converts JavasSript code into machine code, it is highly scalable, lightweight, fast, and data-intensive.

1.6 Technologies to be used

- MongoDB : Non-Relational Database Management System.
- Git, Github : Version Control System
- React.js : Web Development
- Node.js, Express.js : Web Development

1.7 Overview

Existing System:

- Feedback forms
- Registration for passengers

Drawbacks:

- Machine Learning is not included
- Flight details are not visible

Proposed System:

- Registration for passengers, admin
- Access of feedback data to admin

Our Plan:

- Registration for users
- Provide flight details to user
- Apply machine learning to generate meaningful trends and results.

Overall Description

2.1 Product Perspective

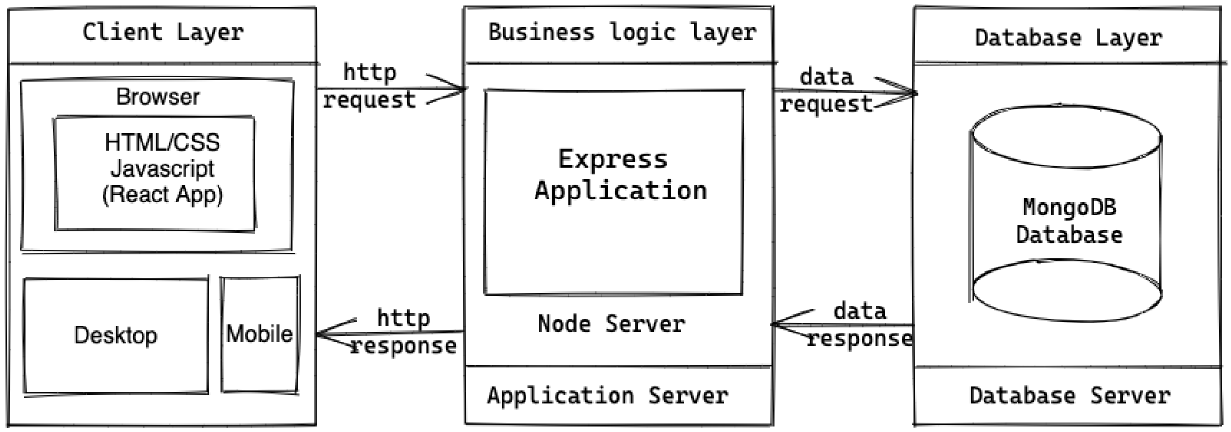


Fig 2.1: Product Perspective

2.2 Software Interface

- **Client on Internet**

  Web Browser, Operating System (any)

- **Client on Intranet**

  Web Browser, Operating System (any)

- **Web Server**

  WASCE, Operating System (any)

- **Data Base Server**

  MongoDB, Operating System (any)

- **Development End**

  Node.js, Express.js, React.js, JavaScript, OS(Windows)

2.3 Hardware Interface

Minimum Requirements:

Client Side			
	Processor	**RAM**	**Disk Space**
Google Chrome	Intel Pentium III or AMD - 800 MHz	128 MB	100 MB

Server Side			
	Processor	**RAM**	**Disk Space**
Node.js	Intel Pentium III or AMD - 800 MHz	1 GB	3.5 GB
MongoDB	Intel Pentium III or AMD - 800 MHz	256 MB	500 MB (Excluding Data Size)

Recommended Requirements:

Client Side			
	Processor	**RAM**	**Disk Space**
Google Chrome	All Intel or AMD - 1 GHZ	256 MB	100 MB

Server Side			
	Processor	**RAM**	**Disk Space**
Node.js	All Intel or AMD - 2 GHZ	2 GB	3.5 GB
MongoDB	All Intel or AMD - 2 GHZ	512 MB	500 MB (Excluding Data Size)

2.4 Communication Interface

- Client (passenger) on Internet will be using HTTP/HTTPS protocol.
- Client (system user) on Internet will be using HTTP/HTTPS protocol.

2.5 Constraints

- GUI is only in English.
- Login and password is used for the identification of admin.
- Only admins will be authorized to access or view the feedback data.
- Limited to HTTP/HTTPS.
- This system is working for single server.

2.6 E-R Diagram

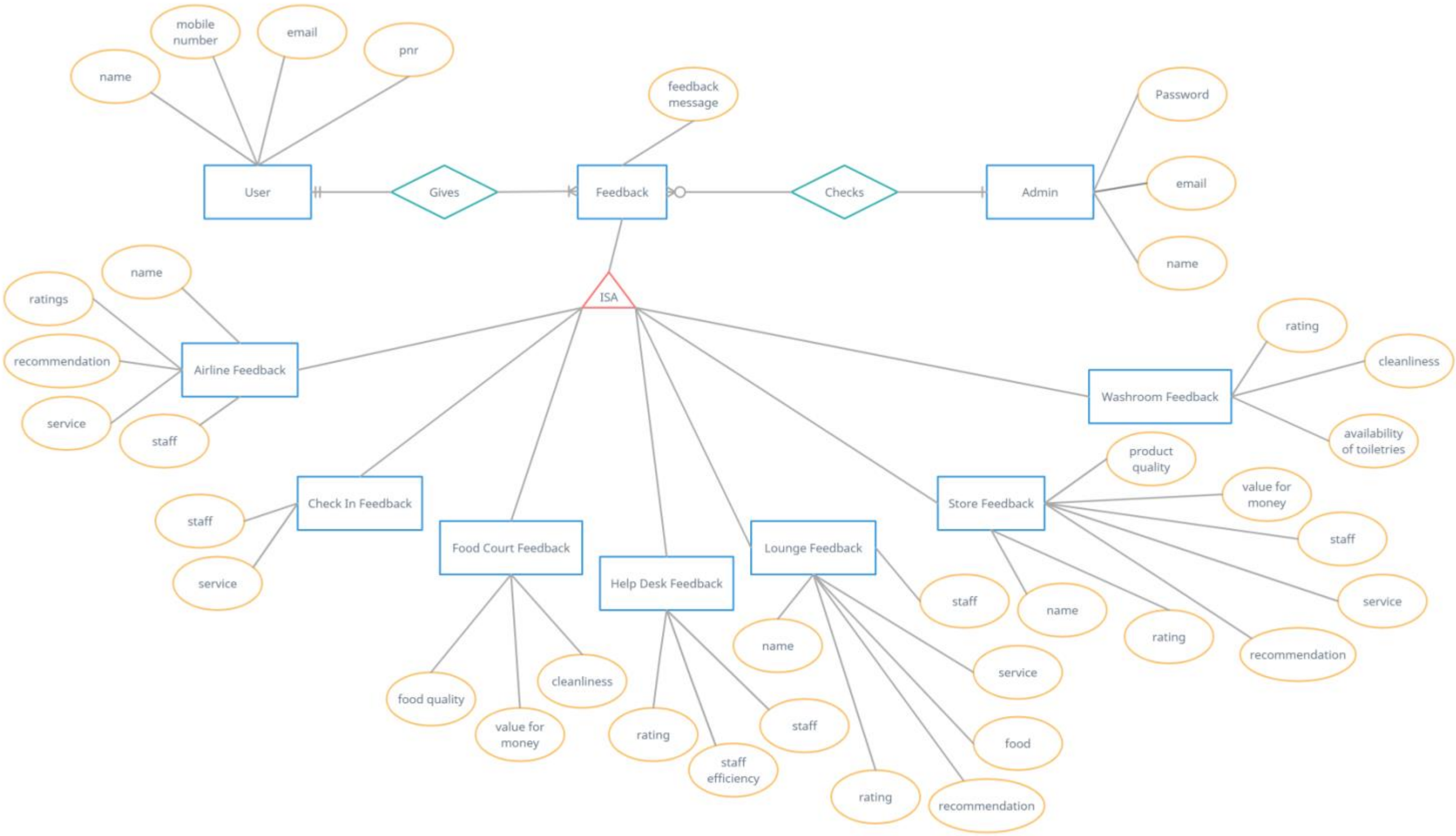


Fig2.1: E-R Diagram

2.7 Use Case Model Survey

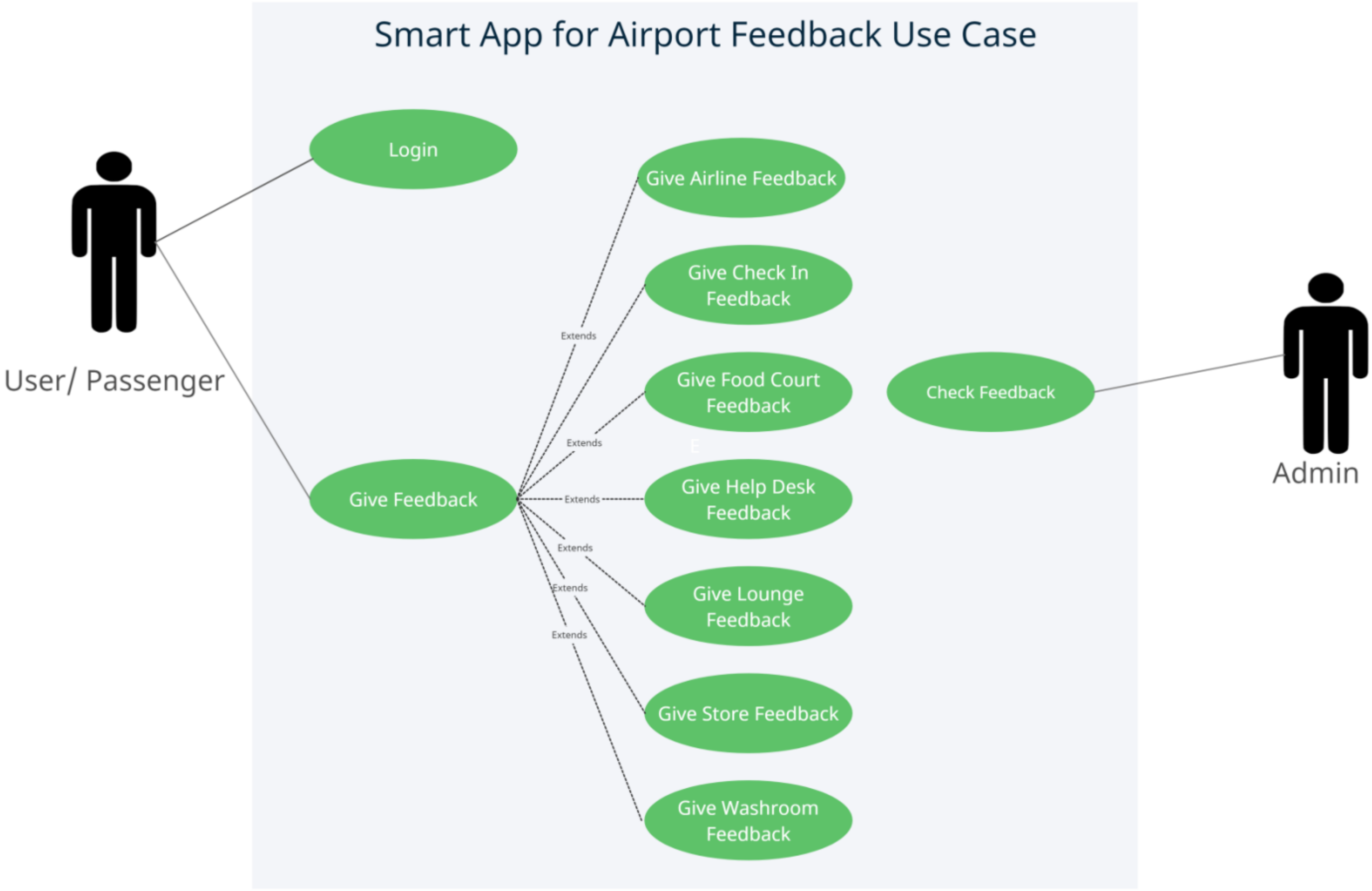


Fig2.2: Use Case Model Survey

- **Passenger:**

  Passenger can give the feedback regarding the different departments such as airlines, check-in counter, food court, help desk, lounge, store, etc.

- **Admin:**

  Admin has the authority to view or access the feedback provided by the passengers. Admin can also perform different types of operations on the feedback provided by the passengers to conclude different results

2.8 Architecture Diagram

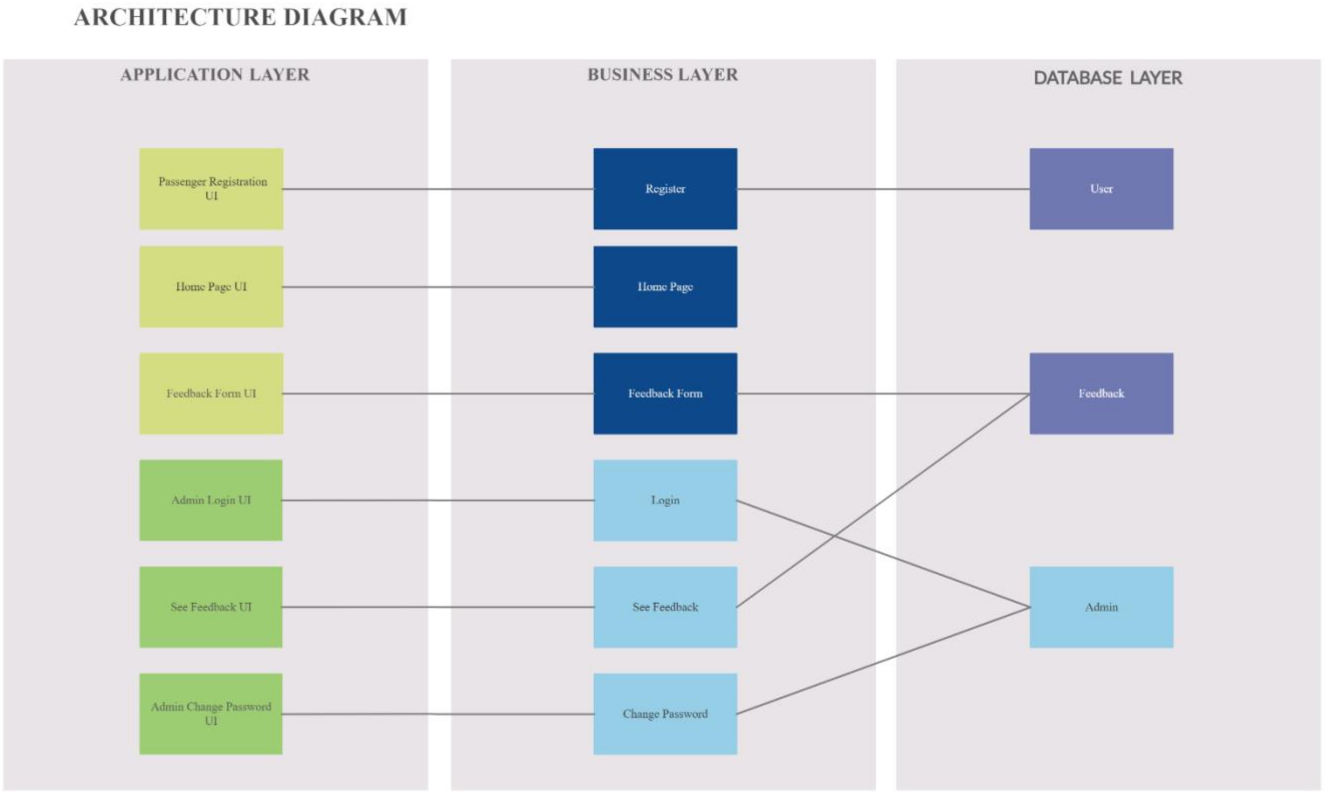


Fig2.3: Architecture Diagram

2.9 Database Design

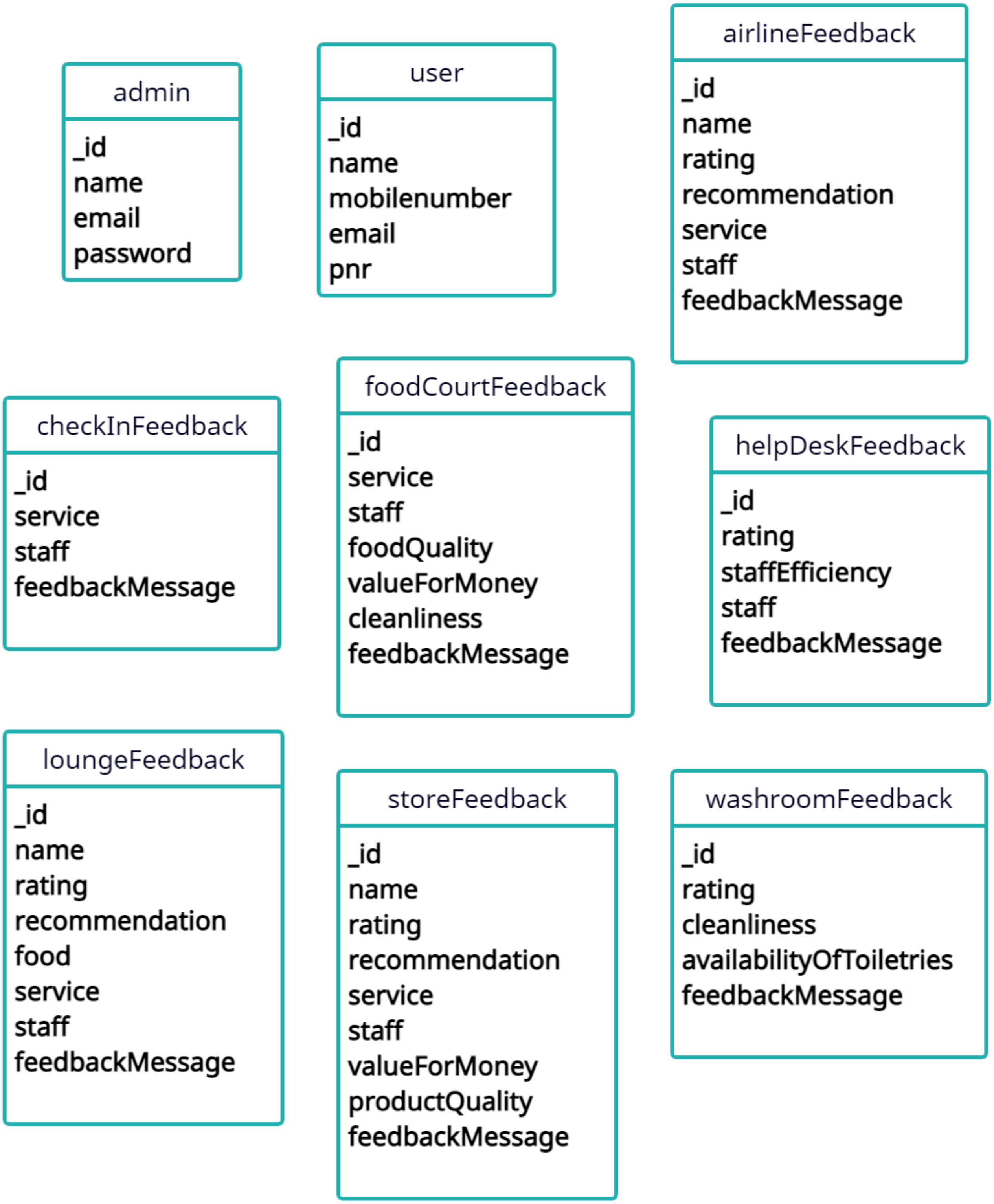


Fig2.4: Database Design

Specific Requirements

3.1 Use Case Reports

3.1.1 Passenger use-case report

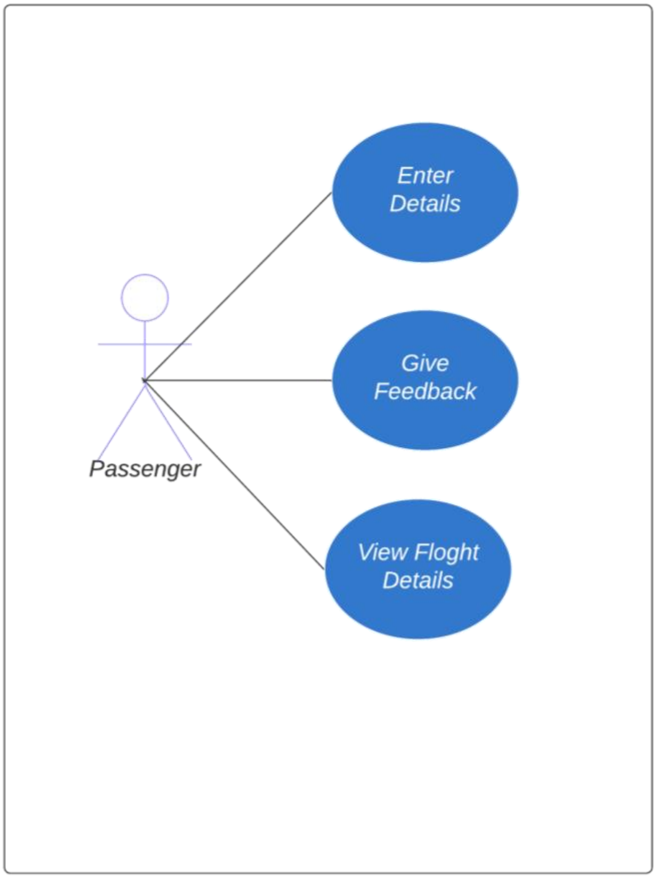


Fig3.1: Use case diagram for passenger

Use Case	Description
Enter Details	User needs to enter his personal details including PNR number.
Give Feedback	User can give the feedback to the desired department.
View Flight Detail	User can view any flight details using flight number.

3.1.2 Admin use-case report

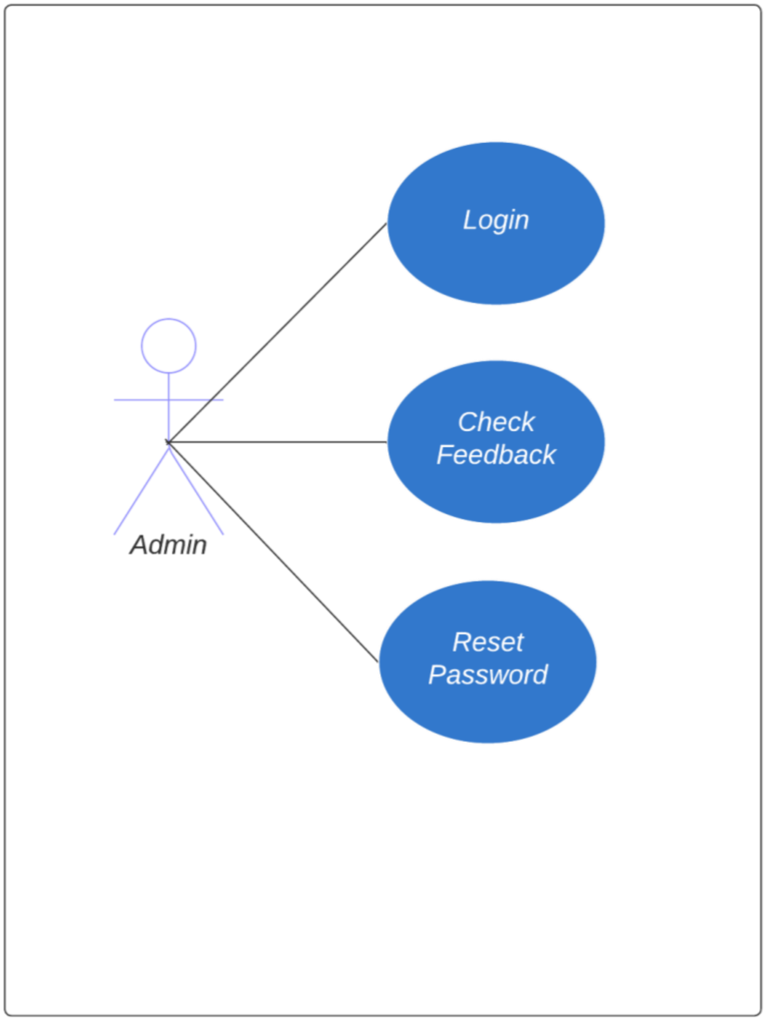


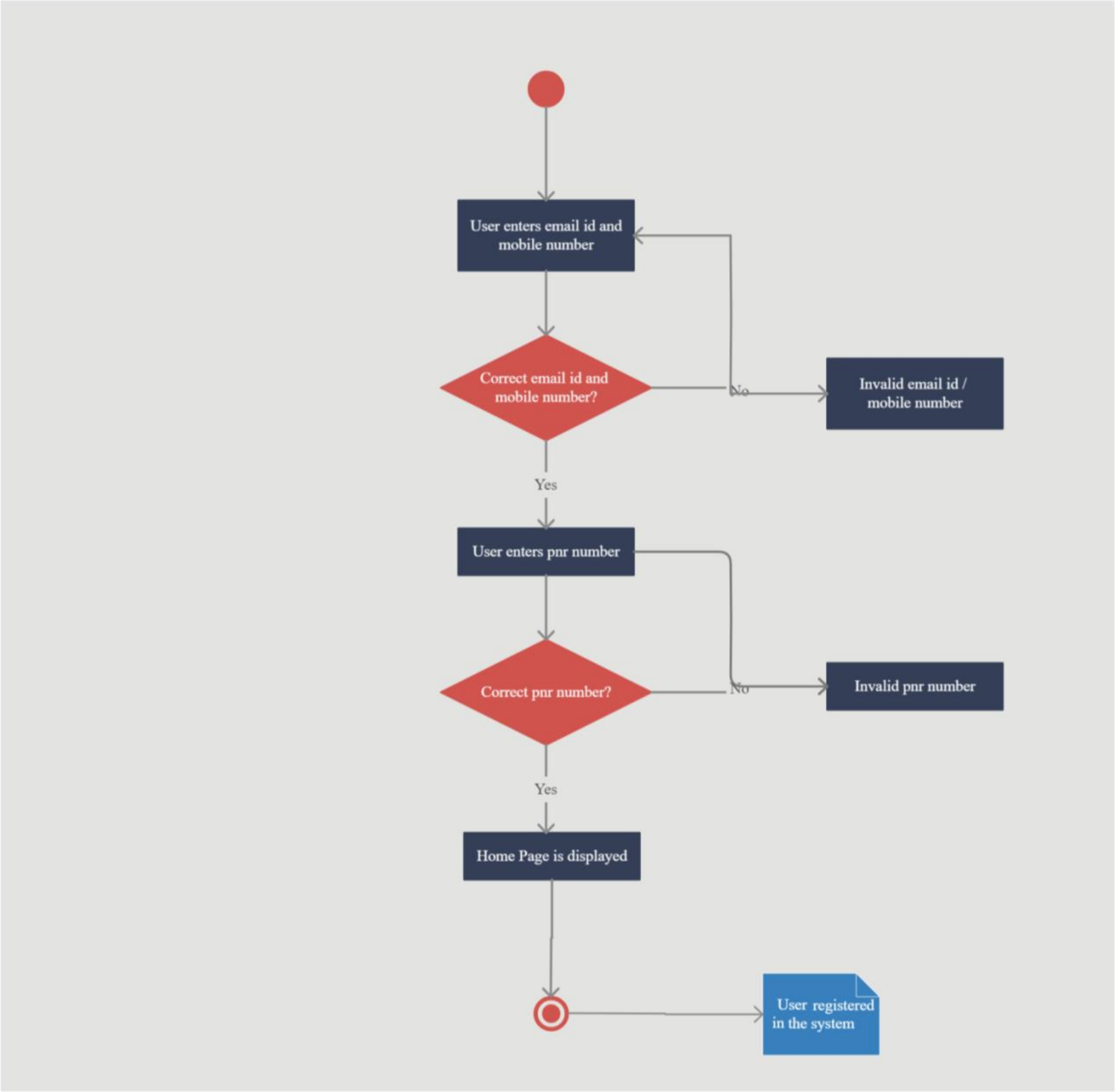
Fig3.2: Use case diagram for Admin

Use Case	Description
Login	Admin needs to login to access his account.
Check Feedback	Admin can check the feedbacks and can apply desired filters to generate required results.
Reset Password	Admin can reset his account password.

3.2 Activity Diagrams

3.2.1 Passenger Registration Activity

First of all the user enters his details. If all the details are correct he is redirected to home page. If any detail is incorrect then an error message is shown and user needs to correct the details to redirect to home page.



User enters email id and mobile number
Correct email id and mobile number?
No
Invalid email id / mobile number
Yes
User enters pnr number
Correct pnr number?
No
Invalid pnr number
Yes
Home Page is displayed
User registered in the system

Fig 3.1: Activity Diagram Representing Passenger Registration

3.2.2 Passenger Feedback Activity

User selects the feedback he wants to give and enters all the feedback details. Entering all the feedback details is mandatory for the user to submit the feedback. If any detail is not enter by the user he will get an alert message indicating that he need to give the specified rating to proceed.

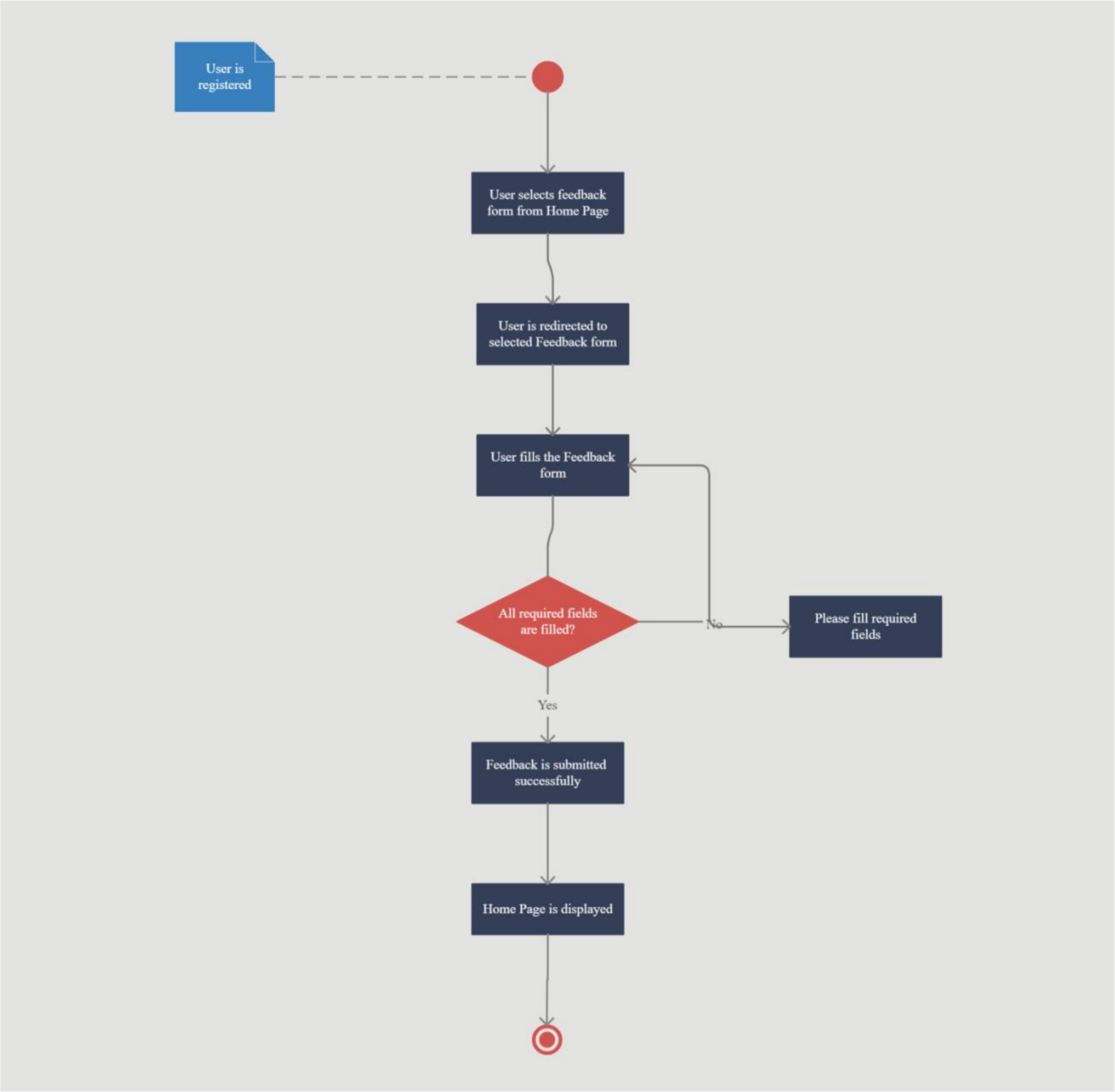

User is registered
User selects feedback form from Home Page
User is redirected to selected Feedback form
User fills the Feedback form
All required fields are filled?
No
Please fill required fields
Yes
Feedback is submitted successfully
Home Page is displayed

Fig 3.2: Activity Diagram Representing Passenger Feedback

3.2.3 Admin Login Activity

Admin need to login to check the feedbacks given by the users. If the entered credentials are correct then he will be redirected to the feedback page otherwise he would be shown an alert message to enter the correct details.

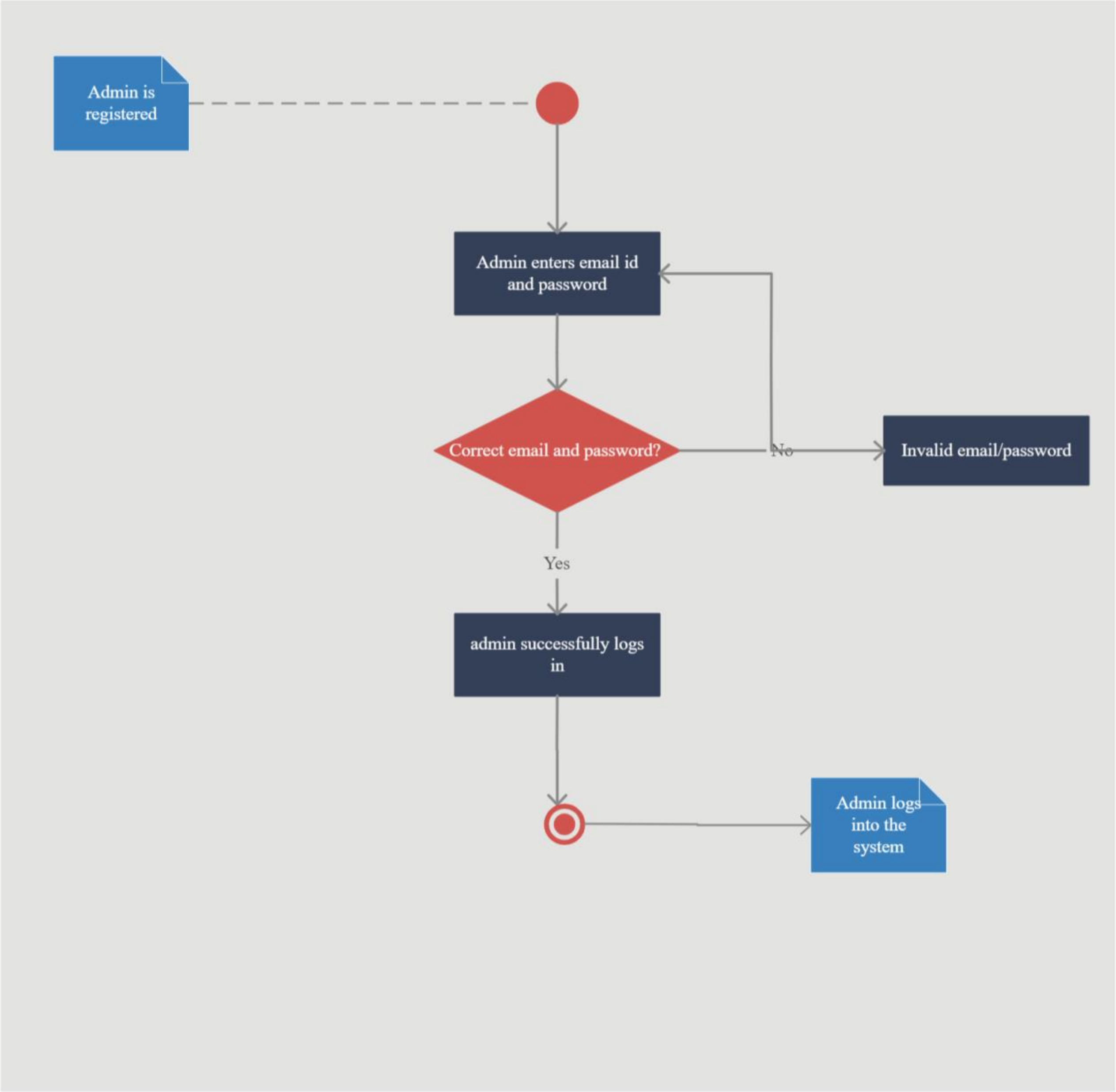

Admin is registered
Admin enters email id and password
Correct email and password?
No
Invalid email/password
Yes
admin successfully logs in
Admin logs into the system

Fig 3.3: Activity Diagram Representing Admin Login

3.2.4 Admin View Feedback Activity

Admin can select the feedback he want to check at the dashboard and he can put desired filters to get the desired feedbacks.

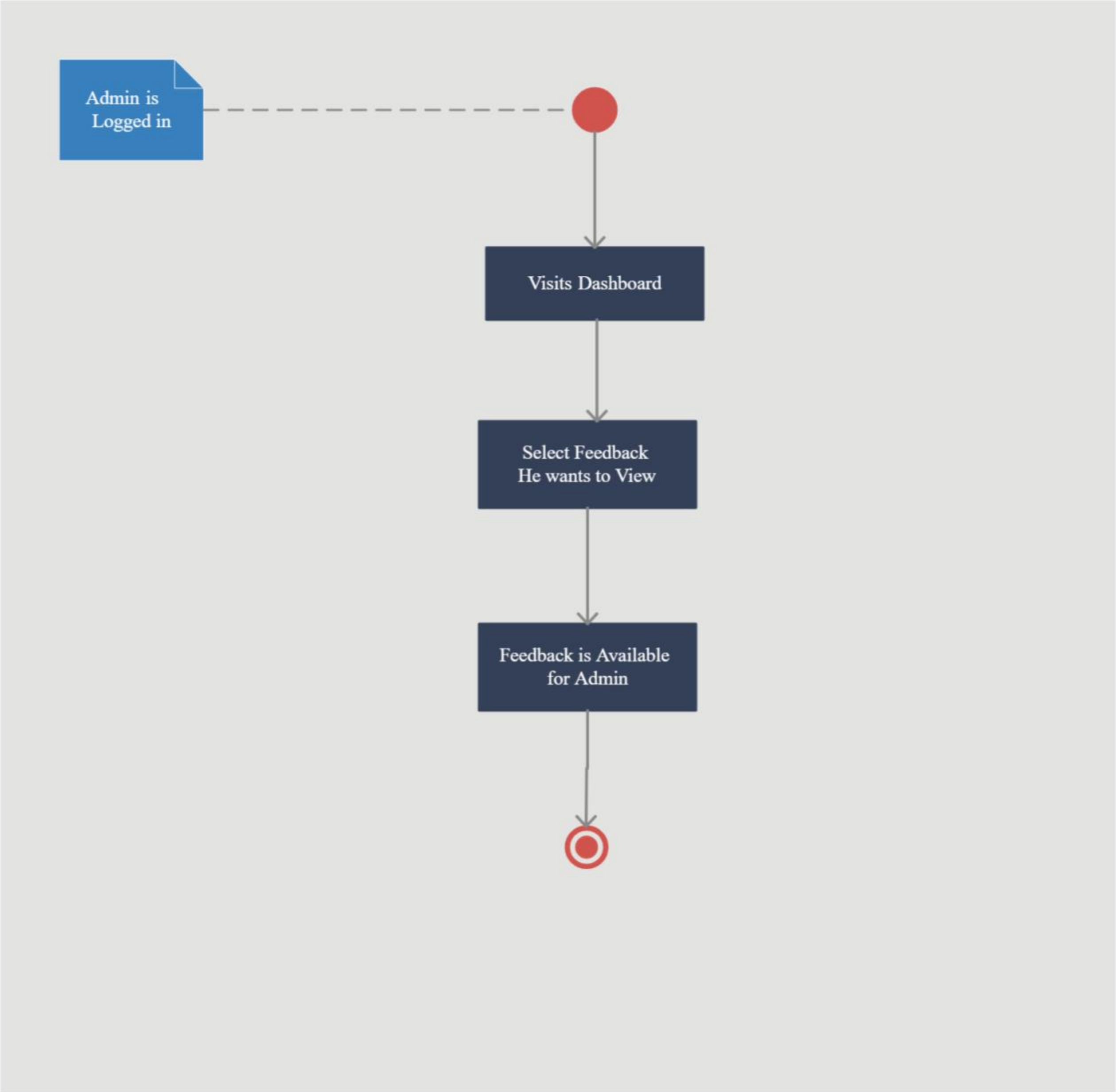

Admin is Logged in
Visits Dashboard
Select Feedback He wants to View
Feedback is Available for Admin

Fig 3.4: Activity Diagram Representing Admin View Feedback

3.2 Sequence Diagrams

3.3.1 Passenger Sequence Diagram

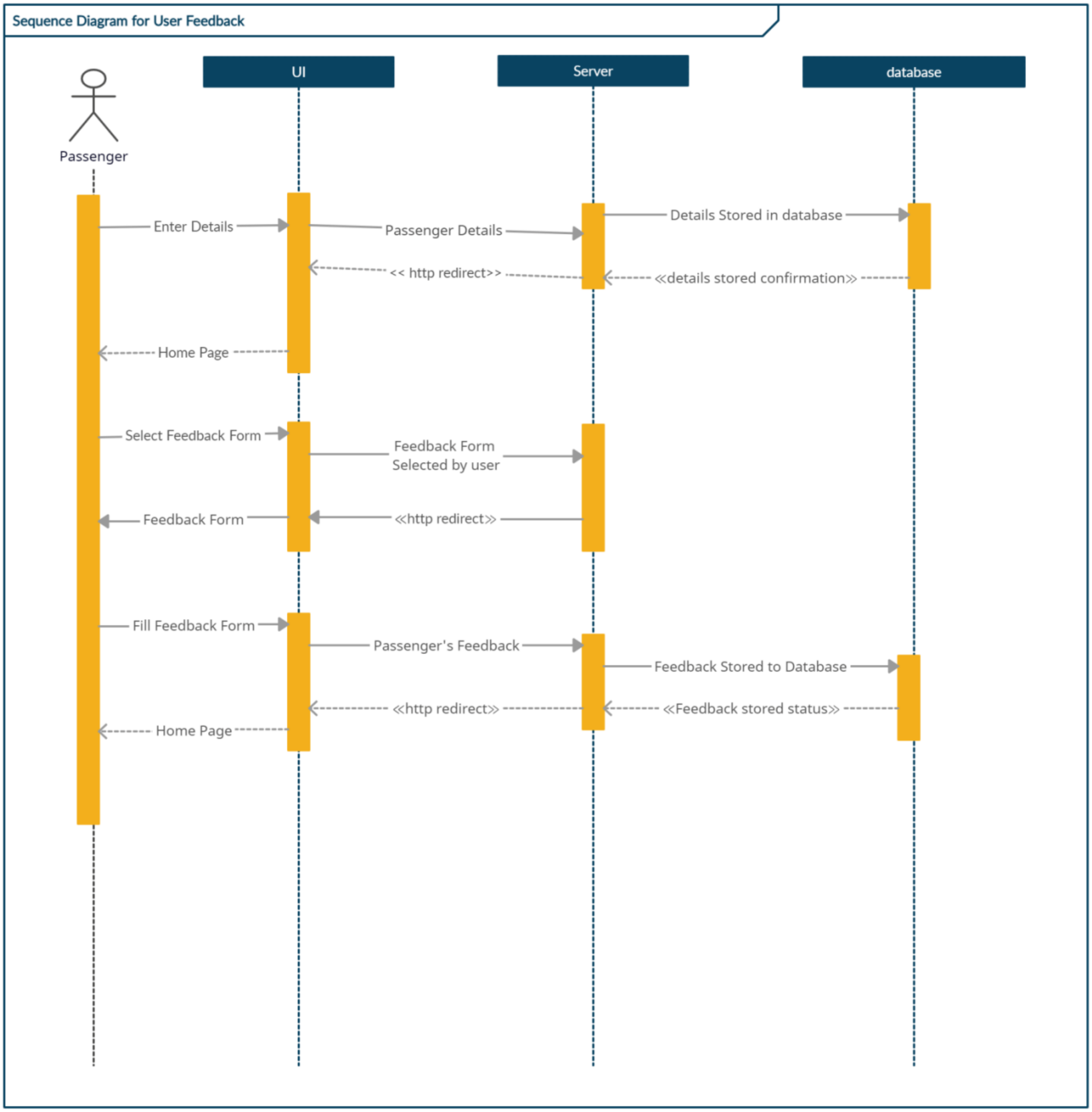


Fig 3.1: Sequence Diagram Representing Passenger

3.3.2 Admin View Feedback Sequence Diagram

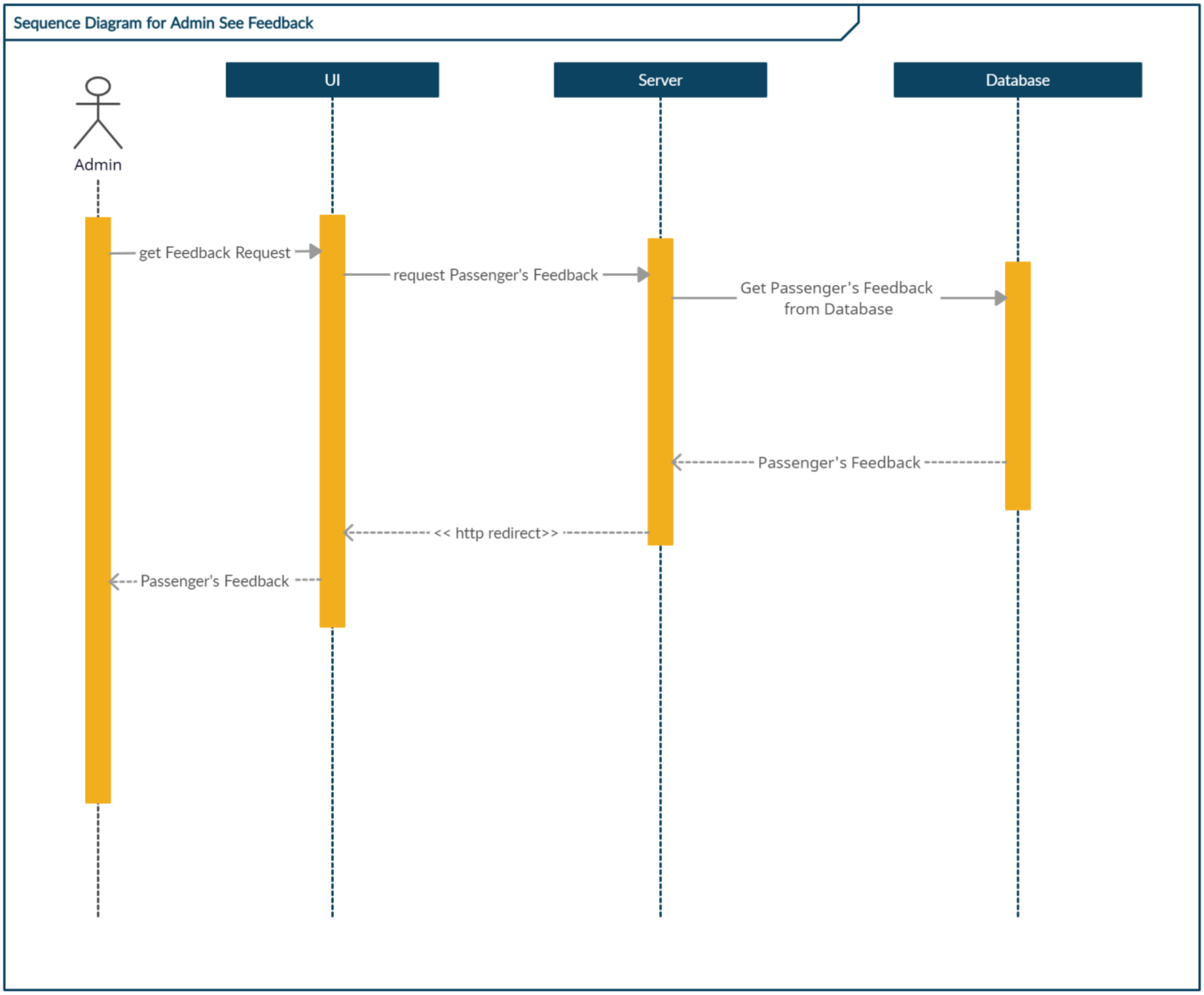

Sequence Diagram for Admin See Feedback
UI
Server
Database
Admin
get Feedback Request
request Passenger's Feedback
Get Passenger's Feedback from Database
Passenger's Feedback
<< http redirect>>
Passenger's Feedback

Fig3.2: Sequence Diagram Representing Admin View Feedback

3.3.3 Admin Login Sequence Diagram

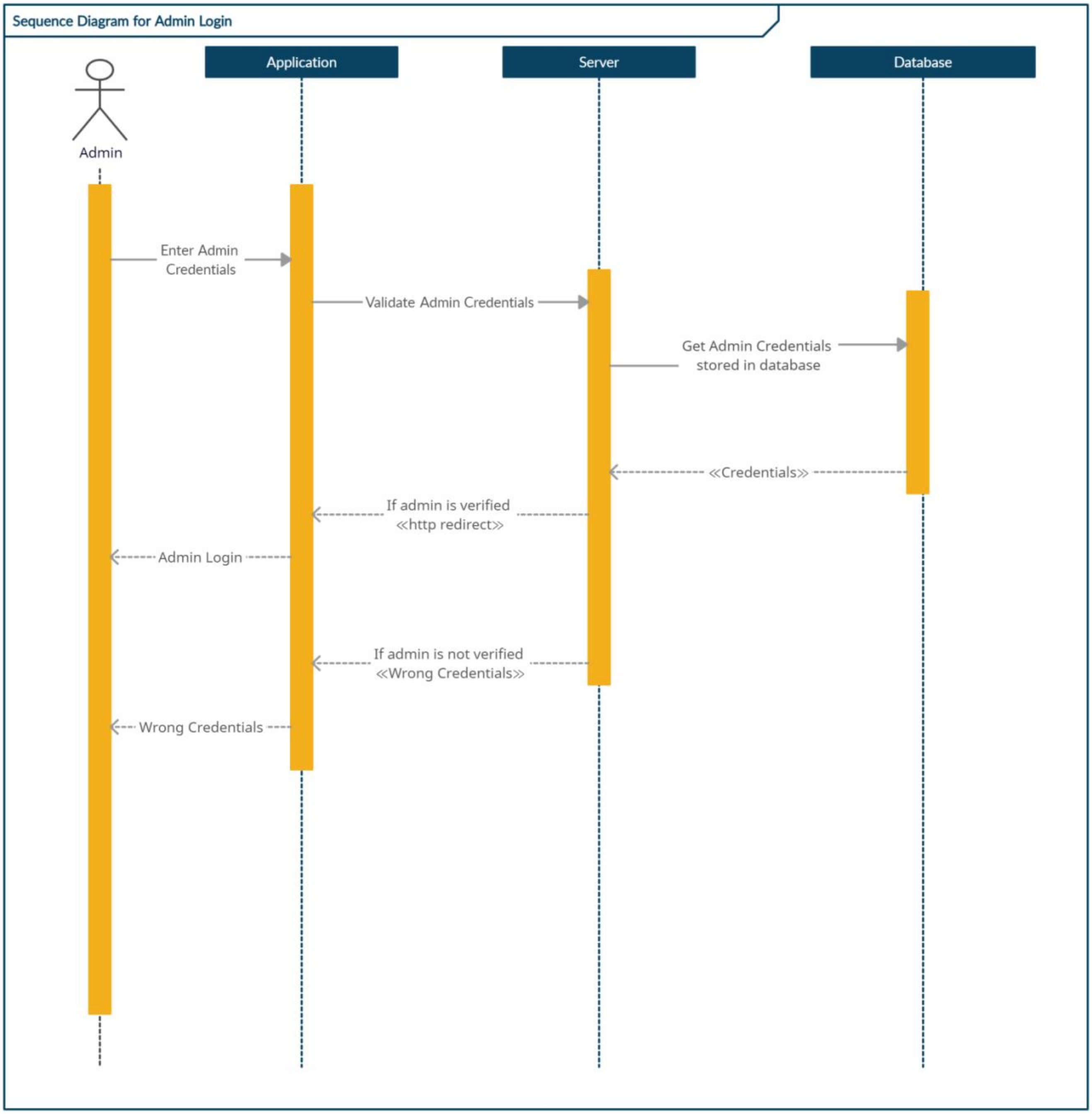

Sequence Diagram for Admin Login
Admin
Application
Server
Database
Enter Admin Credentials
Validate Admin Credentials
Get Admin Credentials stored in database
«Credentials»
If admin is verified «http redirect»
Admin Login
If admin is not verified «Wrong Credentials»
Wrong Credentials

Fig3.3: Sequence Diagram Representing Admin Login

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