SOEN 343 Project (Hexagon - Sprint 2)

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SOEN 343: Software Architecture and Design I
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October 24th, 2023

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I- Summary of the project

This project is a web application that provides a delivery service to its clients. These clients are able to request a delivery, get a proposal of a quotation, receive communication about the service, track the order, pay for the order, and review the service. These functionalities are provided to the client in an intuitive and easy to use manner. The project was developed to optimize efficiency by designing and analyzing the system before its implementation.

II- System architecture

1) UI layer

   The UI layer is responsible for building the user interface and handling the user interactions such as input fields. This would include pages which are components. Some examples are the login page, the registration page and the landing page. Below are some components with a breakdown of some of its inner components:

   - Login Page: email and password fields.
   - Registration Page: email, password and confirmation password fields.
   - Landing Page: Navigation Menus.
   - Request Delivery Page: Delivery Request Form, submit button.
   - Proposal of Quotation Page: Delivery Request Form, save button.
   - Payment Page: name, last name and credit card info fields, and a submit button.
   - ChatBox Page: input field, submit button.

2) Domain layer

   The Domain Layer contains all the business logic for the delivery service, including entities and the methods defined.

   - For Delivery:
     - addDeliveryItem()
     - processDelivery()
     - validateDelivery()
     - cancelDelivery()
     - getDeliveryQuotation()
     - trackDelivery()
   - For payment:

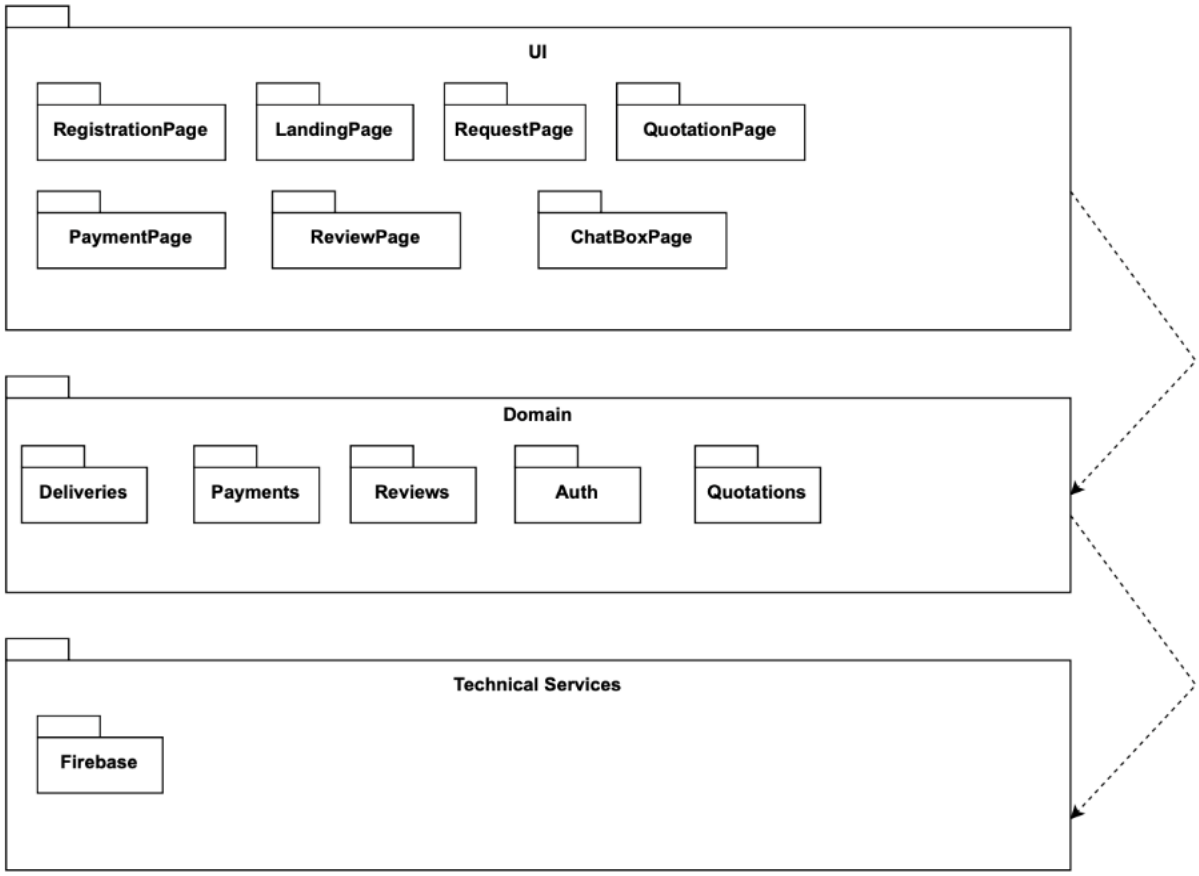
        - processPayment()
        - validatePayment()
    - For Reviews:
        - addReview()
        - editReview()
        - deleteReview()
    - For Authentication:
        - register()
        - login()

3) Technical services

   The Technical Services layer handles the interaction with the Firebase services such as the authentication service and the real time database service. As well as any frameworks used such as Angular and Bootstrap.

    - FirebaseAuthService : login(), register(), logout()
    - FirebaseRealTimeDatabaseService: createDelivery(), getDelivery(), deleteDelivery(). Firebase methods: set(), update(), remove(), onValue()
    - Chatbox: Chat component

The below figure shows all the details that you should consider in defining each layer:



III- Use cases

The system will have 6 core functionalities. Firstly, our application should be able to handle requests from a client to specify a delivery. The system should supply quotations if asked upon. As well, the client should be able to ask for communication about the service. The client should be able to see details about the service, as in they should be able to track a delivery. Furthermore, they should be able to pay for our services. And lastly, the client should be able to review their deliveries. Many more smaller functionalities will be added in association. For example, there will be a section on the application to view different quotations that were created, emails will be sent for payment confirmation, delivery will have statuses on their image in order to visualize the tracking, etc.

Use Case Diagram:

Use Case Scenarios:

ID:	**1**
Title:	Client requests delivery.
Description:	The client requests a delivery through our UI.
Primary Actor:	An individual who needs item(s) delivered for themselves or for their company.
Preconditions:	The client is logged into the system and is authenticated.
Postconditions:	The delivery has been created in the system and has been associated with the client.
Inputs:	Departure location and Destination location. Delivery item(s) size, weight, quantity.
Outputs:	Delivery item id.
Main Success Scenario:	The client logs in and is authenticated by the system. The client navigates to the appropriate page and requests a delivery. The client inputs all the required fields (departure location, destination location, item size, item weight, quantity). Once the client finishes, then the system generates the corresponding price for the requested service and displays it on the UI. Once the client clicks “Proceed to Payment”, the system associates a new delivery with the client.

ID:	**2**
Title:	Proposal of a quotation for the service
Description:	A client is able to request a quotation for a specific delivery.
Primary Actor:	Any individual with an account who wants a quotation for a specific delivery.
Preconditions:	The client must log in and must be authenticated by the system.
Postconditions:	A price value is generated for a specific delivery and displayed on the UI.
Inputs:	Depart location, destination Item size, item weight and quantity
Outputs:	Price
Main Success Scenario:	The client logs in and is authenticated by the system. The client navigates to the appropriate page and requests a quotation for a delivery. The client inputs all the required fields (depart location, destination, item size, item weight, quantity). Once the client finishes inserting their delivery item(s), the system generates the corresponding price for the requested service and displays it on the UI. The client then has the option to save the quotation. If so, the system creates a Quotation object that is associated with the client.

ID:	**3**
Title:	Tracking the delivery
Description:	The client can request to view the tracking of their order, therefore seeing the status of their order.
Primary Actor:	An individual or company who wants to see the status of their delivery.
Preconditions:	The client is logged into the system and is authenticated. The client also has a delivery to their name.
Postconditions:	The current status of the requested delivery is displayed to the client on the UI.
Inputs:	No inputs
Outputs:	Current status of the delivery.
Main Success Scenario:	The client logs in and is authenticated by the system. The client navigates to the “My Deliveries” page and can see cards of all their deliveries. They can directly see the tracking status on the card. However, they can click on the card for more details. The system then brings the client to another page where the status and details of the delivery are displayed to the client.

ID:	**4**
Title:	Making Payment
Description:	Once a client has requested and specified the details of a delivery, they need to pay for said service.
Primary Actor:	A client who already has an account with our system who wants to pay for a delivery service.
Preconditions:	Client is already logged in and authenticated. Client has requested a delivery and filled in its details.
Postconditions:	Delivery is created upon payment. It can be shown on the client's account in active deliveries. It is added to the system's database. Delivery is assigned to a driver (staff). A confirmation email of the order and its payment has been sent to the client's email.
Inputs:	Client's credit card information.
Outputs:	Confirmation of payment.
Main Success Scenario:	The client logs in and is authenticated by the system. The client navigates to the appropriate page and requests a delivery. The client inputs all the required fields (depart location, destination, item size, item weight, quantity). Then, the system generates the corresponding price for the requested service and displays it on the UI. The client continues to the payment section. The client enters their credit card information and concludes the payment. The system generates an active delivery in the client account and associates the delivery with a driver(staff).

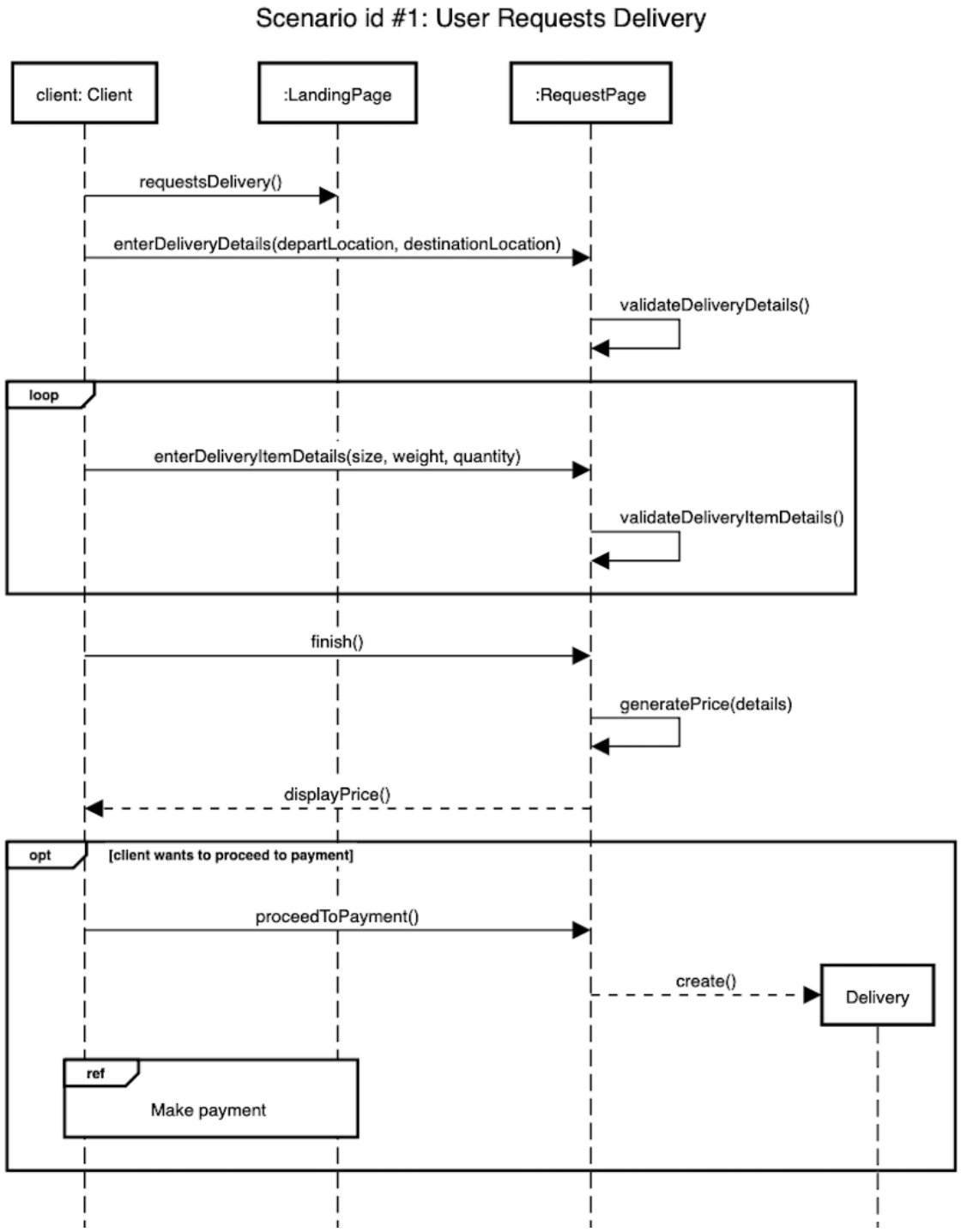
ID:	**5**
Title:	Review of service
Description:	The goal of this use case is to allow clients to rate and review the service and a delivery.
Primary Actor:	A person who has a client account and has received a delivery.
Preconditions:	Client is logged in and authenticated Client has at least one delivery order that has been fulfilled..
Postconditions:	A new client review is stored in the database and is displayed on the site. The review is displayed in the review section. Displayed are the username of the author, rating from 1 to 5, the title, From and To locations, item ordered, and body of review.
Inputs:	Rating from 1 to 5 Title of review Body of review
Outputs:	A new client review associated with the delivery
Main Success Scenario:	The client goes to their delivery section and selects a delivery that is completed. They click on the “create review” and a section to review appears. They select the rating from 1 to 5. They enter the title of the review. They enter the body of the review. They click submit. The review is displayed under their delivery, and is also displayed in the review section of the website.

ID:	**6**
Title:	Request Customer Support
Description:	The goal is to be able to answer customers' questions and resolve issues that they might have with the system.
Primary Actor:	Client account, Staff accounts, Admin
Preconditions:	The client is logged in.
Postconditions:	The message was answered by a staff member in the chat box.
Inputs:	Message from client account
Outputs:	Message from staff account
Main Success Scenario:	The client sends a message about their issue and they receive a response.

IV- Sequence diagram

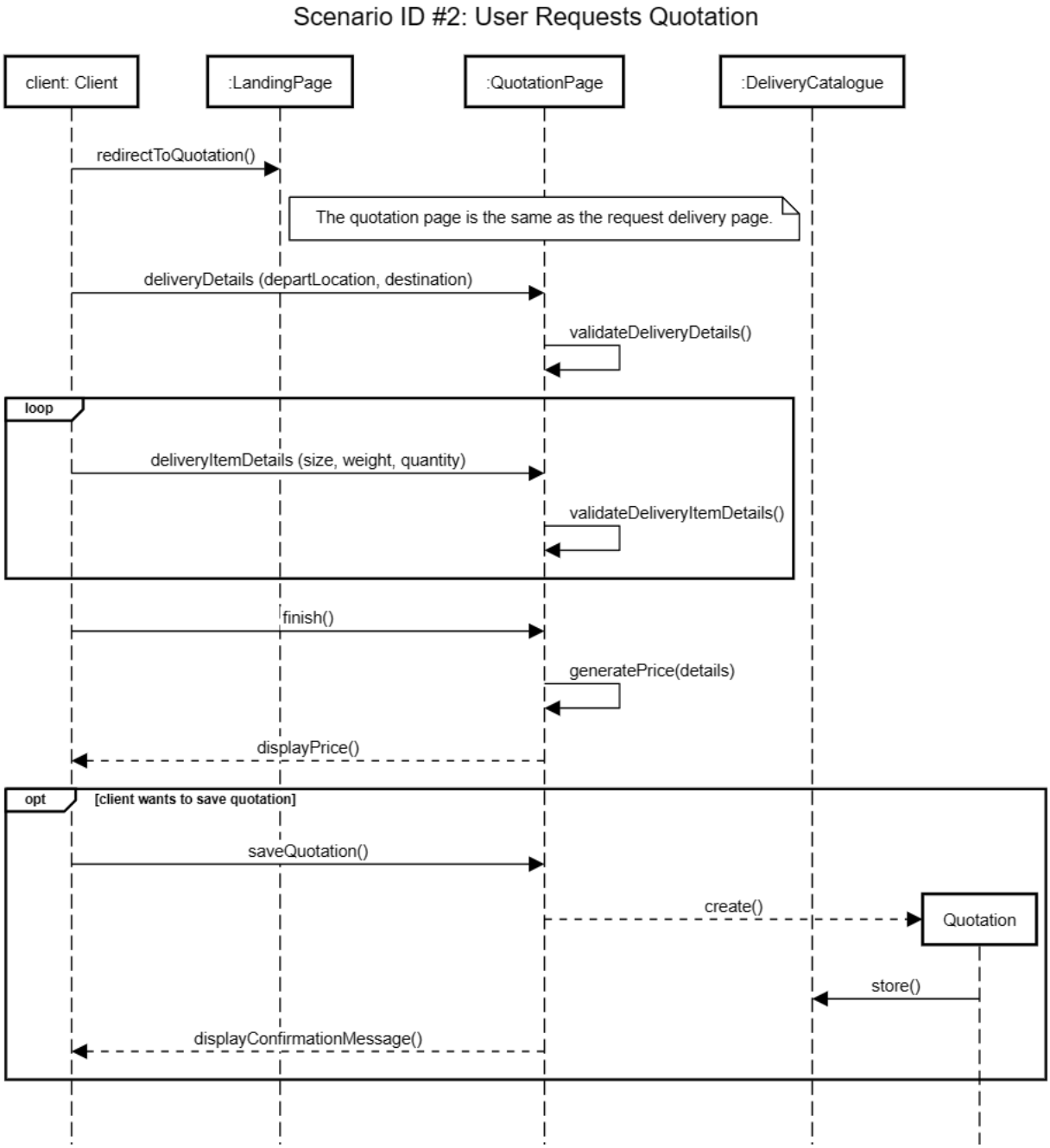
Use Case 1:

This functionality is initialized when a client requires item(s) to be delivered by a third party other than themselves. They would then login to our website, get directed to the landing page and start the process.



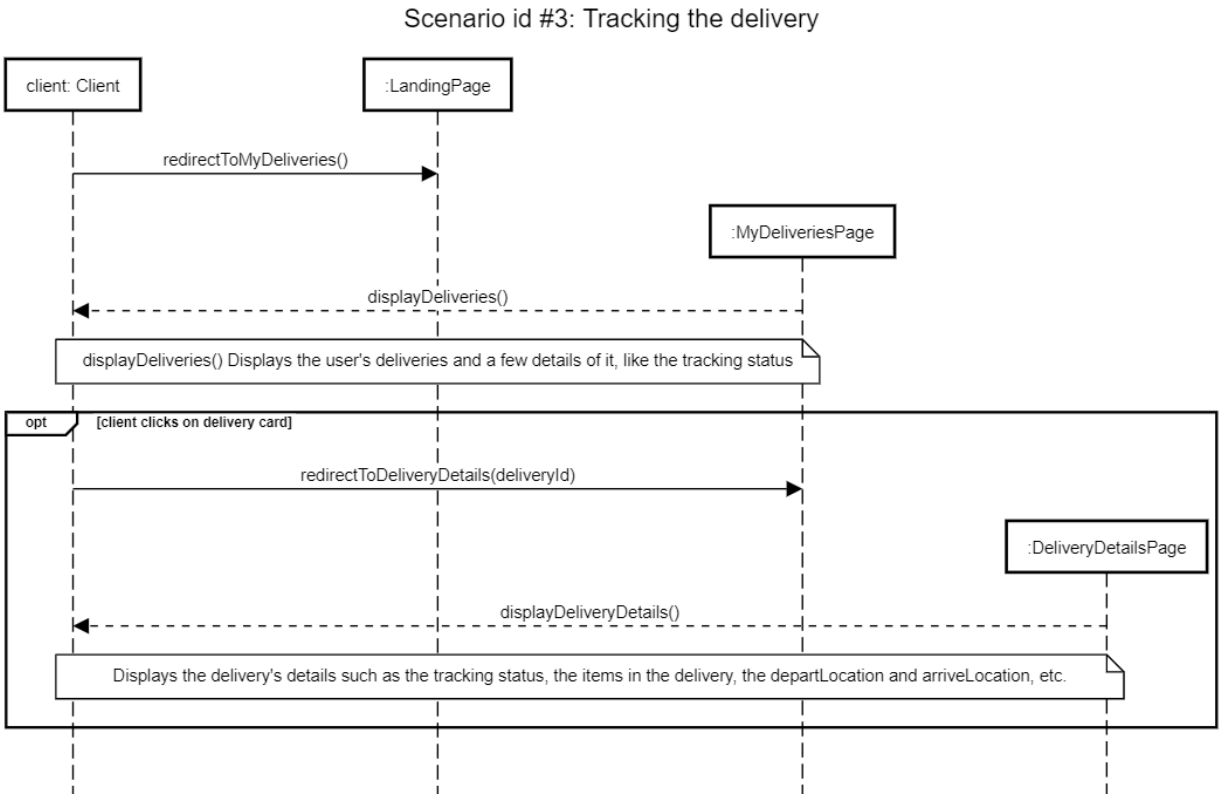
Use Case 2:

This functionality is initiated by a client who logs in to their account and wants to request a quotation for a specific delivery.



Use Case 3:

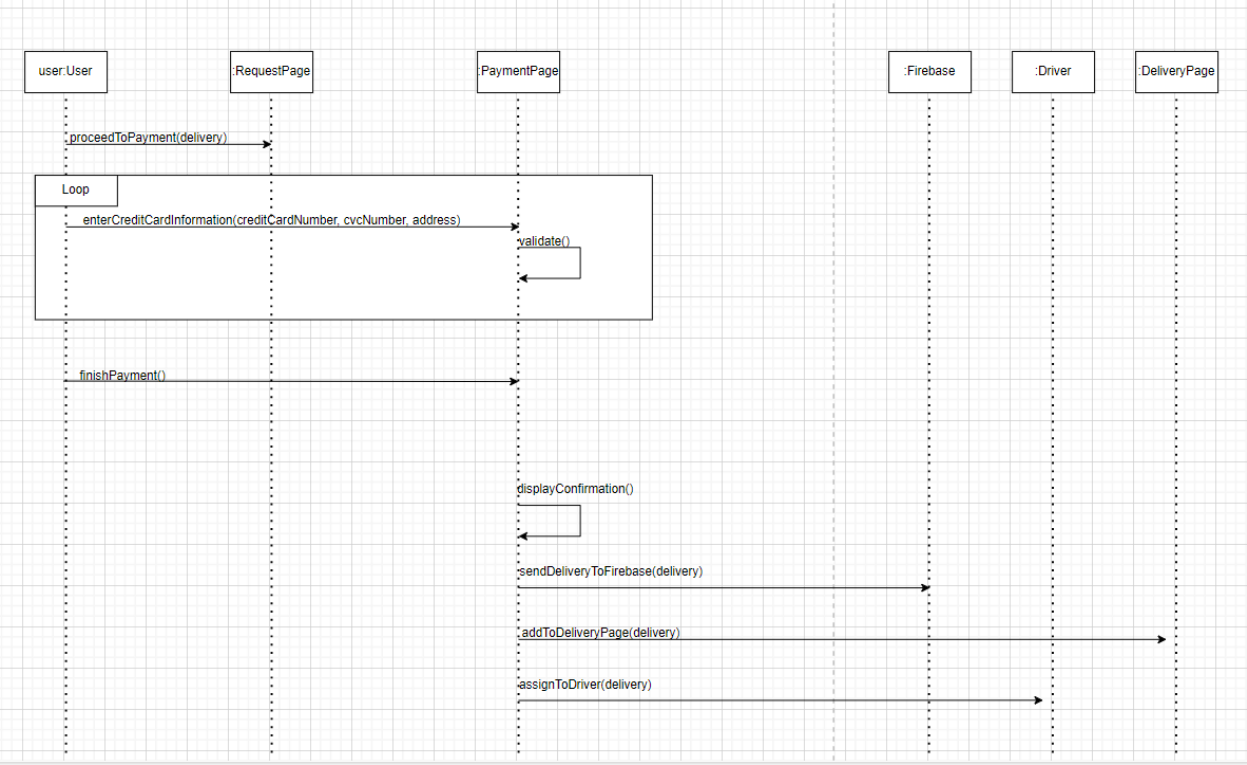
This function is initialized when a client wants to know the tracking status for their delivery.



Use Case 4:

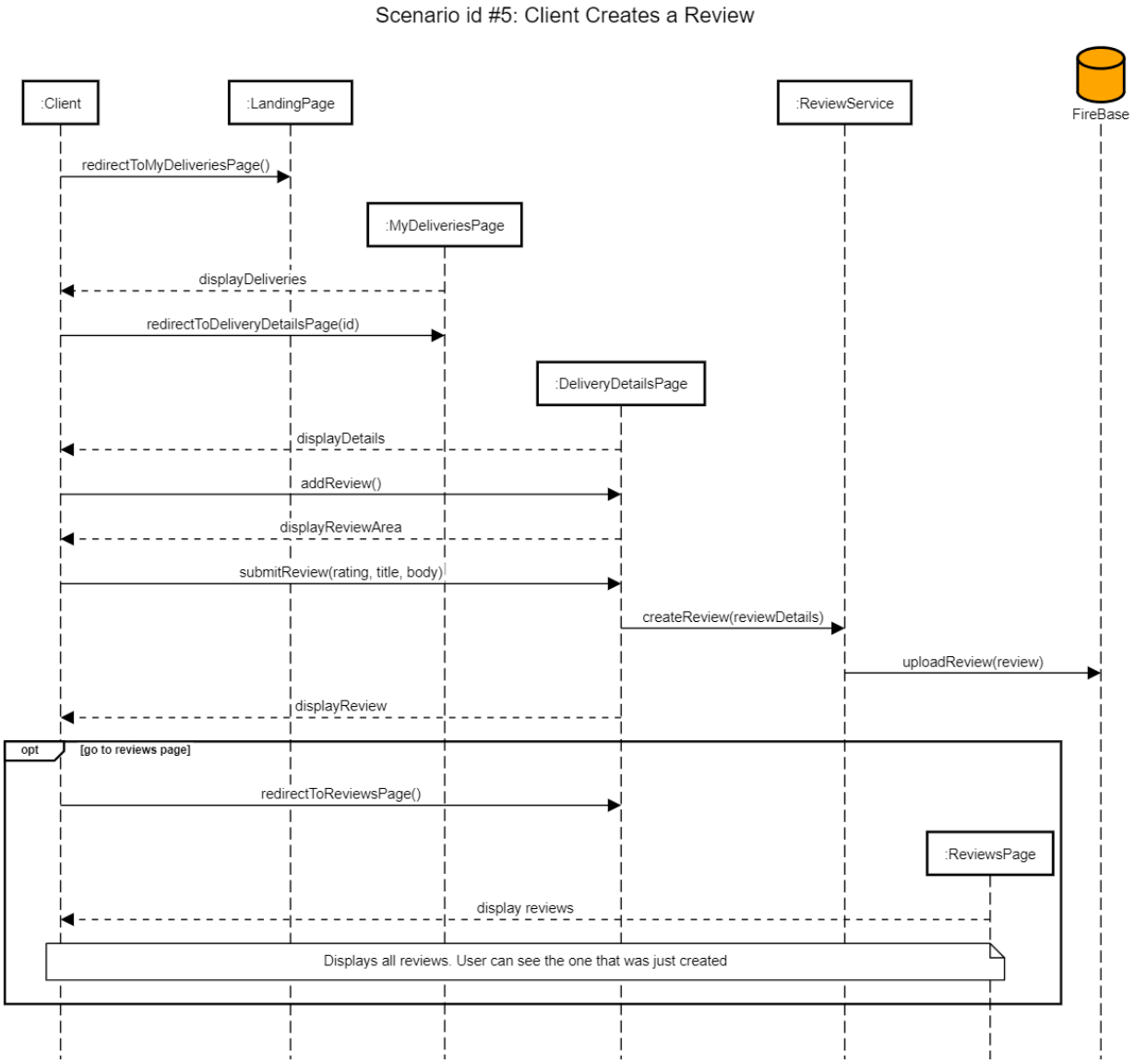
This function is initialized when a client is ready to pay for a delivery service they have previously specified.

Make Payment



Use Case 5:

This function is initialized when a client wants to review their delivery service.



Use Case 6:

This functionality is initialized when a customer sends a message to the chat box in order to receive feedback on the message that they wrote.