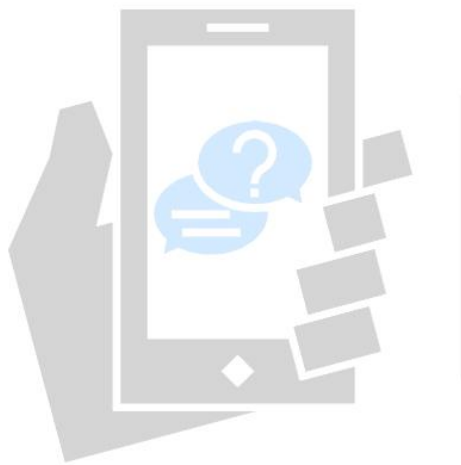


Permission and Request Online System

UML Sequence Diagram



PROS Version 3.0

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UML Sequence Diagram

Aim:

Using the identified scenarios, find the interaction between objects and represent them using UML Sequence diagrams.

Prerequisites: Some basic understanding of UML interaction diagrams

Input: Problem Statement

Students of SSN College of Engineering residing in Hostels as well as students who travel a long way to reach college (Day scholars) face various issues due to an overload of manual paperwork, getting authentication from concerned authorities, and hassles involved in getting various documents.

Output: UML sequence Diagram

Apply the following concepts in sequence diagram

1. Lifeline Boxes and Lifelines

Each classifier role has a lifeline as illustrated in the diagram.

2. Messages:

Each solid arrow depicting an action has its corresponding meaning mentioned through the message.

3. Focus of Control and Execution Specification Bars

The Application has an infinite focus of control as it will always be running, while the other classifier roles have their focus of control using the execution specification bars restricted to the timeline during which they interact with the application.

4. Illustrating Reply or Returns

A response message is also present wherever needed to acknowledge the incoming action. This concept illustrates the replies involved in the interactions. There are no returns in our sequence diagram.

5. Messages to "self" or "this"

A response to the application is sent and during login and registration. A response to the database is sent when a request is made.

6. Creation of Instances

An instance is created depending on whether the type of the user logging in is student or faculty.

7. Object Lifelines and Object Destruction

Object lifelines and destruction is implemented for the Student during the “Log In” and “Log Out” process. Similarly, Object lifelines and destruction is implemented for the Faculty during the “Log In” and “Log Out” process. The lifelines are defined by the beginning and end of the two actions.

8. Diagram Frames in UML Sequence Diagrams

Our sequence diagram constitutes of various scenarios that are a result of alternate scenarios, Eg: Results of request for permission i.e. accepted or rejected.

9. Looping

There is a loop in our diagram that the login process is looped till a successful login is performed or registration is performed.

10. Conditional Messages

There are conditional messages as responses to different scenarios involved in validation of user credentials, requests, support documents, etc.

11. Conditional Messages in UML

There are conditional messages as responses to different scenarios involved in validation of login process, QR Code if request is accepted, etc.

12. Mutually Exclusive Conditional Messages

There are conditional messages as responses to different scenarios involved in validation of Requests using QR Code. These conditional messages are NOT mutually exclusive as only one scenario is possible in our implementation.

13. Iteration Over a Collection

NILL (Our sequence diagram doesn't necessitate the above concept)

14. Nesting of Frames

This concept is visible in sequence diagram 1, where Login() and Register() are two scenarios which have an alternative and loop frame inside each scenario

15. Messages to Classes to Invoke Static (or Class) Methods

NILL (Our sequence diagram doesn't necessitate the above concept)

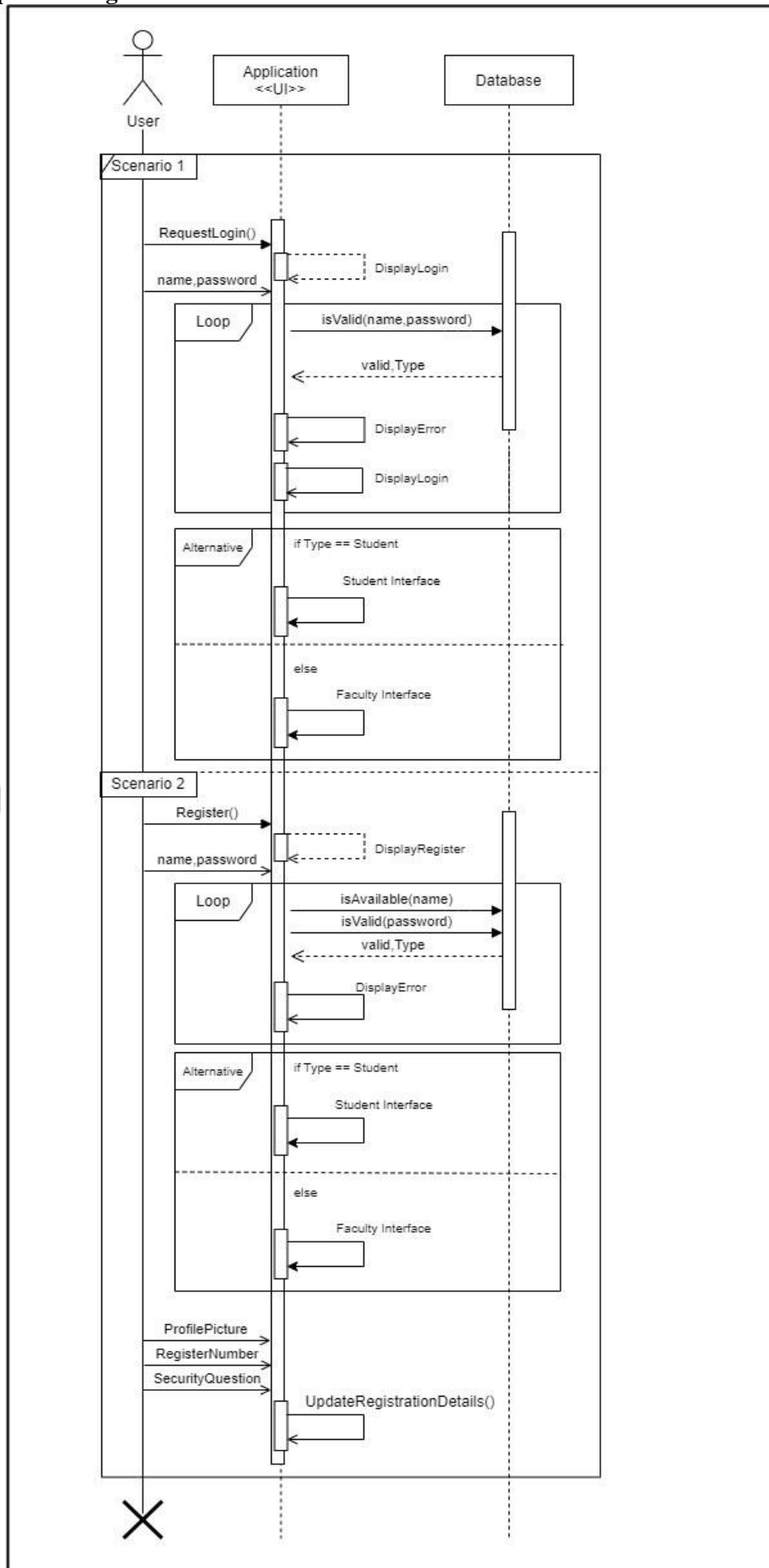
16. Polymorphic Messages and Cases

NILL (Our sequence diagram doesn't necessitate the above concept)

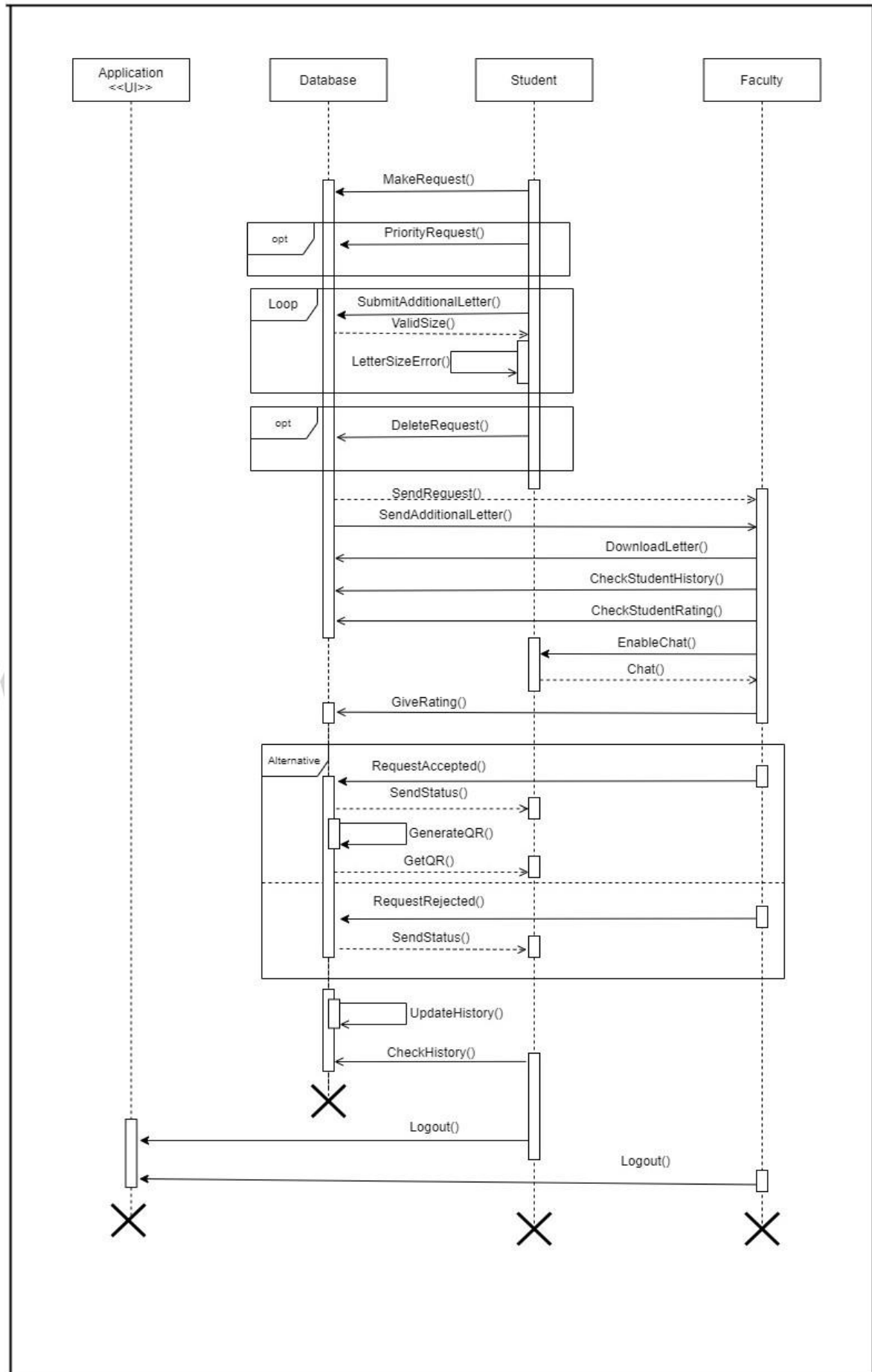
17. Asynchronous and Synchronous Calls

Various requests and login/register details include synchronous calls whereas checking student history and student rating require asynchronous calls

Sequence Diagram 1:



Sequence Diagram 2:



Collaboration Diagram:

