PROJECT PROPOSAL DRAFT

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Objectives

- Usage of HTTP protocol for data transmission
- Concurrent processing of HTTP requests
- Implementation of a data warehouse
- Synchronization of data across the databases

Project Description:

This system will enable students to reserve books in a library. The scenario looks as following: A students opens the booking application, searches for a book, ether by name, author, title or for the list of available books(default option) and book it. An email is sent to user, informing that the reservation was successfully performed. After that the user can go to the library and take the book. Figure 2 shows the activity diagram of the described scenario.

Project Scope:

1. Create a data warehouse
2. Implement a REST API for CRUD operations with data from data warehouse
3. Search by path parameters
4. Data replication:
    a. Creation and configuration of the existing nodes for syncing
    b. Implementation of the synchronization mechanism which allows the automatic update of from one node to anothers.

Tools and technologies:

- Programming languages: Backend: Java, Frontend: Javascript
- Frameworks: Spring Starter, AngularJS
- MongoDB
- Git VCS
- Jenkins CI
- Maven

- Swagger
- Postman
- Doxygen
- Slf4J/Log4J
- JUnit
- Cobertura
- Contiperf
- Microsoft Visio
- Intellij IDEA

Project Architecture:

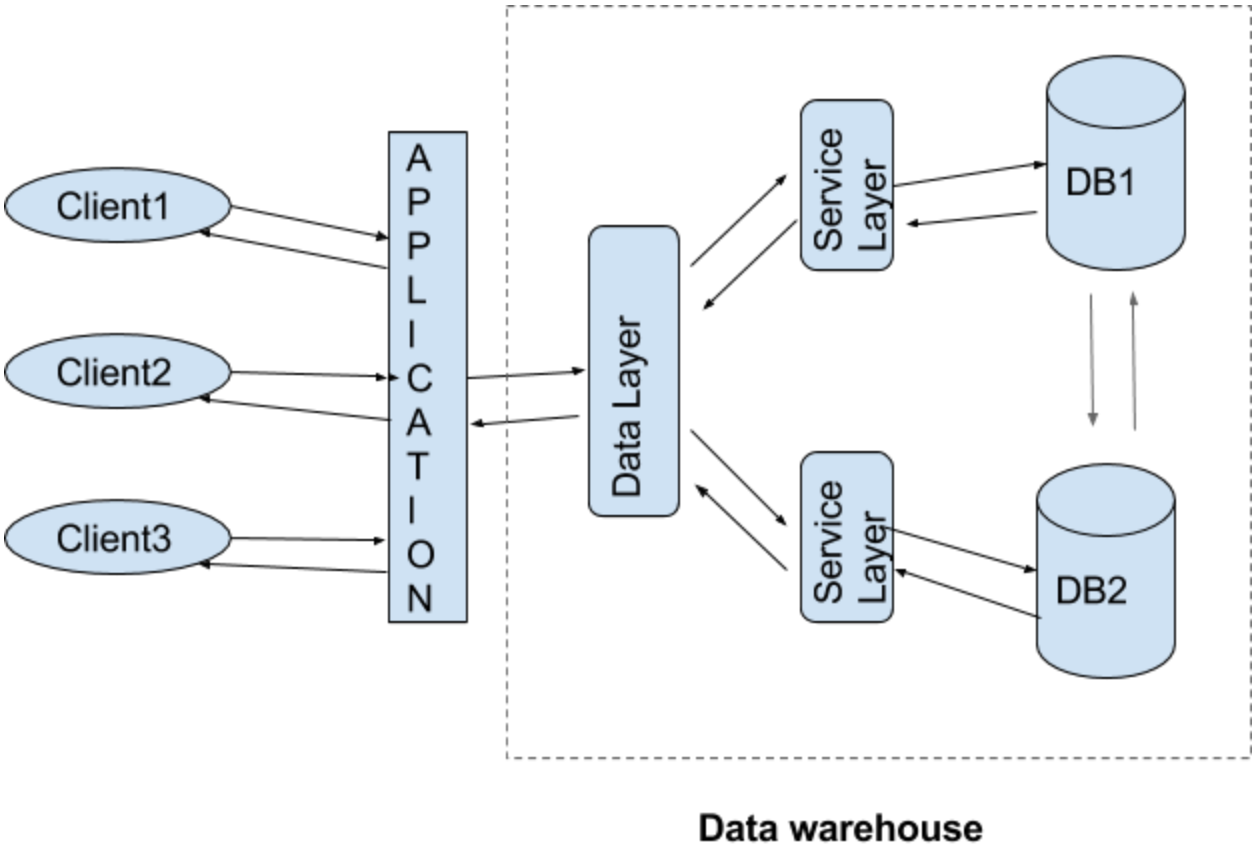

Figure 1: Application architecture diagram

Architecture Description:

Database Entities

User - *The client that uses the application in order to manage reservations.*
Reservation - *The state of the book availability*
Book - *The subject of reservation.*

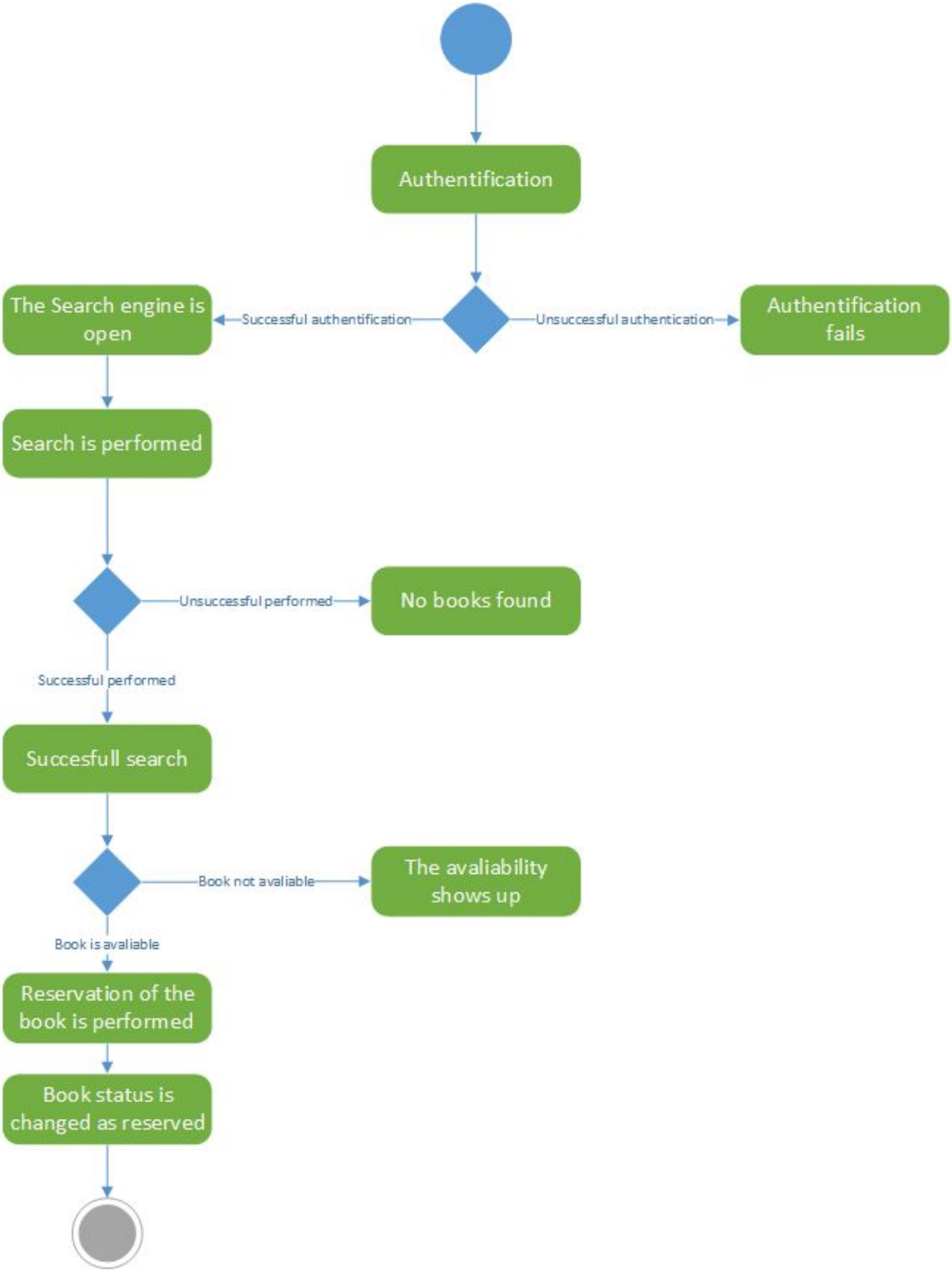

Figure 2. Activity diagram for bookit system