



# Advanced Object-Oriented Software Engineering

PHASE 3

GROUP 11.B

Muhammad Harfoush	150254
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## Class Diagram

Figure 1: Class diagram, updated for Phase 3

## Design Patterns used

I have used a spectra of design patterns, new and old:

- Remote Factory
- Remote Proxy
- Read-only Interface
- Observer Pattern
- Remote Façade
- Façade

I will discuss the existence of each in a separate document.

## Package Creation

This section is created to compensate for the non-existent Package Diagram.



As you can see, all packages accommodate classes that are relevant to each other. This way, I made sure that every class has an extra layer of protection, and also an increased level of organization.

I was about to implement nested packages when it came to RMI; separating the server-side functionality from client-side functionality, but time was not my friend.

Figure 2: Package Structure

## Implementation

Other than the typical functionality that is present in the class diagram, GitHub and MongoDB were implemented successfully and without errors.

Due to the complex nature of the project, and aspects that required more attention (and honestly, more workforce), I did not implement perfectly. The existing implementations do not cover the functionality that can be presented in this project, and some of the implementations are simply subpar.

Yet, as you will notice, there are interesting concepts that I wanted to try here. For example, using Observer pattern to facilitate the creation of a read-only API. I believe with more attention and time, I would have created APIs and implemented them myself.

The effort, though, was there. I had the intention to create something worth accepting, and hopefully, you will see this as well.

## Other related problems

### What happened in your group?

Combining miscommunication, unproven opinions, and lack of actions was the catalyst for this Group 11 separation.

As you know, I have done more than a fair share in Phase 2 submission. In this phase, this was about to get even uglier.

I believe separation was for the best, at least for me, as I gained freedom to create and try. This submission would have been much worse if Group 11 was not separated.

### What is missing from this project?

The objectives that were not met are:

- No connections to the GUI.
- Project of limited functionality.
- No API implementation.
- No Testing.
- No RMI implementation.
- Design Patterns are not fully implemented.

## Disclaimer

This phase of project, and the refinements done regarding previous phases, are done completely by Muhammad Harfoush, with no contribution of outside help, or even by Group 11.A before our separation.

It was also done in the span of 72 hours, clocking ~24 hours of work.