

Design Plan Adventurehub

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**Revision Table**

|  |  |  |  |
| --- | --- | --- | --- |
| Version | Date | Author | change(s) |
| 1.0 | 13/9/2022 | Arenco Meevissen | Initial document |
| 1.1 | 7/10/2022 | Arenco Meevissen | Added context to c4 and added High level architecture |
| 1.2 | 2/11/2022 | Arenco Meevissen | Added C4 level 4 and context to level 3 and 4. Added Class Diagrams till now implemented |
| 1.2.1 | 4/11/2022 | Arenco Meevissen | Changed title to include project name |
| 1.3 | 26/11/2022 | Arenco Meevissen | added CI/CD diagram and changed C4 level 4 |
| 1.4 | 29/11/2022 | Arenco Meevissen | Changed C4 level 4 to include a better representation of how it really is and an explanation of it |

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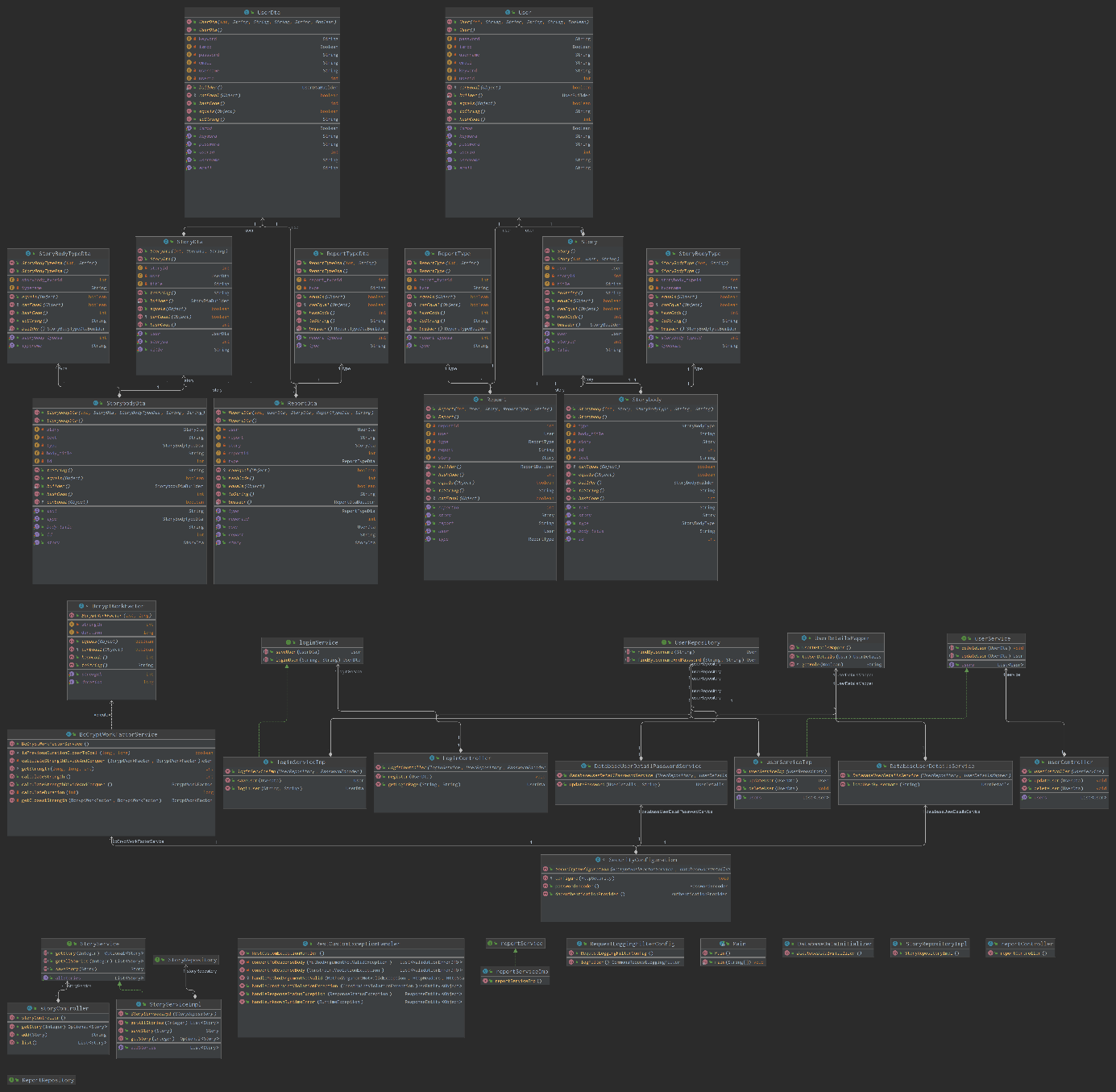
# 1 Introduction

This document shows the designs for the structure of the Class diagram, entity diagram for the database and the expected web designs for this project

# 2 Class Diagram

Afbeelding met tekst, monitor, schermafbeelding, zwart

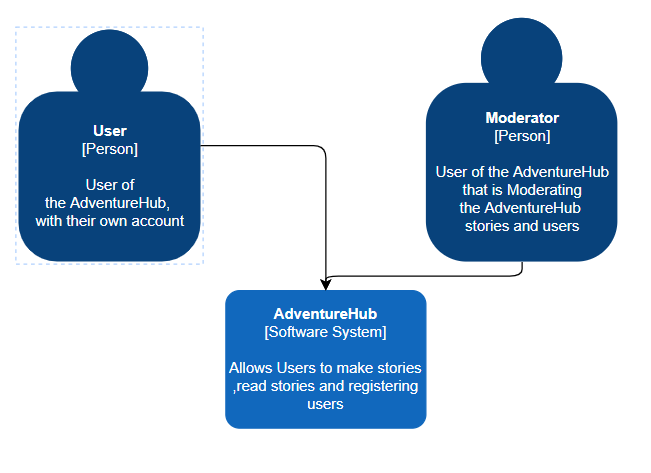
Automatisch gegenereerde beschrijving



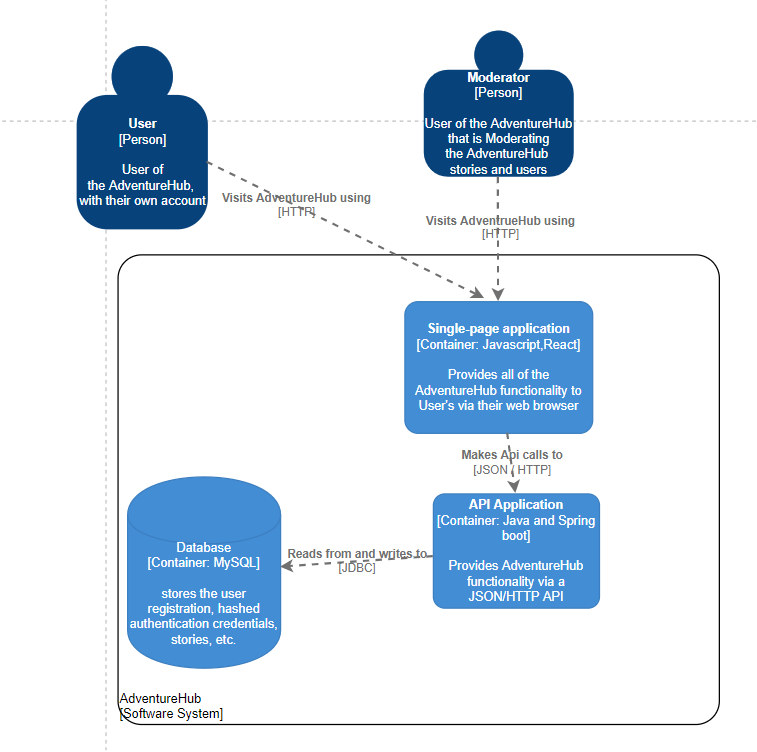
# 3 C4 Diagram

The use of Java is because of its cross-platform support and Type safety (Hartman, 2022) that java enforcers which helps with prevention of illegal operations and memory safety. (Wikipedia contributors, 2022), (Srivastava, 2022)  
The spring boot is used because it provides powerful batch processing capabilities compared to Spring MVC, it also has an auto-configuration feature that some others lack like Spring MVC. (Difference Between Spring MVC and Spring Boot, 2022)  
  
React is used for its code reusability, the fast community that it has and the huge number of libraries that it has. It also is more flexible compared to Vue.js (which is also a JavaScript framework). (Patel, 2022 and Yusov, 2020)  
  
The MySQL Database I chose because of the data model that it uses which is a relational database, the support of SQL and that Java is one of its supported languages and its simple syntax. It also works well with systems like Windows, Linux, MacOS land others. (Editor, 2019), (Wikipedia contributors, 2022b), (MySQL System Properties, n.d.)

## 5.1 C4 level 1 system context (system, users, dependencies)

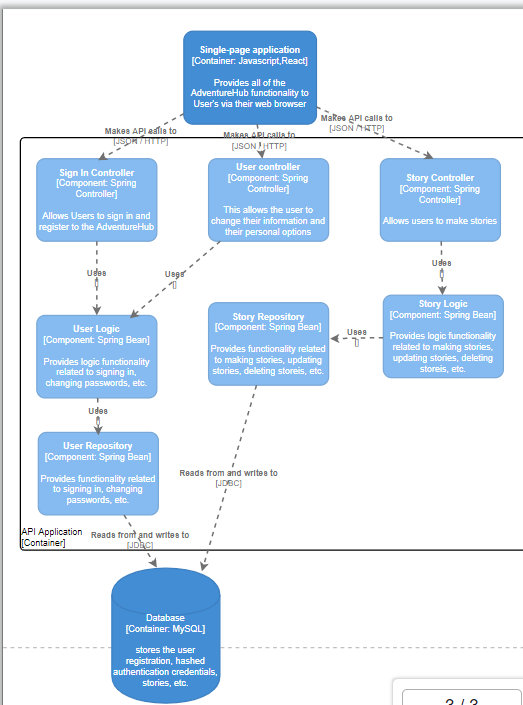


## 5.2 C4 level 2 Containers (overall shape technologies choices)



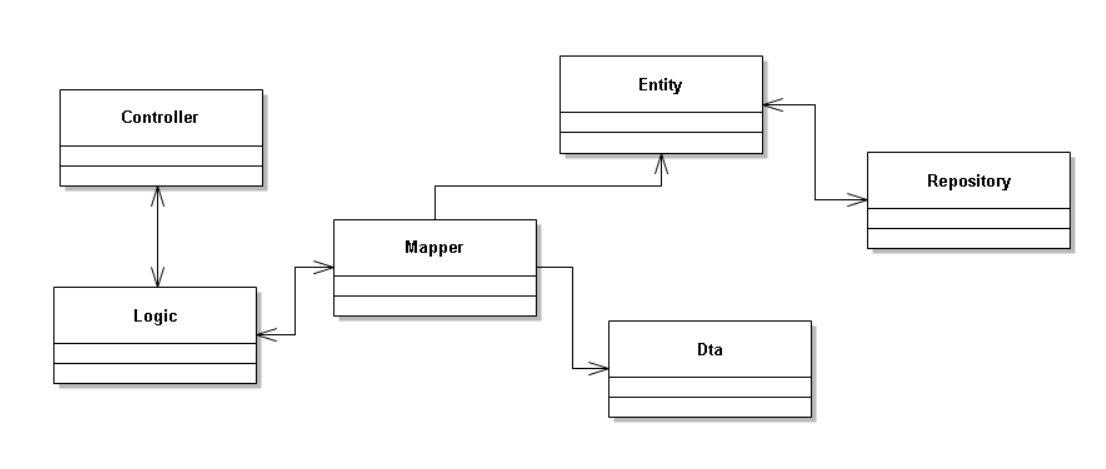
## 5.3 C4 level 3 Components (components and their interaction)

I use Spring boot to connect to everything and it has powerful batch processing capabilities that Spring MVC doesn’t have.  
for the Repository I use the JPA repository so that less time is used to produce the individual query components to the database and the basic validation to the database is used.  
For the security I use spring security because this incorporates finely with Spring boot and instead of Apache Shiro the security is more separate from the business logic and it also has a general more community support. (Wagde, 2022)



## 5.4 C4 level 4 Code (Implementation details)

The image below is basic structure that was in mind for this project. The unseen blocks that are not in this diagram are the application and configuration/security layer there are.  
First it goes to the controller class of the corresponding request for example everything relating to stories goes to the story controller while everything with users (not counting login/register this is a separate class because of security reasons) goes into the user controller class. In the controller class the corresponding logic class will be called to do the functionality that needs to be done and validation of the input. The logic layer uses a mapper class of the corresponding type it needs and transforms it from an entity to a DTA object and gives it back to the logic class. When the transformation of the DTA to entity is done then it uses this object to send it to the Repository class of the corresponding entity. The repository class gives back an entity, list of the entity or nothing back. If there is something given back it uses the Mapper again to make it a DTA object and gives it to the logic class if it still needs to do something with it.

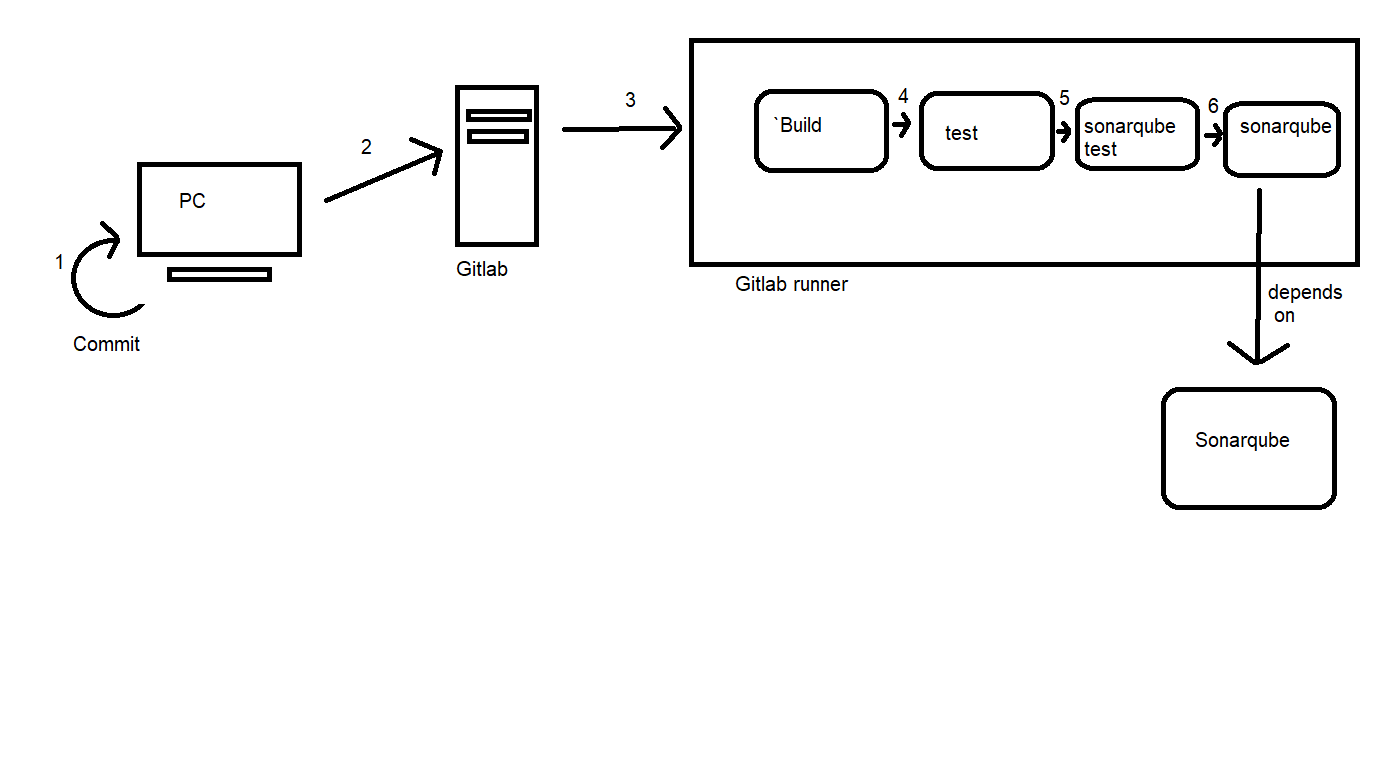


(Class diagram & explanation)

# 6.Ci /CD diagram

The diagram shows how when a Gitlab runner is triggered by a developer how it will execute it.

We start at 1 where the developer commits their work on their version branch and does it till satisfied. Then at 2 comes when the developer pushes their commits to Gitlab so others can see and get the commits that the developer did at number 1. At 3 the Gitlab runner is triggered this can be done by keywords or the branch. Inside of the Gitlab runner we have the following categories Build, test, SonarQube. At build the backend is tested if it can build. When build is successful (4) test will be triggered to start this test if all tests that are defined are successful. The moment that test is successfully done (5) then SonarQube will start, and this has a dependency on the application SonarQube which needs to be running



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