System Architecture – Folie a Deux

The application will build using microservices architecture. We will be having 3 services, 1ˢᵗ service is client-side front-end application written in ReactJs, 2ⁿᵈ service is a server-side back-end built in Springboot Java and 3ʳᵈ service is a database application using MySQL for storing and maintaining data. The front-end and back-end service will be independently deployed on AWS.

Back-End Technology Stack - Springboot:
- Create an APIs for various functionalities and actions.
- Create an API to connect to database.
- Integrate framework with database.
- Junit Testing
- Java

Database:
- Amazon RDS
- Create separate tables for users, admins and book inventory.
- Create tables to hold book inventory, reviews, purchases.

Deployment Stack:
- AWS deployment solutions
    - S3Bucket for the front-end app
    - Beanstalk for the back-end app
- Use of Docker container for load balancing solutions

Front-end Technology Stack:
- React Js– JavaScript framework
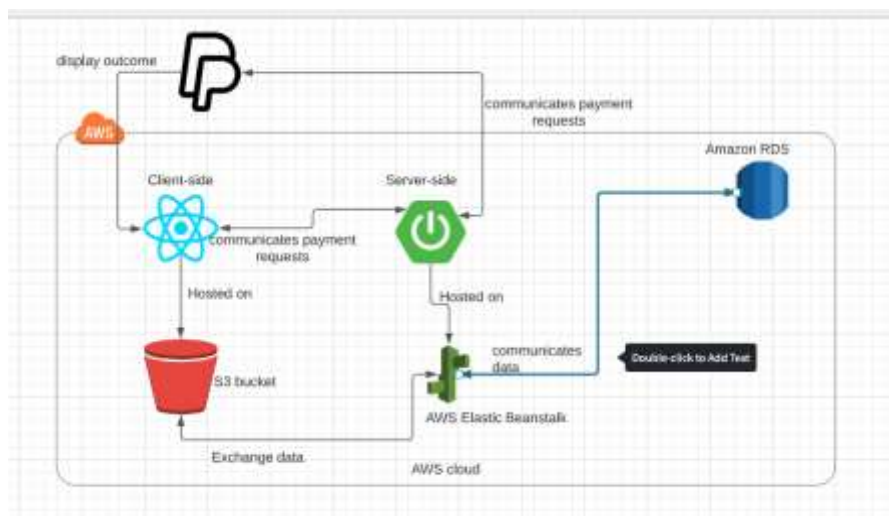- HTML/CSS/JS
- Mocha Testing

Fig1.1 A full overview of the application's architecture

System Description

The app will consist of a front-end where users can enter their details to either register or login. They will be redirected to the same page they have landed on when first launching the website. An unregistered user can still view and browse book present on the app but not perform any action unless they are logged in. Once users are logged in, they will be able to perform several services such as buy, sell, list, review and leave comments about books for others to explore. There will be an admin account where they will be able to monitor users' actions, payments and maintain book inventory.