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Contents

Introduction

The following research paper is intended to justify the documented choices in the Design document of the project. The project in question is my semester 3 assignment. You can find more information about the assignment in the Project plan.

Methods

The research method used is from the DOT framework – Available product analysis. In the following sections, technologies are going to be presented based on their features, resources, and availability.

Results

React

Popular for being a component-based JavaScript front end web library, React definitely has its own advantages. According to an article by (Surve, 2021), there are several key reasons to use react:

- Flexibility
- Great developer experience
- Facebook support & available resources
- Broad community support
- Great performance
- Easy testing

Furthermore, the teaching institute provides resources and teaching materials for learning React.

Material UI

Popular for its aesthetic design by many peers, Material UI is a UI JavaScript library with over 82.8k stars in GitHub as of writing this document (GitHub, 2022). The home page of the library (Material UI, 2022) points out the key advantages:

- Fast shipping
- Aesthetic
- Customizability
- Cross-team collaboration
- Trusted by thousands of organizations

Java

Java is a popular object-oriented programming language, holding the 3rd place as of writing this document, according to the TIOBE Index (TIOBE Index, 2022). The main reason of choosing this framework is that it is required by the teaching institute.

Spring

Required by the teaching institute, Spring Boot is a Java framework which ensures great developer experience, security, speed, simplicity, and productivity, according to its website (Spring, 2022)

Hibernate

Hibernate is a Java object relational mapper (ORM), which has many great features that enhance the developer experience. The teaching institute recommends it, and it is also easy to use.

MySQL

MySQL database engine is among the most popular engines, according to the cited ranking (DB-Engines, 2022). Also, one of the main reasons for choosing the technology is familiarity with it, as the priorities are focused more on learning Java and React.

SonarQube

SonarQube is a quality assurance software, used by companies to ensure code quality. Main reason for choosing is that it is required by the teaching institute.

Swagger

Swagger is an API documentation software, popular for its ease of use. Primarily chosen for its ease of use.

GitLab

GitLab is a Platform as a Service (PaaS), used by Agile teams to organize project development. It is required by teaching institute and provides free access for hosting projects. An article from 2022 (Geeks for Geeks, 2022) pinpoints the key features:

- Open-source community edition repository management platform.
- Easy Maintaining of a repository on a server.
- Offers tools like Group Milestones, Time Tracking and Issue Tracker, etc. for effective development.
- More Spontaneous User interface and authentication features.

- User Permission and Branch protection are enhanced.

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