

Tech Spec

Student Multi-Tool

10.6.2021

Team Marvel

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Overview

Our application aims to be the one stop shop to help students with common college life problems. We will be developing this application as a web application using Google Chrome. Our product is being built as a Model-View-Viewmodel or MVVM. MVVM enforces separation of concerns which is beneficial for us since we have multiple features that don't rely on other features. The more accurate our information is and more information we can provide to users the better off their college experience can and will be.

Assumptions

- Users are able to read and understand American English
- Users are able to make required time adjustments to the Pacific Time Zone if located outside the time zone themselves.
- We will be supporting the Chrome Browser using the latest version available in January 2022. We plan on supporting each version until the latest version of Chrome available in April 2022.

Out of Scope

- Offline use
 - An Internet connection will be required at all times whilst using this application in order to send and receive information from server and database.

Software and Hardware

- Collaboration Tools
 - Discord (latest desktop or mobile client, or in-browser)
 - Text and voice communication
 - Daily stand up meetings are performed over discord
 - Jira
 - Used for creating project backlog
 - Used for sprint planning and task assignment
 - All team members have access and can easily make changes when needed
 - Google Docs
 - Planning and artifact generation
 - Easy access for team members to edit information on same document together

- Can see live updates
 - Google Sheets
 - Burndown charts are made here
 - Allows team members access to edit document as need be
 - Can see live updates
 - Diagrams.net
 - Flowchart maker and online diagram designer
 - Allows easy way to make flowcharts and diagrams
 - Site map, current and proposed processes, and HL Design were created here
 - Allows all team members access to edit as please
 - Can see live updates
 - Google Drive:
 - File sharing for Google Docs, Google Sheets, and Draw.io
 - Organized way to keep control over documents needed for each milestone
- Communication with Client
 - Outlook
 - Deliverables and questions are to be emailed to the client
 - Zoom (latest version)
 - Meetings with client regarding feedback about deliverables are done through zoom
 - Retrospectives are also performed over zoom
 - Slack
 - Backup communication provided by client in case of emergency and no other way to communicate
- Operating Systems
 - Windows 10
 - 64-bit
 - Desktop operating system used for development and testing
 - MacOS
 - Version 11.2.2 and 10.15.5
 - Desktop operating system used for development and testing
 - Linux
 - Ubuntu 20.04 LTS
 - Desktop operating system used for development and testing
- Hardware Requirements

- Storage: 250 GB minimum, 500 GB recommended
 - Memory: 4 GB minimum, 8 GB recommended
- Version control
 - Git (latest version) and GitHub:
 - Maintain and control versions of project
 - Organized way to keep track of different versions, code, and documents for other people to see
- Project Development Software
 - IDE
 - Linux and Mac: Visual Studio Code 1.59+
 - Code editor able to build and compile code in multiple languages
 - Windows: Visual Studio 2019 Community Edition
 - Code editor able to build and compile code in multiple languages
- Programming Languages
 - Frontend
 - ECMAScript 11+^[1]
 - Need for client side logic
 - HTML 5 (pending approval)
 - Markup language used by web browsers to render information on the world wide web.
 - Needed to create and display web pages on browser
 - Browser side views
 - CSS 2.1 (pending approval)
 - Language for describing presentation of web pages
 - Needed for formatting alongside HTML
 - Browser side views
 - MySQL 8.0.26 (latest release)^[1]
 - Relational database management system based on SQL
 - Needed because we are using a relational database
 - SQL Server Management Studio (Database Client) Web Server
 - Backend Framework
 - .NET 5+, and .NET 6+ (releasing in November 2021)^[1]
 - Software framework to help run web applications
 - Needed for framework for development of website
 - C# 9.0^[1]

- General purpose, multi platform language used in .NET
- Data Store
 - Windows: Sql Server 2019 Developer/Express Edition (Database - Engine)^[1]
 - Mac and Linux: MariaDB 10.6+^[1]
- Web Server
 - Windows: IIS 10+^[1]
 - Mac and Linux:
 - Apache HTTP Server 2.4+^[1]
 - Nginx 1.20+^[1]
- APIs
 - Google Maps JavaScript API (pending approval)
 - Needed for a feature, which provides directions to users and uses a map to showcase different available establishments
 - Angular (tentative, pending approval)
 - Needed for MVVM implementation
 - Reactjs (tentative, pending approval)
 - Needed for MVVM implementation
 - Vue.js (tentative, pending approval)
 - Needed for MVVM implementation

References

1. Vatanak Vong, CECS491A Section 05 Lecture, 30 Aug. 2021