Building a Web Application to Replace the Existing Configuration Manager Application Used to Configure Diona Solutions

Project Proposal

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The project I am going to complete for my final year is going to be a work based web application. The final product will be included in Diona’s suite of solutions.

The aim of the project is to replace the existing configuration manager which was built on Ext JS which is an older technology that has become very difficult to maintain. The plan is to create a newer web application that is more extensible, easier to manage and to improve the visual display of the web application to appear more modern.

All the solutions created by Diona are highly configurable. Each of Diona’s solutions come with the Diona Configuration manager, which is a web based configuration tool. It is used to configure a comprehensive range of applications and system level properties, including but not limited to:

* Business configurations such as the types of documents that can be uploaded, assessment and form definitions, dynamic screens.
* Integration configuration to map particular business functions to the systems of record that the mobile solutions communicates with to retrieve and modify data.
* Technical configurations such as session timeout values, security, auditing and system logs.

For the project process, I am going to use iterative development. I will work in 1-2 week blocks called sprints. This will divide the workload into smaller and more manageable sections. At the beginning of each sprint the team will go through what they have built in the previous sprint and discuss if it is suitable or if there are any improvements that can be made. The supervisor will then assign new work to me. JIRA will be used to track the project cycle.

The following is a list of technologies I plan to employ during my project:

* NodeJS

Node.JS is an open-source, cross-platform, back-end JavaScript runtime environment that runs on JavaScript Engine and executes JavaScript code outside a web browser, which was designed to build scalable network applications.

* MongoDB

MongoDB is a source-available cross-platform document-oriented database program. Classified as a NoSQL database program, MongoDB uses JSON-like documents with optional schemas.

* JavaScript

JavaScript is a scripting language that enables you to create dynamically updating content, control multimedia, animate images, and pretty much everything else.

* CSS

Cascading Style Sheets is a style sheet language used for describing the presentation of a document written in a markup language such as HTML or XML.

The following is a list of tools and frameworks I intend to use:

* Express.JS

Express.js is a back end web application framework for building RESTful APIs with Node.js. It is designed for building web applications and APIs.

* PUG

PUG is a JavaScript library. It is an easy-to-code template engine used to code HTML in a more readable fashion. PUG equips developers to code reusable HTML documents by pulling data dynamically from the API.

* Bootstrap CSS

Bootstrap is the most popular CSS Framework for developing responsive and mobile-first websites.

* PassportJS

Passport is Express-compatible authentication middleware for Node.JS

The software design pattern I will use for my project is MVC (Model-View-Controller). The model manages the data. The view handles layout and design. The controller routes commands to the model and view parts. In my project the data is stored in MongoDB. The model which is written in JavaScript communicates with the database and can implement create, read, update and delete of the database. The controller communicates between the view and the model using ExpressJS. The view which defines the user interface is written in PUG and bootstrap CSS.

As all the technologies for my project were chosen by my company, for my research I will investigate similar technologies, and explore their advantages and disadvantages.