Software Requirements Specification

for

Plan Analysis Application

Version 1.0 approved

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1. Introduction

1.1 Purpose
The purpose of this Software Requirements Specification is to describe the functionalities, as well as nonfunctional requirements, of the Plan Analysis Application. The document will include each aspect of the project that is included in the first version of the software which is expected to be released in May 2020.

1.2 Intended Audience and Reading Suggestions
The document is targeted for developers, project managers, marketing staff, users, testers, and documentation writers, as well as the Los Angeles County Department of Regional Planning staff that maintains the software.

1.3 Product Scope
The Plan Analysis Application (PAA) is a web application produced for the Department of Regional Planning. PAA will be a simple and easily accessible application for users to interact with to keep track of the status of their projects. A navigation page will display a list of all the projects along with a search widget. The user could search anywhere from permit forms to project plans. PAA will also generate electronic permit forms with user input capabilities. These forms will be pre populated with information pertaining to the project to minimize manual processing. The application will also be easy to maintain and upgrade by the planning staff who operate it.

1.4 Definitions, Acronyms, and Abbreviations
PAA - Plan Analysis Application
REST - Representational State Transfer
API - Application Programming Interface
JSON - JavaScript Object Notation
1.5 References

- SRS Design template
- User interface guide for Material UI
- REACT documentation
- REDUX state management documentation
2. **Overall Description**

The Department of Regional Planning typically copies and pastes information from various sources such as EnerGov, GIS, and Title 22 into template permit documents. Such practices are highly prone to copy and paste errors therefore our task is to automate the process.

2.1 **Product Perspective**

PAA will be introduced as a new system to the Department of Regional Planning. The web application shall use data from both EnerGov and GIS to display the plans for a given project. This includes the projects information such as plan id, name, location, and many others. It will depend heavily on the EnerGov system currently in use. Currently, there does not seem to be another software that draws from these two data sources that LA County has at their disposal. The motivation is to help automate the process of viewing and filling out permits that customers need from the Regional Planning department.

2.2 **Product Functions**

I. Provide an API for the database that EnerGov pulls data from.

II. A list of template documents associated to a plan.
   A. A user will be able to choose which document to generate for a specific plan.
   B. The template document will be pre populated with information from the department’s databases.

2.3 **User Classes and Characteristics**

The users for this product will be the employees at the LA County Department of Regional Planning, specifically planners who are in charge of manually inputting information from various sources into template documents.

2.4 **Operating Environment**

The Navigator will run on a server inside the LA County network. It can only be accessed from a client connected to the LA County network. The Navigator will require:

I. node and npm to be installed on the server.

II. TCP port 80 to be open for HTTP connections.
2.5 Design and Implementation Constraints
   I. Project must be private due to the sensitive information from the LA County’s database.
   II. Since EnerGov only works with Internet Explorer we may have trouble using the API.
   III. GIS API is still under development so not all tools will be available.

2.6 User Documentation
   I. User manuals will be provided to the client.
   II. As well as a tutorial on how each of the modules work in the project.

2.7 Assumptions and Dependencies
   I. The assumption is that this will be an internal web application that runs a server and will be accessible to employees of the Department of Regional Planning via a web browser after authentication.

2.8 Apportioning of Requirements
   I. Search and filter functionalities.
   II. The generation of documents with fields auto filled with information from various sources (EnerGov, GIS, and Title 22).
3. External Interface Requirements

3.1 User Interfaces
Web application should allow complete navigation using the keyboard alone, in addition to using a mouse and keyboard combinations.

3.2 Hardware Interfaces
The Navigator does not have any hardware interfaces.

3.3 Software Interfaces
I. Designed to connect to Microsoft SQL Server 18.4 via mssql package from https://www.npmjs.org

3.4 Communications Interfaces
I. The data passed from the Backend REST API to Frontend is structured as JSON object and arrays.
II. The web application provided by the Navigator is meant to be run on web browsers.
III. Frontend components use HTTP GET calls to retrieve data from the Backend.
# 4. Requirements Specification

## 4.1 Functional Requirements

### Frontend

<table>
<thead>
<tr>
<th>Requirement No.</th>
<th>Requirement Description</th>
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<tbody>
<tr>
<td>1.1</td>
<td>User shall be able to see a list of all plans at the url /plans.</td>
</tr>
<tr>
<td>1.2</td>
<td>User shall be able to click a plan and be able to see all information associated with a plan at the url /plans/[planId].</td>
</tr>
<tr>
<td>1.3</td>
<td>User shall be able to see a list of template documents he or she can click at the url /plans/[planId].</td>
</tr>
<tr>
<td>1.4</td>
<td>User shall see a preview of the document he or she has clicked filled with information of plan at the url /plans/[planId]/[document].</td>
</tr>
<tr>
<td>1.5</td>
<td>User shall filter the search for planId’s</td>
</tr>
<tr>
<td>1.6</td>
<td>User shall see the forms they can choose from for a specific plan</td>
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<tr>
<td>1.7</td>
<td>User shall filter forms while searching.</td>
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<td>todo</td>
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### Backend

<table>
<thead>
<tr>
<th>Requirement No.</th>
<th>Requirement Description</th>
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<tbody>
<tr>
<td>2.1</td>
<td>Backend application shall be able to connect to the Department’s Microsoft SQL Server.</td>
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<tr>
<td><strong>2.2</strong></td>
<td>Backend application shall return a list of plan ids for the page via the url route: /api/plans?page=[pageNumber]</td>
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<tr>
<td><strong>2.3</strong></td>
<td>Backend application shall return all information related to a plan via the url route: /api/plans/[planId]</td>
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</table>
4.2 **External Interface Requirements**

I. Allow the user to search planId’s.
II. Allow the user to search forms for their plans.
III. On visiting /plans the browser returns a list of plans along with a preview of information related to each plan.
IV. On visiting /plans/[planId] the browser returns all information associated to a plan along with template documents it can auto fill with information.

4.3 **Logical Database Requirements**

The database is already created and maintained by the LA County Department of Regional Planning. The developers will not need to make any changes or create any new tables in the database for development purposes.

4.4 **Design Constraints**

I. REACT is the main library being used. We need to make sure all libraries and APIs are able to be used seamlessly with REACT.
II. For styling Material UI was what was asked to be used.
III. A state manager needs to be used to create a single page application. The one used will be REDUX.
IV. Each department is behind a blue code firewall. All HTTP requests, JSON request, and query request need to be authenticated. Otherwise, everything may be blocked and require manual authentication.
V. Time may be taken up because the ticketing system creates a waiting period for request. In between requests the uptime to get authentication is 1 day to 7 days.
VI. The Regional Planning department is transitioning to JavaScript from PHP so it is a relatively new experience on the production level as there are no set standards.
VII. All the services provided by the application must be able to run on a single server.
VIII. The application uses a database that is shared by multiple departments therefore, approval will be needed from the Technological Committee.
5. Other Nonfunctional Requirements

5.1 Performance Requirements
   I. Software shall handle any amount of users.
   II. Software shall support multiple users searching and requesting plans.
   III. Software shall allow quick searching through data and information.

5.2 Safety Requirements
   No safety issues will be caused to users as a result of interacting with PAA.

5.3 Security Requirements
   I. Users need to be Regional Planning employees.
   II. Only those within the department will have authorization to the PAA.
   III. Users will be registered and created by the Department of Regional Planning.
   IV. The public will have no access to the PAA.
   V. API should be kept secure.

5.4 Software Quality Attributes
   I. The PAA shall enforce a form of security and protection.
   II. PAA shall allow for easy maintainability using REACT where users can make simple adjustments using JavaScript.
   III. PAA shall allow developers to customize and correct different aspects of the application.
   IV. PAA shall have scalability as a one page application using state managers.
   V. PAA shall have usability to allow a wide range of users to operate the application.

5.5 Business Rules
   The application is for internal use only, so there are no restrictions on the usability of its features.
6. Other Requirements

Not Applicable
Appendix A: Glossary

See section 1.4
Appendix B: Analysis Models

EER diagram of the database that EnerGov pulls data from:
Appendix C: To Be Determined List

Not applicable