Software Design Document for Da APP

Version 1.0 approved

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Table of Contents

Revision History

1. Introduction
   1.1. Purpose
   1.2. Document Conventions
   1.3. Intended Audience and Reading Suggestions
   1.4. System Overview

Design Considerations
   2.1. Assumptions and dependencies
   2.2. General Constraints
   2.3. Goals and Guidelines
   2.4. Development Methods

Architectural Strategies

System Architecture
   4.1. 
   4.2. 

Policies and Tactics
   5.1. Specific Products Used
   5.2. Requirements traceability
   5.3. Testing the software
   5.4. Engineering trade-offs
   5.5. Guidelines and conventions

Detailed System Design
   6.1 Name of Module
      6.1.1 Responsibilities
      6.1.2 Constraints
      6.1.3 Composition
      6.1.4 Uses/Interactions
      6.1.5 Resources
      6.1.6 Interface/Exports
   6.2 Name of Module
      6.2.1 Responsibilities
      6.2.2 Constraints
      6.2.3 Composition
      6.2.4 Uses/Interactions
      6.2.5 Resources
      6.2.6 Interface/Exports
   6.3 Name of Module
      6.3.1 Responsibilities
      6.3.2 Constraints
Revision History

<table>
<thead>
<tr>
<th>Name</th>
<th>Date</th>
<th>Reason For Changes</th>
<th>Version</th>
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</thead>
<tbody>
<tr>
<td></td>
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1. Introduction

1.1 Purpose
Da App (release version 1.0) displays legal information for victims of crimes. It shall be used by the teams at the District Attorney Office to further streamline the process of bureaucracy. The automation of the process shall allow advocates to further assist more victims at a quicker pace.

1.2 Document Conventions
Typographical conventions shall be avoided to allow for a higher-level understanding of the product. Priorities for detailed requirements are determined by the CSULA team and shall be listed in order in the Software Requirements Document.

1.3 Intended Audience and Reading Suggestions
General readers of this Software Design Document should focus on sections 2, 9 and 10 as they pertain to the end-user’s experience. General readers include marketing staff and users. These sections shall be written in higher level and require less technical knowledge to understand. Whereas, other sections shall be written in a lower level for developers, project managers, users, and documentation writers to understand.

1.4 System Overview
DaApp shall be created from a web application experience. The sequence the CSULA team has in mind is first creating a web application that suits the demographic of users for both the LA County Team and its users. The web application shall be written in basic HTML, CSS and JavaScript. It shall include a content management system that allows the editing of webpages for a high leveler user. The iOS and Android application shall be created using Xamarin. Xamarin will allow for the porting of the web application to an application. The backend software shall be written in C# to allow for easy adoption from the existing team at the LA County Office.
2. Design Considerations

2.1 Assumptions and Dependencies

· Windows Operating System
· Access to an iOS or Android device

2.2 General Constraints

· Windows Operating System is required for the content management system
· Access to an encrypted electronic mail service
· Availability or volatility of resources
· Dedicated server with the correct amount of RAM and storage space

2.3 Goals and Guidelines

· The product should be easily adopted by the LA County team
· The Software has a mandatory delivery date that must be met (Mid-April)
· Emphasis on speed versus memory use
· The product should have a modern design and feel for use usability.

2.4 Development Methods

At first the “Water Fall Development Method” implemented, however, it was altered to a “Scrum” method. The CSULA team transitioned to the “Scrum” development method, because after every build of our application, we demonstrated a demo to our clients and from there make any revisions from the feedback received. DevOps shall also be introduced at a later stage in the development to ensure the quality of every build.
3. Architectural Strategies

- DaApp is created using the C# language with DotNetNuke as a content management system
- Connection to external databases from the LA County Office

4. System Architecture

Level 0 DFD
5. Policies and Tactics

5.1 Choice of which specific products used
Visual Studios, Microsoft SQL Database, DNN CMS Library. We considered an entirely different stack based on JavaScript, but rejected it in favor of a technology stack that the county technical staff are familiar with - i.e., C# and Microsoft software.

5.2 Plan for requirement traceability
Requirements will be matched to code modules. For example, e-forms are a specific directory and requirement.

5.2 Plans for testing the software

We are using an Azure DevOps pipeline. Any time that someone pushes code to the repository, the cloud pipeline automatically builds the project and runs all unit tests to ensure code quality.

5.3 Coding conventions

Conventions will follow the standard Microsoft C# coding conventions.

5.4 Code portability

To ensure the code can be ported to other platforms, we are using Xamarin, which allows a single UI and backend to be exported with tweaking to other supported platforms.

6. Detailed System Design

6.1 Name of Component (Module): Input Module

6.1.1 Responsibilities

Collects information from the user through an input form.

6.1.2 Constraints

Makes sure user inputs correct information into the correct fields.

6.1.3 Composition

N/A

6.1.4 Uses/Interactions

The Input Module interacts with the Map and Static Content module. The Input Module takes input from a user and generates a proper response.
6.2 Name of Component (Module): Map Module

6.2.1 Responsibilities
Collects location information from the user using Google maps API, and displays facilities closest to the location of the user.

6.2.2 Constraints
Allow user to see certain office location based on radius limitations.

6.2.3 Composition
A description of the use and meaning of the subcomponents that are a part of this component.

6.2.4 Uses/Interactions
The Map Module interacts with the Input Module and uses user entered coordinates to determine the location of the user.

6.2.5 Resources
DA office locations and emergency assistance location services, which will rarely change, will be acquired as a list from the database.

6.2.6 Interface/Exports
Google Maps API will be used to display the map. The parameters to be passed in are the list of addresses.
6.3 Name of Component (Module): Static Content Module

6.3.1 Responsibilities
Display to the user pamphlets and non changing content or content that requires minimal changes.

6.3.2 Constraints
It will contain purely static content required to display on the DA site and app, even with video files 100gb is more than enough. Only employee-level user accounts will have access to modify content using the CMS.

6.3.3 Composition
The database will contain all the static content. The DNN CMS will be used to manage the content.

6.3.4 Uses/Interactions
The static content will be used by the entire site and app. Content is gotten from the database to be displayed.

6.3.5 Resources
A Microsoft SQL database will store all the required static content.

6.3.6 Interface/Exports
The DNN interface will manage the contents of the database.
7. Detailed Lower level Component Design

7.x Name of Class or File

TBD

7.x.1 Classification

TBD

7.x.2 Processing Narrative (PSPEC)

TBD

7.x.3 Interface Description

TBD

7.x.4 Processing Detail

TBD

7.x.4.1 Design Class Hierarchy

TBD

7.x.4.2 Restrictions/Limitations

TBD

7.x.4.3 Performance Issues

TBD

7.x.4.4 Design Constraints
8. Database Design

The database uses the DNN design and interface for easy-to-use content management.

9. User Interface

The UI is purely the DNN CMS system. The CMS is where any admin will be able to configure any of the UI components.

9.1 Overview of User Interface

User will be able to see static content such as information about victims rights, frequently asked questions, victim resources, such as pdf pamphlets. User will be able to fill out forms in order to request for service. User will be able to acquire office locations nearby. User will be able to access office information such as office number, location, and the type of services offered.

9.2 Screen Frameworks or Images

These can be mockups or actual screenshots of the various UI screens and popups.

Below are the mockups of the UI layout for mobile and website applications.
### 10. Requirements Validation and Verification

#### Functional Requirements

<table>
<thead>
<tr>
<th>Requirement Number</th>
<th>Detailed Functional Requirement Description</th>
<th>Priority</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>F01</td>
<td>A victim should be able to request assistance from DA Victims Services by completing an in-app form which collects Crime Information, Victim Information (for one or more victims), Family Member Information (for one or more family members), and allows the victim to select the Victim Services office to receive the request.</td>
<td>REQ'D</td>
<td>BVS</td>
</tr>
<tr>
<td>F02</td>
<td>A victims services advocate should be able to receive the request for assistance and make decisions on how best to respond to the victim.</td>
<td>REQ'D</td>
<td>BVS</td>
</tr>
<tr>
<td>F03</td>
<td>A victim should be able to view a map or list of nearby DA Victims Services offices and received detailed information for each (i.e. address, phone number, etc.)</td>
<td>REQ'D</td>
<td>BVS</td>
</tr>
<tr>
<td>F04</td>
<td>A victim should be able to see a list of services available to them with a brief description of each services and information on how to obtain that service.</td>
<td>REQ'D</td>
<td>BVS</td>
</tr>
<tr>
<td>F05</td>
<td>A victim should be able to see a list of resources available to them. This includes organizations and agencies that provide services to crime victims or provide useful information to victims such as legal advocacy programs. This list should also include a directory of useful contacts such as Probation department offices or court locations. These resources should be grouped into logical categories based on service provided and/or related crime. and should contain information such as Organization/Agency Name, address, phone number, website, and a brief description of the services provided. The victim should be able to touch on a phone number to place a call or touch a website or organization name to view the organization website. The victim should be able to enter or keyword or short phrase describing the type of resources needed and see a list of relevant resources.</td>
<td>REQ'D</td>
<td>BVS</td>
</tr>
<tr>
<td></td>
<td>Description</td>
<td>Requested</td>
<td>Responsible</td>
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<tr>
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<td>-----------------------------------------------------------------------------</td>
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<tr>
<td>F06</td>
<td>A victim should be able to see a list of resources related to inmate information/notifications such as CDCR and VINE notification systems and state and county inmate locators. This list should contain a brief description of the service and a direct link to the appropriate external website to obtain these services</td>
<td>REQ'D</td>
<td>BVS</td>
</tr>
<tr>
<td>F07</td>
<td>A victim should be able to see a complete list/description of their rights.</td>
<td>REQ'D</td>
<td>BVS</td>
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<tr>
<td>F08</td>
<td>A victim should be able to read a brief &quot;About Us&quot; which explains who DA BVS is and what they do. There should also contain all of the downloadable brochures.</td>
<td>REQ'D</td>
<td>BVS</td>
</tr>
<tr>
<td>F09</td>
<td>A victim should be able to see a list of frequently asked questions (FAQs) grouped by category/topic. A victim should be able to enter a keyword or short phrase and see a list of relevant questions and answers.</td>
<td>REQ'D</td>
<td>BVS</td>
</tr>
<tr>
<td>F10</td>
<td>A victim should be able to quickly access the County's online 211 Service request form.</td>
<td>REQ'D</td>
<td>BVS</td>
</tr>
<tr>
<td>F11</td>
<td>A victim should be able to obtain all of the information provided in the language of their choice. Initially, all content should be provided in a minimum of English and Spanish.</td>
<td>REQ'D</td>
<td>BVS</td>
</tr>
<tr>
<td>F12</td>
<td>A victim should be able to provide general feedback to BVS about the app or the service provided.</td>
<td>REQ'D</td>
<td>BVS</td>
</tr>
<tr>
<td>F13</td>
<td>A victim should be able to leave the app and launch a website with one touch.</td>
<td>REQ'D</td>
<td>BVS</td>
</tr>
<tr>
<td>F14</td>
<td>A victim should be able to obtain general information about the app and view legal disclaimers about the use of the app, the DA privacy policy, etc.</td>
<td>REQ'D</td>
<td>SYS</td>
</tr>
<tr>
<td>F15</td>
<td>A victim should be able to contact a victims service advocate during business hours either through a live text chat or by initiating a phone call from within the app. Outside of business hours, the victim should be directed to the after-hours phone line or to the in-app request for services form.</td>
<td>REQ'D</td>
<td>BVS</td>
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</table>
A victim should be able to obtain information about the court case by entering either a court case number or a crime report number. The information should include court case number, case name (i.e. People v. John Doe), the handling DA office and phone number, all upcoming proceedings/hearings, and the victim advocate office phone number.

A victim should be able to get a brief description of the proceeding type.

A victim should be able to add upcoming proceedings to their phone calendar.

A victim should be able to subscribe to notifications to be reminded of upcoming proceeds or when new proceedings are added.

A victim should be able to view the testimonials of other victims as a way to answer the question "Why should I contact DA BVS for help?" These testimonials (Victims Voices) would be in the form of text quotes or short video clips.

DA Victims Services management should be able to view usage statistics to measure the efficacy of various aspects of the application.

The main application screen should contain the BVS motto - "Helping Victims Become Survivors".

The app should be easy to navigate organized around large, easy to see and press buttons.

A victim's request for assistance must be securely transmitted to DA BVS staff to reduce the risk associated with obtaining PII (Personally Identifiable Information). For purposes of PII, standard email is NOT secure.
A non-technical person must be able to update any of the application's content through an easy-to-use content management system. Updating content such as FAQs, office locations, resource lists, etc. should NOT require programming effort.

A victim's general feedback about the app or the process should be sent via email to a shared BVS mailbox.

Court information will be obtained by calling a web services api with a case number or crime report number. The web service will query a SQL server database that contains data regularly extracted from PIMS. (The app and associated web service will not contact the PIMS database directly.)

The application should be developed as a native app for iPhone and Android.

The application should be developed using the Microsoft application development stack (i.e. .NET, Xamarin, C#, etc.)

| T02 | A non-technical person must be able to update any of the application's content through an easy-to-use content management system. Updating content such as FAQs, office locations, resource lists, etc. should NOT require programming effort. | REQ'D | SYS |
| T03 | A victim’s general feedback about the app or the process should be sent via email to a shared BVS mailbox. | REQ'D | SYS |
| T04 | Court information will be obtained by calling a web services api with a case number or crime report number. The web service will query a SQL server database that contains data regularly extracted from PIMS. (The app and associated web service will not contact the PIMS database directly.) | REQ'D | SYS |
| T05 | The application should be developed as a native app for iPhone and Android | REQ'D | SYS |
| T06 | The application should be developed using the Microsoft application development stack (i.e. .NET, Xamarin, C#, etc.) | OPT | SYS |

11. Glossary

CMS - Content Management System
DA - District Attorney
DNN - Dot Net Nuke
Web App - Online browser-based application for desktop and laptop devices

12. References

Brad Appleton <brad@bradapp.net>  http://www.bradapp.net
https://www.cs.purdue.edu/homes/cs307/ExampleDocs/DesignTemplate_Fall08.doc