Teen Court Database

Software Design Document | Current Version 1.0.0

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Revision History

Date	*Author*	*Version*	*Comments*
9/26/12	*Andrew Thompson*	*1.0.0*	*Initial version*

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1.0 Overview

The Teen Court Database is a web application used to track the progress of juvenile defendants within the local teen, or youth court program. Court administrators will have the ability to generate reports, view statistics and track volunteer information. Since this is intended to be web application, access will be obtained with any internet capable computer or mobile device.

This document contains the necessary components for the design and implementation of the Teen Court Database application.

1.1 Scope

The scope of this project is to develop a web based system that allows court administrators the ability to track information for juvenile defendants within the teen court programs.

1.2 Purpose

The purpose of this document is to describe what the various components of the system are and how they will be developed. Any possible development issues or constraints will also be described.

1.2.1 Domain Name and Web Space

This application will be developed under a new domain name that has yet to be determined. Web and database server hosting will be provided by the Baltimore based website design firm, eCoastStudios. Michael Roth is the main contact for this project.

1.2.2 Server Environment and Database

The development server and production server will be on Linux servers with the latest version of PHP and MySQL database. A hosting control solution, cPanel, will allow the development team access to web space management.

1.2.3 Web Application

The main application will provide all the requirements gathered from stakeholders and listed in the Software Requirements Document.

1.2.4 Security

In addition to individual user access based upon email addresses, it is recommended to obtain a security certificate/key to provide a Secure Socket Layer (SSL) for data encryption between the client and server.

1.3 Systems Goals

This project's goals are to give court administrators an accessible and easy to use solution to track participants in youth court programs.

1.4 System Overview and Diagram

Users will access this application through qualified web browsers offered on most major internet capable devices, such as personal computers, tablets and smart phones. The application will offer cross-platform and cross-browser support. When a user's browser makes a connection to the website, the

pages and data will be served to the client. The diagram in figure 1 shows the system's major components.

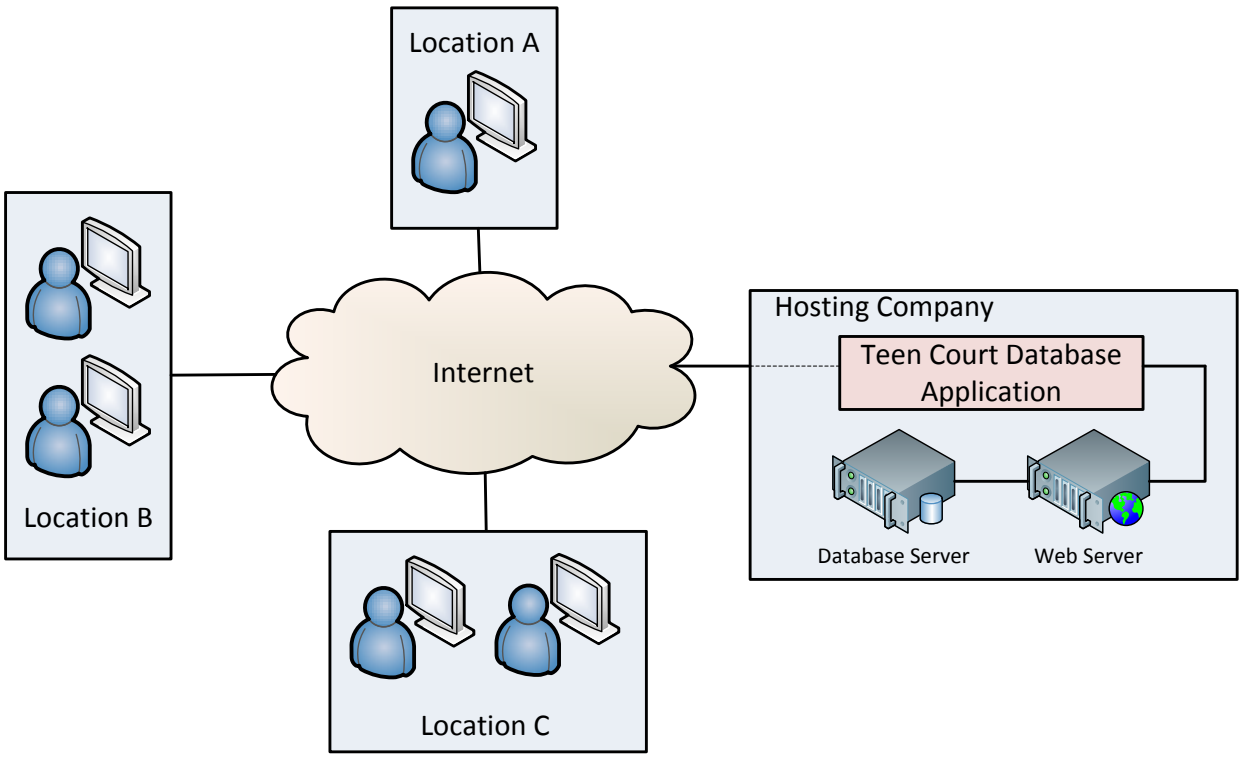

Figure 1 System Diagram

1.5 Technologies Overview

This application will be developed using the latest version of PHP and take an Object-Oriented approach. PHP is popular and widely used HTML-embedded scripting language that allows developers to quickly build dynamically generated web pages. More information: can be found at http://us3.php.net/.

A data access layer will be implemented to help secure information between the web and database server. This will most likely be PHP's built in PHP Data Object (PDO). For more information, visit http://www.php.net/manual/en/book.pdo.php.

For data storage, the latest version of MySQL will be used with this application. This is a popular open-source relational database management system (RDBMS). More information can be found at http://www.mysql.com/.

A JavaScript Framework, JQuery, will be used to ensure cross-browser JavaScript support. To manipulate client webpages without making additional requests to the server, AJAX, or Auto-synchronous JavaScript and XML, will be used and is built into the framework. More information can be found at http://www.jquery.com.

JQueryUI , a JavaScript Framework that generates client-side widgets will be used to provide a more functional user interface. More information about this framework is available at http://www.jqueryui.com.

2.0 Project Overview

This section will describe team member roles and how the project will be managed.

2.1 Team Members and Roles

Andrew Thompson will be the Team Leader and Lead Developer. Robert Reilly will be Lead Tester and Developer.

2.2 Project Management Approach

The Scrum Team is scheduled to have Sprint Meetings every Tuesday and Thursday at 10:00 AM. These meetings will not last longer than 15 minutes. Additional Meetings will be scheduled as needed. The Project Lead, Andrew Thompson, is the primary contact with the Product Owner, Marlene Todd.

The project backlog will be tracked within Trello – an online collaboration and organization tool. Scrum Masters and Scrum Team Members are required access to this site. The Product Owner will not need to access this site. The Scrum Team will manage Sprint Backlog priorities based upon the Product Owners input. Sprints will last between two and three weeks. Sprint Reports will be sent to the Scrum Master and Product Owner at the end of scheduled Sprints.

The online repository, GitHub, will provide source control, source-code browser, and a project wiki. Scrum Team Members and the Scrum Master are required to have access to this site.

2.3 Phase Overview

This system will be developed in phases, they are as follow:

2.3.1 User Stories and Requirements Gathering

During this phase, the requirements for the system will be gathered from user stories. The product owner informs the team of any requirements, limitations or constraints.

2.3.2 Database Schema and Class Design

The database schema, or design, will be developed during the second phase. The team needs to mimic the existing Access Database currently being used by Lawrence County Teen Court, while making sure the design is as efficient as possible. The major class objects will also be designed during this phase; this includes defendants, volunteers, court listings, surveys and any other objects that can be derived from the requirements.

2.3.3 Prototype

2.3.4 Application Development

2.3.5 Testing

2.3.6 Delivery

2.4 Terminology and Acronyms

- AJAX: Asynchronous JavaScript and XML is a set of development tools to provide the client side to communicate with the server without refreshing the page.
- Client: An application or system that accesses a service provided by a server.
- Court Program: A local city, county or community youth or teen court that uses this web application.
- Database: An organized set of data and associated data structures.
- DBMS: A Database Management System allows an interface to manipulate a database.
- Domain Name: An identification string that identifies represents an Internet Protocol (IP) resource. A Domain Name Server (DNS) handles the translation from Domain Name to IP address.
- JQuery: JavaScript Framework that allows client manipulation.
- JQueryUI: JavaScript Framework that allows various client widgets to provide a more functional user interface.
- MySQL: A popular and reliable Database Management System (DBMS).
- NAYC: National Association of Youth Courts provides resources for over 1,050 youth and teen court programs throughout the country.
- PHP: PHP Hypertext Preprocessor is an HTML-embedded scripting language capable of Object Orientated Programming (OOP) principles.
- Server: A computer hardware system and software that serves as a dedicated host for one or more services.
- SSL: Secure Socket Layer is a cryptographic protocol that provides communication security over the Internet.
- Web Application: A software application that is developed in a browser-supported programming language and is accessed by users over an Intranet or Internet.
- Web Hosting: An hosting service on the Internet that allows website owners to access their site and typically provides web space management tools or control panels.

3.0 Requirements

The purpose of this web application is to allow youth and teen courts to track participants within their programs. In order to achieve this, several requirements are specified from the stakeholders.

3.1.1 User Access

Only individuals working for a particular court program may have access to the application. Defendants, their families, and volunteers will **not** be allowed to view **any** information contained in the application.

3.1.2 Data Access

The authorized users shall only have access to information pertaining to their particular court program. Application Administrators will have the additional access to site-wide statistics and options to add new court programs. These levels of access are described in section 4.1 User Access.

4.0 Design and Implementation

The web application will be developed of several different areas or components. Components may interact with others depending upon their type or usage.

4.1 User Account and Access

This section describes the User Account and User Access development process.

4.1.1 Technologies Used

PHP, MySQL, JQuery.

4.1.2 Component Overview

Every user accessing the system will be required to have the following information:

- Name (First and Last)
- Email Address
- Password
- Court Program
- Phone number
- Access Level

4.1.3 Phase Overview

This is an extension of the Phase Overview above, but specific to this component. It is meant to be basically a brief list with space for marking the phase status.

4.1.4 Architecture Diagram

It is important to build and maintain an architecture diagram. However, it may be that a component is best described visually with a data flow diagram.

4.1.5 Data Flow Diagram

It is important to build and maintain a data flow diagram. However, it may be that a component is best described visually with an architecture diagram.

4.1.6 Design Details

The primary concern with user access.. .

4.2 Defendant

This section describes the Defendant development process. The Defendant is the main data object for this application. Several fields will be propagated via dropdown boxes that the court administrator has access to.

4.2.1 Technologies Used

PHP, MySQL, JQuery.

4.2.2 Component Overview

The following information is required for all Defendants:

- Primary Defendant Information
  - Name
    - First Name
    - Middle Initial
    - Last Name
  - Citation Number
  - Citation Date
  - Citation Time
  - Home phone number
  - Date of Birth
  - Court Case number
  - Agency Case number
  - Expunged date
  - Closed date
- Personal Information
  - Address
    - Address Number
    - Direction
    - Street Name
    - Street Type
    - Apartment Number
    - Mailing Address
    - City
    - State
    - Zip Code
  - School Data
    - School Name
    - Grade level
  - Physical Description
    - Height
    - Weight
    - Eye Color
    - Hair Color
    - Race
  - Driver's License Data
    - Number
    - Issue State
- Parental Information
  - Parental Relationship
  - Name
    - First Name
    - Middle Initial
    - Last Name
    - Suffix
  - Phone Number

        - Home Number
        - Work Number
    - Address
        - Address Number
        - Direction
        - Street Name
        - Street Type
        - Apartment Number
        - Mailing Address
        - City
        - State
        - Zip Code
- Citation Information
    - Offense Date
    - Offense Time
    - Day of Week
    - (Race/Age/Sex is auto filled from Personal Data)
    - Location
        - Address Number
        - Direction
        - Street Name
        - Street Type
        - Apartment Number
        - Mailing Address
        - City
        - State
        - Zip Code
        - Common Place
        - Cross Street
    - Citing Officer Data
        - Name
        - Identification Number
    - Mirandized checkbox
    - Offense Data
        - Statue
        - Title
        - Type
    - Vehicle Data
        - License Number
        - License State
        - Make
        - Type
    - Drugs or Alcohol Involved
    - Stolen/Vandalized Data
        - Description of items stolen or vandalized
        - Value or Amount
- Intake Information
    - Intake Date

- Intake Time
- Reschedule Date
- Reschedule Time
- Intake Interviewer
- Referred to Juvenile – Not Qualified (Date)
- Dismissed / No Complaint (Date)

◈ Court Information
- Court Information
  - Court Date
  - Court Time
  - Court Type
  - Court Location
- Judge
- Court Officers
  - Defense Attorney
  - Prosecuting Attorney
  - Bailiff
  - Court Clerk
  - Exit Interviewer
- Advisor (Multiple)
- Jury (Multiple)
- Parent Present (Multiple)

4.2.3 Phase Overview

This is an extension of the Phase Overview above, but specific to this component. It is meant to be basically a brief list with space for marking the phase status.

4.2.4 Architecture Diagram

It is important to build and maintain an architecture diagram. However, it may be that a component is best described visually with a data flow diagram.

4.2.5 Data | Logic Flow Diagram

It is important to build and maintain a data flow diagram. However, it may be that a component is best described visually with an architecture diagram.

4.2.6 Design Details

This is where the details are presented and may contain subsections.

4.3 Volunteer

4.3.1 Technologies Used

This section provides a list of technologies used for this component. The details for the technologies have already been provided in the Overview section.

4.3.2 Component Overview

This section can take the form of a list of features.

4.3.3 Phase Overview

This is an extension of the Phase Overview above, but specific to this component. It is meant to be basically a brief list with space for marking the phase status.

4.3.4 Architecture Diagram

It is important to build and maintain an architecture diagram. However, it may be that a component is best described visually with a data flow diagram.

4.3.5 Data Flow Diagram

It is important to build and maintain a data flow diagram. However, it may be that a component is best described visually with an architecture diagram.

4.3.6 Design Details

This is where the details are presented and may contain subsections.

4.4 Court Roster

4.5 Reports and Statistics

4.6 Surveys

5.0 System and Unit Testing

This section describes the approach taken with regard to system and unit testing.

5.1 Overview

Provides a brief overview of the testing approach, testing frameworks, and general how testing is/will be done to provide a measure of success for the system.

5.2 Dependencies

Describe the basic dependencies which should include unit testing frameworks and reference material.

5.3 Test Setup and Execution

Describe how test cases were developed, setup, and executed. This section can be extremely involved if a complete list of test cases was warranted for the system.

6.0 Development Environment

The basic purpose for this section is to give a developer all of the necessary information to setup their development environment to run, test, and/or develop.

6.1 Development IDE and Tools

Describe which IDE and provide links to installs and/or reference material.

6.2 Source Control

Which source control system is/was used? How was it setup? How does a developer connect to it?

6.3 Dependencies

Describe all dependencies associated with developing the system.

6.4 Build Environment

How are the packages built? Are there build scripts?

6.5 Development Machine Setup

If warranted, provide a list of steps and details associated with setting up a machine for use by a developer.

7.0 Release | Setup | Deployment

This section should contain any specific subsection regarding specifics in releasing, setup, and/or deployment of the system.

7.1 Deployment Information and Dependencies

Are there dependencies that are not embedded into the system install?

7.2 Setup Information

How is a setup/install built?

7.3 System Versioning Information

How is the system versioned?

8.0 End User Documentation

This section should contain the basis for any end user documentation for the system. End user documentation would cover the basic steps for setup and use of the system. It is likely that the majority of this section would be present in its own document to be delivered to the end user. However, it is recommended the origin is contained and maintained in this document.

Appendix I: List of Figures

Appendix II: Supporting Information and Details

This document will contain several appendices used as a way to separate out major component details, logic details, or tables of information. Use of this structure will help keep the document clean, readable, and organized.

Appendix III: Progress | Sprint Reports

This section will contain a complete list of all of the period progress and/or sprint reports which are deliverables for the phases and versions of the system.

III.1 Sprint 1 Progress Report

This would be the first sprint report.

III.2 Sprint 2 Progress Report

This would be the second sprint report.