**Software Engineering**

**Software Requirements Specification**

**(SRS) Document**

**< Prison Connect Management>**

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**<0.0.0>**

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1. Introduction
   1. **Purpose:** The goal of this project is to provide a service/application for civilians and organizations to allow inmates to feel more connected.
   2. **Document conventions:** The typographical methodologies followed within the document.

Our Ver.: The purpose of this Software Requirement Document (SRD) is to describe the different view point requirements for our Prison Connect Management System. The point of views will be the different clients using the system for its intended purpose and the organizations behind the product. It will explain the different requirements needed for the system and will also include an explanation on how it will function. Administration/developer purpose with the product is to monitor.

* 1. **Definitions, Acronyms, and Abbreviations**

Include any specialized terminology dictated by the application area or the product area.

For example:

|  |  |
| --- | --- |
| **Term** | **Definition. Acronym, Abbreviation** |
| .Net | A set of software technologies from Microsoft for connection information, people, and computer systems. |
| Java | The programming language used for the application |
| PostGres DB | Database usage pending |
| Vaadin | Open-source web application development platform for Java |

Continuous/future definitions, Acronyms, and Abbreviations pending…

* 1. **Intended audience:**

**-**Admin (Warden): Monitoring/approving of any clients/organizations wanting to use the application

**-**Visitor: Scheduling an appointment to visit an inmate

**-**Organizations: establishing community service and event planning for both

-The general Description is intended for anyone whether it may be the client, a software developer, or a third party interested in using the product

-The functional, technical, and non-functional requirements would be more for the software developers and the client

* 1. **Project Scope:**

**-**This application is intended to reduce crime by reducing the chance of inmates who relapse back into criminal activity by giving them chances within the justice system to feel more connected to the outside world

* 1. **Technology Challenges:**
  2. **References: (Pending…)**

## General Description

* 1. **Product perspective:**

**-**Since around 46% of inmates are in prison for nonviolent crimes, it is safe to assume that some or most of those inmates have family that are willing to pay them a visit every once in a while, and with our product they will be able to.

* 1. **Product features:**

**-**Be able to use an external API

**-**Be able to write and store data with some sort of saving system

**-**Be able to account for at least 3 different types of users

**-**Be able to manage within login accounts

* 1. **User class and characteristics:**

Our web application will be similar to making a doctor’s appointment online so just about anyone will be able to navigate it. It will also be able to let admins log in to keep track of visit appointment.

* 1. **Operating environment:**

-Web application

- localhost:8080

* 1. **Constraints:**

**-**The law

**-**Merging event confliction

-continuous/future pending…

* 1. **Assumptions and dependencies:**

**-**Visitors/Organizations/Warden knowledge on application usage

## Functional Requirements

Functional requirements

Statements of services the system should provide, how the system should react to particular inputs and how the system should behave in particular situations.

* 1. **Primary**

All of the requirements for the User Interface and subsystems (users) to determine community service and outreach is met for inmate connection. These consist of different user authentication for security purposes intended for proper management.

For Example:

* FR0: The system will allow the user to lookup of vehicle owner information based on license plate number. This information will contain owner’s permit number, assigned lot, and previous violations including tow history.
* FR1: The system will allow the user to enter a new vehicle into the vehicle violation database.
* FR2: The system will allow the user to issue a ticket. The ticket information will be issued in electronic and paper form.
* FR3: The system will automatically fill in data fields using vehicle owner information should a ticket need to be issued.
* FR4: The system will allow the user to update a ticket after the ticket has been issued.
* FR5: The system will allow the user to delete a ticket after the ticket has been issued.
* FR6: The system will keep the user’s ticket information and the server’s vehicle violation database synchronized to within 24 hours.
  1. **Secondary:** Some functions that are used to support the primary requirements.

Martin’s Actor is the visitor

-Schedules an appointment

-Event participation

Marcus’s Actor is the admin/warden

-Time management

-Event approval

Josh’s Actor is the organization

-Plans events for inmate

-Plans community service for inmates

## Technical Requirements

* 1. Operating System & Compatibility
  2. Interface requirements
     1. User Interfaces

The logic behind the interactions between the users and the software. This includes the sample screen layout, buttons and functions that would appear on every screen, messages to be displayed on each screen and the style guides to be used.

* + 1. Hardware Interfaces

All the hardware-software interactions with the list of supported devices on which the software is intended to run on, the network requirements along with the list of communication protocols to be used.

* + 1. Communications Interfaces

Determination of all the communication standards to be utilized by the software as a part of the project

* + 1. Software Interfaces

The interaction of the software to be developed with other software components such as frontend and the backend framework to the used, the database management system and libraries describing the need and the purpose behind each of them.

## Non-Functional Requirements

Constraints on the services or functions offered by the system (e.g., timing constraints, constraints on the development process, standards, etc.). Often apply to the system as a whole rather than individual features or services.

* 1. **Performance requirements**

For Example:

The performance requirements need to be specified for every functional requirement. The rationale behind it also needs to be elaborated upon.

* NFR2(R): The local copy of the vehicle violation database will consume less than 20 MB of memory
* NFR3(R): The system (including the local copy of the vehicle violation database) will consume less than 50MB of memory
* NFR5(R): The novice user will be able to create and print a ticket in less than 5 minutes.
* NFR6(R): The expert user will be able to create and print a ticket in less than 1 minute.
  1. **Safety requirements**

List out any safeguards that need to be incorporated as a measure against any possible harm the use of the software application may cause.

* 1. **Security requirements**

Privacy and data protection regulations that need to be adhered to while designing of the product. For Example:

* NFR7(R): The system will only be usable by authorized users.
  1. **Software quality attributes**
     1. Availability
     2. Correctness
     3. Maintainability
     4. Reusability
     5. Portability

Detailing on the additional qualities that need to be incorporated within the software like maintainability, adaptability, flexibility, usability, reliability, portability etc.

* 1. **Process Requirements**
     1. Development Process Used
     2. Time Constraints
     3. Cost and Delivery Date
  2. **Other requirements**

These may include the legal requirements, resource utilizations, future updates etc.

* NFR4(R): The system will conform to FERPA guidelines to maintain student privacy.

All SRS/SRD should be:

* **Correct:** A method of analysis that ensures that the software meets the requirements identified.
* **Unambiguous:** There is only one interpretation of what the software will be used for and it is communicated in a common language.
* **Complete:** There is a representation for all requirements for functionality, performance, design constraints, attributes, or external interfaces.
* **Consistent:** Must be in agreement with other documentation, including a systems requirements specification and other documents.
* **Ranked for Importance and/or Stability:** Since all requirements are not of equal weight, you should employ a method to appropriately rank requirements.
* **Verifiable:** Use measurable elements and defined terminology to avoid ambiguity.
* **Modifiable:** A well-defined organizational structure of the SRS document that avoids redundancies can allow easy adaptation.
* **Traceable:** Ability to trace back to the origin of development and move forward to the documents produced from the SRS.
* **Legible and Professionally Presented**: Must use a consistent font and style. Must have proper formatting of tables and charts. Must be grammatically correct. Use active tense and concise sentences.

## Use-Case Model

**6.1 Use-Case Model**

Use-Case Model:

Diagram

Description automatically generated

**6.2 Brief Descriptions**

Martin’s Visitor:

* Visitor Login: The visitor will be able to log in and will see an option to make an appointment with an inmate of their choice.
* Visitor Appointment: Once the visitor selects this option, they will be able to see the different days available to see the inmate and possible see different events to participate in with their inmate.

Joshua’s Organizations:

* Organization Login: Organizations will be able to log in or if an organization is not registered within the app can create an account to be included with the Prison Connect Management application.
* Organization Event Creation: Organizations will be able to send through a request for their organization to supply event details/community service for the prison to host.

**6.3 Scenarios**

Martin’s Visitor:

* Visitor Login:
  + **Initial Assumption:** The visitor can see an option to schedule an appointment and when clicked, they will be sent to the appointment day and time selection
  + **Normal:** The visitor can see available appointments and other events
  + **What can go wrong:** login does not register, wrong appointment day/time, wrong inmate
  + **System state on Completion:** If the visitor had no problems, then after they have made their appointment, they will be able to see it afterwards
* Visitor Appointment:
  + **Initial Assumption:** The visitor will be able to see available days/times of an inmate of their choice
  + **Normal:** The visitor navigates the page to see all the available options and selects the one most appropriate to themselves (if available)
  + **What can go wrong:** The visitor is not able to find a date that does not collide with their schedule, not able to navigate the page
  + **System State on Completion:** The visitor will be shown their appointment date and time

Joshua’s Organization

* Organization Login:
  + **Initial Assumption:** If the organization is a registered organization, they can continue to login provided with their login credentials. If not, organization will be prompted to register themselves.
  + **Normal:** The organization will provide login credentials to enter the application.
  + **What can go wrong:** Organization not yet registered, Organization already exists, new organization approval pending.
  + **System state on Completion:** The organization has an approved organization status and can continue to enter the application.
* Organization Event Planning/Community Service Planning:
  + **Initial Assumption:** The Organization will be prompted the type of event that it is wanting to host and send forth for approval.
  + **Normal:** The organization provides adequate details on an open availability day and send forth the event application. Organizations can also see previous approved/denied events.
  + **What can go wrong:** Organization event has conflicting scheduling issues with other organizations, or other events.
  + **System State on Completion:** Organization event and event details are submitted for request of approval.

Marcus’s Admin/Warden:

* Admin/Warden Login:
  + **Initial Assumption:** If the Admin/Warden is registered to the prison, they can continue to login provided with their login credentials. If not, permissions denied. Please seek administrative help.
  + **Normal:** The warden will provide login credentials and 2 factor authentication for employee verification and enters the application.
  + **What can go wrong:** The Admin/Warden have not yet been verified and/or incorrect credentials.
  + **System state on Completion:** Login credentials approved, and employee credentials verified and can enter administrative mode.
* Admin/Warden Time management/Event Approving:
  + **Initial Assumption:** If the Admin/Warden has any pending requests by visitor/organization, can seek details and approve/deny.
  + **Normal:** The Admin/Warden is successfully capable of approving time slots in questions or denying which sends back details to querying party with reasons of denial.
  + **What can go wrong:** Automatic failure can be caused from lack of available time within the requested range of time. Sends a false negative for intentional approval or denial.
  + **System State on Completion:** Event schedule is successfully updated with the new times reflected to given parties.