

## 3 Software Requirements

### 3.1 *Decadal Clock Systems*

The Decadal Clock application is divided into two subsystems, or sections: a mobile application (client) and a clock application (server). Section 3.2 contains, functional requirements, which is divided into the client and server sections. Which explains what the functionality is of the application. Section 3.3 contains external interface which discusses the user, hardware, and software interfaces. Section 3.4 contains performance requirements which consists of the operation of the application. Section 3.5 contains environment requires which is the environment of which the installation will be displayed in. Section 3.6 contains design and implementation constraints which displays what design has to be used within the application. Lastly, section 3.7 contains packaging requirements which specifies the labeling, packaging, and materials of the application being presented.

### 3.2 *Functional Requirements*

The following requirements are used within the client-server model of the Decadal Clock application.

#### 3.2.1 *Mobile Application (Client)*

3.2.1.1 The client shall be on a iPad.

The client will be only on an iOS operating system.

3.2.1.2 The client shall use HTML.

The client will use HTML on a iPhone.

3.2.1.3 The client shall use Javascript.

3.2.1.4 The client shall use Bootstrap 4 wireframe.

3.2.1.5 The client shall use a PHP Connection.

3.2.1.6 The client shall contain a connection to connect to the server.

3.2.1.7 The client shall contain options for users to display decades.

The client will have buttons for the decades: 1970, 1980,1990,2000.

The client will have buttons within each decade to separate years in each.

3.2.1.8 The client shall display a page with options for designs that will be shown on the server. (also known as the main page.)

The client will show a button for each decade: 1970, 1980, 1990, and 2000.

The client will show a button leading to information about the client.

### ***3.2.2 Clock Application (Server)***

- 3.2.2.1 The server shall be on a computer.
- 3.2.2.2 The server shall be displayed on a web page.
- 3.2.2.3 The client shall use HTML.
- 3.2.2.4 The client shall use Javascript.
- 3.2.2.5 The client shall use Bootstrap 4 wireframe.
- 3.2.2.6 The client shall use a PHP Connection.
- 3.2.2.7 The server shall contain a connection to connect to the client.
- 3.2.2.8 The server shall display a digital clock. (main page)  
The server will show a digital clock for each decade.

## ***3.3 External Interface Requirements***

The following requirements consists of what the interface will look like.

### ***3.3.1 User Interface Requirements***

- 3.3.1.1 The User Interface (UI) shall display options for users on the main page.
- 3.3.1.2 The UI shall provide buttons that give users access to all features within the application.
- 3.3.1.3 The UI shall display up to four different decades.
- 3.3.1.4 The UI shall display a digital analog clock.
- 3.3.1.5 The UI shall provide button widgets within the clock to display more information.
- 3.3.1.6 The UI shall change the background depending on function chosen.

### ***3.3.2 Hardware Interface Requirements***

- 3.3.2.1 The Client shall be on a ipad.
- 3.3.2.2 The Server shall be on a mac mini.
- 3.3.2.3 The Server shall be projected on a projector through mac mini connection.

### ***3.3.3 Software Interface Requirements***

- 3.3.3.1 Server Interface Requirements
  - 3.3.3.1.1 The Server shall connect to a php and fetch host connection.
  - 3.3.3.1.2 The Server shall take commands from client on what to display.

### 3.3.3.2 Client Interface Requirements

3.3.3.2.1 The Client shall connect to a php connection.

3.3.3.2.2 The Client shall communicate with the Server.

3.3.3.2.3 The Client shall send directions of what to display on the server.

3.3.3.2.4 The Client shall be controlled by users.

## 3.4 Performance Requirements

The following requirements for performance are not needed as this is an art based application where user experience and time within certain sections depend on the user.

## 3.5 Environment Requirements

The following requirements consists of the software, hardware, and other resources used to create this application.

The following hardware is needed for Decadal Clock:

Category	Requirement
Projector	TBA
Mobile Device	IPad
Portable Device	Mac Mini

The following software is needed for Decadal Clock:

Category	Requirement
Operating System	Mac OS Mojave
Graphics	Adobe XD, Adobe Illustrator
Programming Languages	NodeJS, Javascript, LayerJS, Bootstrap 4, HTML/CSS, jQuery, and PHP.

### ***3.6 Design and implementation constraints***

The following requirements consists of the design of Decadal Clock.

3.6.1 The Server and Client shall be in Bootstrap 4 with Material Design.

3.6.2 The Server and Client shall be only created in a installation purpose.

The Server and Client will only be used during the exhibition time from April 9th, 2019 to April 12, 2019.