

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 phone.
- 3.2.1.2 The client shall use HTML.
- 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 WebSocket.
- 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.
- 3.2.1.9 The client shall display a page with options for designs that will be shown on the server. (also known as the main page.)

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 WebSocket.
- 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)

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 mobile device.

3.3.2.2 The Server shall be on a laptop or portable device.

3.3.2.3 The Server shall be projected on a projector.

3.3.3 Software Interface Requirements

3.3.3.1 Server Interface Requirements

3.3.3.1.1 The Server shall connect to a websocket.

3.3.3.1.2 The Server shall take commands from client on what to display.

3.3.3.1.3 The Server shall always be constantly on.

3.3.3.2 Client Interface Requirements

3.3.3.2.1 The Client shall connect to a websocket.

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	IPhone, IPad
Portable Device	Macbook

The following software is needed for Decadal Clock:

Category	Requirement
Operating System	Mac OS Mojave
Graphics	Adobe XD, Adobe Illustrator
WebSocket	TBA

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.