Requirement Document

SWE Senior Project Proposal — “Interactive Cogswell”

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# Description

Interactive Cogswell is an online, interactive art gallery from works of Cogswell students. It will feature a traversable 3D environment for the gallery and will be a web based application. The gallery will feature both 2D and 3D art pieces.

# Purpose

The purpose of the project is to provides an online, interactive median for user to view artwork and other art pieces (3D models, Music, and Animations) created by Cogswell’s current and past students for individuals not able to come to the campus. Interactive Cogswell will also be a more interesting and engaging way to view Cogswell students’ art as opposed to a traditional image gallery.

# End Users

1. Prospective Students
2. Current Students
3. Faculty Members and Instructors

# Scope

* A big 3D Environment flushed with content.
* Traversable camera movement controlled by the keyboard and mouse.
* Features over 20 Cogswell students art pieces (2D & 3D).
* Online Accessibility from a domain.

# Functionality

1. Users will be able to access the application via a web browser (Webgl, browser environment).
2. Users can traverse the gallery using their mouse to control camera perspective and keyboard to move forward, backwards, left, and right.
3. Users can view art pieces by venturing around the gallery. Getting closer to art pieces prompt up detail and information about the work.
   1. 2D art, such as drawings and sketches, will be displayed on a wall.
   2. 3D art, such as rendered 3D model, will be displayed in its entirety within the 3D environment that is organized according to the type of 3D art.
4. Users can search for a particular art piece via a search filter in a search box. A guide will be display to direct the user to the piece.
5. Cogswell students can add their art pieces via a user interface for future revisions and updates.

# Application/Functionality Use Cases

1. **Load Application**
   1. Gallery View
      1. Application access database and retrieves 3D model and images.
      2. Application calls renderer and renders the environment.
   2. Add Art (look at Student Art Insert UI)
2. **Finer Detail Prompt**
   1. Application retrieves data from the table based on the name of the art piece (string, iterates through the table till a match is found or iteration completes with no match).
   2. A text field will pop up detailing information of the art piece: the name of the piece, the artist (optional depending on privacy), and description (optional depending on privacy).
   3. User can exit by hitting the “Enter” key.
3. **Camera Movement**
   1. Event keys are registered and monitored. Hitting the arrow key will trigger an increment or decrement to their corresponding directions’ x and y camera coordinates.
4. **Search**
   1. A editable text field will appear in which the user can type in a string.
   2. The application iterates through the data table till a match is found or iteration completes with no match.
      1. If found, the location coordinate of the art piece will be returned.
         1. An arrow will now appear based on the location of the art piece in comparison to the camera’s x and y coordinates. (If the art coordinate.x is greater, an up arrow would appear.)
      2. If not found, a text box will appear stating that no match was found.
5. **Student Art Insert UI**
   1. A interface will load up requesting for the user to fill out fields:
      1. Google Drive link to their art piece (mandatory).
      2. Name (optional).
      3. Description (optional).
   2. User can exit by hitting the “Enter” key.

# Use Cases

1. A faculty member wants to see students’ work collectively without having to open up specific programs to view images or 3D model.
   * 1. The faculty member access Cogswell.edu via their browser and clicks on the link that directs to the application.
     2. The application loads up and an opening prompt is displayed showing the controls for the application. **\*LOAD**
     3. They click enter and is placed at the starting point of the gallery.
     4. The faculty member is able to traverse freely (moving with the arrow keys and changing the camera view by the mouse), and is able to view the art pieces from all angles. **\*CAMERA**
     5. The faculty member rushes through the gallery and sees all the 3D models and 2D art.
     6. The faculty member exits out of the application by closing the browser.
2. A prospective student wants to check out Cogswell and would like to see what students make at the college and view the details and descriptions of the art.
   * 1. The user access Cogswell.edu via their browser and clicks on the link that directs to the application.
     2. The application loads up and an opening prompt is displayed showing the controls for the application. **\*LOAD**
     3. They click enter and is placed at the starting point of the gallery.
     4. The user is able to traverse freely (moving with the arrow keys and changing the camera view by the mouse), and is able to view the art pieces from all angles. **\*CAMERA**
     5. The user finds an art piece they like and moves closer to it, viewing it in more detail. A prompt pops, offering more detail about the art piece. **\*PROMPT**
     6. The user clicks the enter key during the prompt and a text box appears, showcasing the information regarding the piece.
     7. The user exits out of the application by closing the browser.
3. A current student needs inspiration and would like to see other specific works made by the student at Cogswell.
   * 1. The student access Cogswell.edu via their browser and clicks on the link that directs to the application.
     2. The application loads up and an opening prompt is displayed showing the controls for the application. **\*LOAD**
     3. They click enter and is placed at the starting point of the gallery.
     4. The student is able to traverse freely (moving with the arrow keys and changing the camera view by the mouse), and is able to view the art pieces from all angles. **\*CAMERA**
     5. The student press “P” key and the screen pauses. A prompt appears and a search option is shown. The student clicks on the search bar and enters in the exact name of the art piece. **\*SEARCH**
     6. If the name is correct, the prompt will exit and the student will now be guided to the searched art piece via an arrow guide until the reach the art piece.
        1. Else, if the name is incorrect, the search result will return nothing and the user is informed that no art piece has that name.
     7. The user exits out of the application by closing the browser.
4. A current student wants to add their art piece into the gallery.
   * 1. The student access Cogswell.edu via their browser and clicks on the link that directs to the application.
     2. The application loads up and an opening prompt is displayed showing the controls for the application. **\*LOAD**
     3. The student chooses the option of adding his or her art piece into the gallery. **\*INSERT UI**
     4. The student finishes and exits out of the application by closing the browser.