Overview

The purpose of this document is to track the active set of requirements that are used for the CSCI 2340: Software Engineering Art Generation semester-long project. Throughout the semester, this document will be maintained to accurately reflect the requirements that are used within the system. The requirements are broken into separate sections: Art Generation Output (AG_ART_REQ), System (AG_SYS_REQ), and User (AG_USR_REQ) Requirements.

 # Think about this granularity of every aspect of design that we have? What design choices have you had to make in your own system? What design choices have you had to make when integrating with other teams? Completing a list of these can lead to a huge list of trackable specifications.

Art Generation Requirements

AG_ART_REQ_1

Description: Video outputs from art generation should be saved to disk.

AG_ART_REQ_2

Description: Each art generation module should exist in its own file

AG_ART_REQ_3

Description: Art generation modules should stop after art is generated

AG_ART_REQ_4

Description: Art generation output should be of fixed length.

Associated Specification(s): AG_ART_SPC_1

AG_ART_REQ_5

Description: Art generation output should be videos of consistent file type.

Associated Specification(s): AG_ART_SPC_2

AG_ART_REQ_6

Description: Art generation output should be of consistent pixel dimension.

Associated Specification(s): AG_ART_SPC_3

AG_ART_REQ_7

Description: Comprehensive unit testing should be created for each art generation module.

Associated Specification(s): AG_ART_SPC_5, AG_ART_SPC_6, AG_ART_SPC_7, AG_ART_SPC_8, AG_ART_SPC_9

System Requirements

AG_SYS_REQ_1

Description: The system should not consume excess storage for data created from execution (video files, logging output, etc)

Associated Specification(s): AG_BE_SPC_8, AG_BE_SPC_9

AG_SYS_REQ_2
Description: Logging should occur on every run of the system to track defects and debug system problems

AG_SYS_REQ_3
Description: Video generation requests should be handled in order.

Associated Specification(s): AG_BE_SPC_3, AG_BE_SPC_21

AG_SYS_REQ_4
Description: The website shall be compatible on all major web browsers including Safari, Firefox, Edge, and Chrome.

AG_SYS_REQ_5
Description: Video file types should be consistent whenever accessed after the video has been generated.

Associated Specification(s): AG_BE_SPC_1, AG_BE_SPC_2, AG_FR_SPC_2

AG_SYS_REQ_6
Description: There should be a limit to the number of video requests that can be tracked for art generation.

Associated Specification(s): AG_BE_SPC_4

AG_SYS_REQ_7
Description: Each request for art generation should be able to be uniquely tracked.

Associated Specification(s): AG_ART_SPC_4, AG_BE_SPC_5, AG_BE_SPC_6, AG_BE_SPC_7

AG_SYS_REQ_8
Description: Comprehensive unit testing should be created for each API call.

Associated Specification(s):

AG_SYS_REQ_9
Description: There shall be a well-defined way to transmit art generation module selections across all sections of code.

Associated Specification(s): AG_FR_SPC_3, AG_BE_SPC_10

AG_SYS_REQ_10
Description: There shall be a well-defined way to transmit parameter data between software components.

Associated Specification(s): AG_FR_SPC_5, AG_BE_SPC_11, AG_FR_SPC_6, AG_BE_SPC_12

AG_SYS_REQ_11
Description: User parameter data shall be mapped to art generation modules.

Associated Specification(s): AG_BE_SPC_13, AG_BE_SPC_14

AG_SYS_REQ_12
Description: There must be a way to clearly determine if sent slider data is either from a color or non-color source.

Associated Specification(s): AG_BE_SPC_15, AG_FR_SPC_6

AG_SYS_REQ_13
Description: The amount of data sent from the Frontend to the Backend shall be the same for every art generation request.

Associated Specification(s): AG_FR_SPC_8, AG_FR_SPC_9, AG_FR_SPC_10, AG_BE_SPC_16, AG_BE_SPC_17

AG_SYS_REQ_14
Description: The art generator module should be properly initialized with required information for art generation.

Associated Specification(s): AG_BE_SPC_18, AG_BE_SPC_19, AG_BE_SPC_22, AG_BE_SPC_23

AG_SYS_REQ_15
Description: Art generation should occur in the backend.

Associated Specification(s): AG_BE_SPC_20

AG_SYS_REQ_16
Description: External API should be used to provide meaningful art generation to the user.

Associated Specification(s):

AG_SYS_REQ_17
Description: External API should be used to supply source images for art generation

Associated Specification(s):

AG_SYS_REQ_18
Description: External API should be used to supply data for user parameter selections

Associated Specification(s):

AG_SYS_REQ_19
Description: External API should be used as the ranges for user parameter selections.

Associated Specification(s):

User Requirements
AG_USR_REQ_1
Description: Users shall be able to generate art

AG_USR_REQ_2
Description: Users shall be able to download generated art output

AG_USR_REQ_3
Description: Users holding an account can view public creations uploaded by other users

AG_USR_REQ_4
Description: Users can upload personal datasets to be used for art generation.

AG_USR _REQ_5
Description: Users holding an account can save art generation to their profile

AG_USR_REQ_6
Description: Users holding an account can utilize public datasets created by other users

AG_USR_REQ_7
Description: Users holding an account can chose whether their saved art is public or private.

AG_USR_REQ_8
Description: Users holding an account can chose whether their uploaded data sets are public or private

AG_USR_REQ_9
Description: Users can create an account

Associated Specification(s): AG_FR_SPC_1

AG_USR_REQ_10
Description: Users shall be able to share their art generation through social media outlets.

AG_USR_REQ_11
Description: Users shall be able to control parameters of art generation

Associated Specification(s): AG_FR_SPC_4

AG_USR_REQ_12
Description: Users shall be able to upload their own images or videos as a source for art generation

AG_USR_REQ_13
Description: Users shall be able to select between different modules of art generation.

Associated Specification(s): AG_FR_SPC_11