

WI21 ITGM 220 CORE PRINCIPLE: PROGRAMMING

ASSIGNMENT 03

3. Interactive Time-Based Pattern (15%)

Learning Outcomes

After completing this Assignment, students will be able to:

- Create sketches that evolve over time.
- Implement mouse interaction.
- Utilize curves to draw patterns.

Key skills:

1. Use of setup and draw functions for dynamic interaction.
2. Use of curve elements to achieve design.
3. Use of custom functions controlled by passing parameters.
4. Reacting to input from mouse and/or keyboard.

Overview

Create a complex, animated pattern. This work reacts to user input and will produce a change of aesthetic value based on the input data.

Requirements

1. Pattern **must** change over time.
2. Pattern **must** respond to user input, either through mouse button, mouse position, or key press. If you feel like using any other type of input (such as game controllers, musical keyboard) discuss with professor before implementing.
3. Pattern **must** include **at least ONE** curve function.
4. This work can be extension of the previous assignment. However when doing so, the visual theme should be significantly different. (For example, main motif, color palette, functions used etc)
5. If you choose to use PImage and external image sources, credit the image sources.

Procedure

1. Define a thematic idea in 1 sentence. For example:
 - A Seagull's journey over the ocean.
 - What's going on in my head during final weeks.
 - The stars are my destination.
2. Collect a set of image references that will influence your design, create a mood board.
3. Hand sketch out curves or shapes that you would like to use in your pattern. Evolve your design by developing multiple versions. Do not erase old sketches as you would need them for documentations. If you are using external images as elements, re-create the final look and feel either through pencil sketches or image editing software.
4. Based on your hand-drawn sketch, create a plan for your project in processing:
 - How will you create the shapes? With lines? Or spades? Or other methods?
 - What colors will you use?
 - What is the mechanic for user inputs?
5. Write the code to create your self-portrait in Processing.
 - Stage Size Range: 500 x 500 px (smallest) - 1200 x 800 px(largest)
 - Double check to see if you have met the requirements as stated in the **Requirements** Section.
 - Maintain good code structure as shown in class (Bracket Placements, Comments, Headings, Variable / Function Names)
6. Create Project Presentation Deck.
 - Consult Sample Project Documentation Structure Guide Below.

Submission and Due Date

1. Create an assignment report by Exporting a PDF of your presentation deck.
2. Properly ZIP your saved project.
 - Double Check one last time and make sure the project runs smoothly..
 - Make sure you have included the complete folder content, along with your assignment report pdf.
 - Remember the project might NOT execute if missing essential pngs / sound / libraries.
3. Name your submission zip file correctly:
 - WI21_ITGM220_FirstNameLastName_A3timebasedpattern.zip
 - for example, John Doe would name the file "WI21_ITGM220_JohnDoe_A2timebasedpattern.zip"
4. Submit this file via the Assessment link in the course menu **before** class starts (8:00 p.m. EST/EDT) on due day

5. Post your 1) self-portrait design drawing + 2) Processing rendered self-portrait for peer review to the appropriate module discussion forum by 11:59 p.m. U.S. EST/EDT on due date.

Grading

- This Assignment is worth 15 percent of your overall grade in this class.
- Your Assignment will be graded according to the criteria specified in the Interactive Time Based Pattern Rubric below.
- Detailed Rubric Explanation can be found on BB> Course Work Section.

Mood Board	Sketches / Initial design	Curve Functions	Draw Function	Documentation	Interaction	User Defined / Custom Functions	Originality and Functionality
10	10	15	10	10	10	20	15

Recommended Project Documentation Structure

HOW	<ul style="list-style-type: none">- Document Size: Portrait. (1920 x 1080) or A4- Presentation Deck: I recommend using presentation tools to create: Keynote, Powerpoint, Google Slides etc.- Export Format: PDF (No Doc / Txt)
WHO	<ul style="list-style-type: none">- Reviewer Analysis: Professor will be your primary reviewer.- Presentation: Project will be presented in class via workstations. Students are expected to use a presentation deck to discuss projects.
WHAT	<ul style="list-style-type: none">• TITLE PAGE (1 page)<ul style="list-style-type: none">○ Student Name, Class Info, Assignment Number○ Give your work an interesting title. "HOW I LOOK WHEN I SEE MY BEST FRIEND" "ANGRY JIMMY"• IDEA / RESEARCH (1 - 3 pages)<ul style="list-style-type: none">○ Write a statement explaining the idea.○ Cite influential sources as your inspirations: Painting, photos, movies, poetry etc.○ Any relevant pages taken from your sketchbooks.• SOLUTION / EVOLUTION (1 - 3 page)

	<ul style="list-style-type: none"> ○ Pencil / Digital Drawing of your intended Results. ○ Post discarded / older ideas as well. ○ Annotate for clarifications. ● WORK IN PROGRESS (1 page) <ul style="list-style-type: none"> ○ Discuss the evolution of the project by showing at least 1 in-progress screenshot. (Just grab the whole screen) ○ You can begin with Pseudocode or a flow chart, but not necessary. ● FINAL OUTCOME (1+ page) <ul style="list-style-type: none"> ○ Final Output of the code when executed in Processing. ○ Include an adequate number of screenshots to highlight the various stages of animation / user input.
WHEN	Assignment Submitted to Blackboard before 8:00 pm EST on due day or be considered LATE.

Expectation of an A Assignment:

Before you declare your project finished and ready to deliver, check against the following criterias. Project which qualify for the grade of A should meet most if not all of the following:

Moodboard	<p>Written description of concept includes all features to be implemented.</p> <p>At least 5 different visual references are used.</p> <p>Sketches are included and clearly illustrate the desired visual output.</p> <p>All references and sketches are clearly and individually annotated.</p>
Sketches/Initial Design	<p>3 or more ideas sketched. Evolution of ideas clearly presented. Information communication is excellent with ample annotations.</p> <p>The final render communicated intended color palette, proportion and shape motifs.</p> <p>The design contains more than enough details to form an aesthetically sound abstract portrait.</p>
Curve Functions	<p>At least 2 different curve functions used</p>

	Curves are essential to the overall aesthetics / Excellent usage of curve functions to support this work as shown in the initial design.
Use of draw() Function	<p>Draw function used and contains only code that needs to be repeated continuously.</p> <p>Functions are used to maintain code readability.</p>
User Defined / Custom Functions	<p>2 or more distinct user defined functions other than PShapes.</p> <p>In 1 or more of these functions, arguments passed to the functions to alter the outcome.</p> <p>Functions called multiple times.</p> <p>The usage of functions essential to generate a complex pattern by allowing code reuse / automation / looping needs.</p> <p>Directly contribute to the above average / good / excellent aesthetic to the final work.</p>
Interaction	<p>Mouse or keyboard input affects outcome consistently.</p> <p>Interactions well designed .Users can observe update of the viewing experience by executing the inputs.</p> <p>The outcome is visually excited and bring forth delights.</p> <p>Ample feedbacks encourage users to continue to interact with the work.</p> <p>Excellent on-screen note / hint to help guide the user the goal / method to interact with this work.</p>
Documentation	<p>Documentations are well organized in a single file.</p> <p>Communicated the development of concept, workflow, code snippets and final output.</p> <p>Documentation describes the concept behind the pattern and clearly shows the development of the pattern using the references and sketches.</p> <p>All necessary images are placed in the document.</p> <p>The Processing code is commented in detail and the comments explain the intent of the code.</p> <p>Materials are organized professionally and are ready to be shared on social media.</p> <p>Ready to be included in the portfolio.</p>

**Originality
Functionality**

The generated sketch changes over time by design. This change is brought about without any interaction needed.

Interaction affects the art/pattern as described in initial design.

Ample of evidence that this work is an original design (evolution explained in documentations).

The concept behind the design is clearly conveyed in the implementation.

This work displayed full attention to details. Ready to be included in the design portfolio.