Lab 5.3 Generated Art pt. 2

Instructor Guide

Overview

Students will complete the Generated Art Activity in this lab. The activity begins by having students manipulate some code to create different things, and ends by having students doing independent research on how to create things like triangles and text in Tkinter!

Learning Goals

- Creating text and polygons in Tkinter
- Review Tuples, and how to manipulate 2D lists
- Review how to store elements in lists in a uniform way so use can use those elements to create graphics

Personal Growth Goals

- Independence: After completing the main challenges, students will have the opportunity to search the web to learn how to create text and polygons in Tkinter. Knowing how and when to look something up instead of power through is an important tool.

Skills Required

- A thorough understanding of list, and list indexing
- A partial understanding of 2D lists
- Understanding of how graphics works in Tkinter
- Understanding of random, loops, and conditionals

Resources Required

- Computers for either every student or every pair of students
- Python 3 and a text editor needs to be installed on all the computers
- One mentor per 2-3 students
- A projector to project the central instructor's computer

Instructor Preparation

1. Make sure all the computers students will use have Python and a text editor (right now, we use Pyzo) installed (check to see that students have a way to save/access files)
2. Load the following programming files onto each computer:
    a. 05_03_03_generated_art.py

In Depth Description of Lab Activities

Phase 1: Setup

1. Before the students arrive, open the following files in a text editor on each computer:
    a. 05_03_03_generated_art.py

Phase 2: Generated Art Activity

1. Students will complete the Generated Art activity on their own. This is a complex activity so students definitely need to have a firm grasp on the material if they want to complete it and move onto the bonus challenge. If students are struggling on a specific part, help them by showing them how to do a specific task with an example different from the actual one they have to do.
2. Near the end of the session, as students create unique aspects to their own projects, they should show off their creations to their mentors and peers.

Phase 3: Pack up | Review

1. Mentors should lead a discussion with their students based on the question: What do you think that you can do with these tools now?
2. This question may be useful to use this as a form of review, and can also be used to increase interest in the subject.

Lesson Plan

(:10) means that this part should be done by the tenth minute of the lesson

1. Setup (:0)

2. Generated Art Activity (:55)
3. Pack up | Review (:End)

Take Away

After completing this lab students should feel comfortable with indexing through lists to find elements that serve a specific purpose, and using them to complete a specific task. Additionally they should be able to create text and different polygons inside of Tkinter.