Lab 7.2 Circle Clash pt. 1

Instructor Guide

Overview

Students are doing their second animation project. Students will be using the skills they learned in the previous animation lab to improve on their skills. In the first activity students will be pushed to remember how to setup a basic animation, where to store variables, and remember what specific functions do.

After completing that activity, students will be asked to modify a more complex version of the game Circle Clash. This activity is carried over into the next lab so students should focus on understanding what they are doing rather than worrying about a time frame to complete the project in.

Learning Goals

- A more complete understanding of how to use a basic game framework
- A more complete understanding of how to use a basic data structure (data.___)
- Ability to manipulate starter code to create a unique game involving animations, data, and key presses

Personal Growth Goals

- Diligence: Students will be pushed to remember the correct way to complete an animation. Although there are multiple ways to complete each step, as is always true, it remains important that students can follow specific rules about the Model View Controller.

Skills Required

- Complete understanding of conditionals, variables, functions, function flow, lists, math operators, tuples
- An understanding of an animation framework, and the functions involved in making an animation

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. 07_02_01_circle_clash_starter.py
    b. 07_02_02_circle_clash_advanced.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. 07_02_01_circle_clash_starter.py
    b. 07_02_02_circle_clash_advanced.py

Phase 2: Circle Clash Starter Activity

1. After the central instructor verbally goes over the basics of an animation, students will complete the circle clash starter activity with help from the syntax guide and their mentors.
    a. Basics of animation include:
        i. Where data is stored, which functions you can change variables in, how to check if a specific key is pressed, where you draw etc.
2. Students who complete all of the challenges before the allotted time can either move on or add more features to their current activity.

Phase 3: Circle Clash Advanced Activity

1. Students will then begin working on the advanced activity, but the entirety of the next lab is devoted to completing and enhancing this file so there is no need to rush through it.

Phase 4: 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. Circle Clash Starter Activity (:20)
3. Circle Clash Advanced Activity (:55)
4. Pack up | Review (:End)

Take Away

After completing this lab, students should be able to create their own basic animation with a few moving parts. They should also be able to recognize where specific data is and how to manipulate specific variables. They should also know what the functions init, keyPressed, timerFired, and redrawAll do.