Lab 7.2 Circle Clash pt. 2

Instructor Guide

Overview

Students will complete their project, Circle Clash and then move into adding additional features of interest to them. This project is the last they will complete in the Teknowledge curriculum so letting them do what interests them is key for future excitement in the field going forward.

The lab should end with a 'reflection' or recap with the students to go over all of the information that they have learned as well as inspire future progress. Hopefully there is a sense of excitement among the students who now feel more confident in their ability to continue learning computer science and programming for the years to come.

Learning Goals

- Ability to use keyPressed, timerFired, init, and redrawAll to create their own unique game with animations
- Complete understanding of data is and how to use it, and when certain functions get called

Personal Growth Goals

- Excitement: Students will be focusing on completing the challenges, and then they have an opportunity to focus on what they find interesting about coding and implement new features into the game. Mentors also have a responsibility to make sure that if students want to continue coding, they can push them in the right directions to help them in their future endeavors.

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. 08_02_circle_clash_advanced.py (files from previous lab)

In Depth Description of Lab Activities

Phase 1: Setup

1. Before the students arrive, open the following files on each computer:
    a. 08_02_circle_clash_advanced.py (files from previous lab)

Phase 2: Circle Clash Advanced Activity

1. Students complete this activity from the last lab.
2. Students can explore and create new content to add onto this activity if they complete the main challenges.
3. As this is the last activity students should really make it their own and focus on what they find interesting about this project.

Phase 3: Recap

1. The mentors should have some time to talk with the students and discuss all of the information that they have learned over the course of these past few weeks. This should also be a time where mentors can give advice on the next steps if students wish to continue learning how to code on their own.

2. Students can also show off their game for others to see.

Phase 4: Pack up | Review

1. Then, with the last five minutes that they have, have the students discuss among themselves what cool things they think they can do with what they have learned.
2. Mentors should lead a discussion with their students based on the question: What do you think that you can do with these tools now?
3. 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 Advanced Activity (:45)
3. Recap (:55)
4. Pack up | Review (:End)

Take Away

After completing this lab students should be able to create their own unique animation using the base frame work. Additionally, students should be inspired to continue learning new programming and computer science in the future.