Lab 7.1 Simple Game pt. 1

Instructor Guide

Overview

Students will learn from the central instructor what each function does within the Simple Game activity. They will also learn why and where data is stored and how to create a basic animation.

Students will then move into editing the code according to the challenges, and then have an opportunity to add whatever they would like! This activity progresses into the next lab as well.

Learning Goals

- Understand how to use a basic game framework
    - The function init initializes data stored
    - keyPressed is called when a key is pressed and records what key is pressed
    - timerFired is called constantly according to your refresh time
    - redrawAll is also called constantly according to your refresh time
- Understand using a basic data structure (data.___)
- Ability to manipulate starter code to create a unique game involving animations, data, and key presses

Personal Growth Goals

- Management: Students will be creating and manipulating their own animations in Tkinter, so students need to understand how to parse through and find what they need understand to apply these skills to different games or ideas.

Skills Required

- Thorough understanding of conditionals, variables, functions, function flow, lists, math operators, tuples

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_01_01_simple_game.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_01_01_simple_game.py

Phase 2: Introduction | Review

1. Have students parse through the Simple Game Activity that should be loaded onto their computers until the General Lecture begins.

Phase 3: General Lecture

1. The central instructor will project his/her laptop so that the class can see and teach the Events Game Animation from the Syntax Guide.
    a. The instructor should go over what each function does, what the current code accomplishes, and how the code accomplishes the tasks.

Phase 4: Simple Game Activity

1. Students will now work on this activity until the end of class, receiving help from the Syntax Guide and mentors when needed.

2. Students shouldn't feel rushed to get through the challenges, but focus on learning the material and understanding what each function does and why.
3. The entirety of the next lab is dedicated to this activity.

Phase 5: 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. Introduction | Review (:10)
3. General Lecture (:25)
4. Simple Game Activity (:55)
5. Pack up | Review (:End)

Take Away

After completing this lab students should be able to manipulate starter code to complete certain tasks in an animation framework. Students should also start to gain an awareness about how many simple games are made, and start making connections to how to make them based off of information that they already know.