Name_____ CSC 210
Due: 16 November 2025 Fall 2025

Lab 07: Designing a Graphical User Interface

- **Objective**: Expand our Creature class into a simulation.
- **Key Concepts**:
  - Working With Collections
  - Code Reuse
  - Event Loops
  - User Interfaces
  - Actions and Events
  - Timers
  - Using Eclipse
  - UI Decisions
  - Package Organization
  - Tracing and Debugging

Creating Your Project

- Enter your local copy of your git repository on your lab or workstation and create a lab-07 directory.
- Install Intellij, Eclipse, or a project management plugin in Visual Studio Code
- Create a new Project Named EcosystemGUI inside your lab-06 directory
- Load the new project and make sure it can run a HelloWorld

Project Specifications

- In this lab you will design and build a graphical user interface for the ecosystem you built in the previous lab. You should import your previous work into this new program as a library in its own package so that it can be called by this new program.
- Look at the GameOfLife program provided along side this lab in the zip file. Use this code as a starting template for designing your ecosystem GUI. Compile the GameOfLife.java file and execute it to see how it works. Look up the rules for the game of life to get an understanding of what is happening.
- Extract the user interface from the GameOfLife without the logic for how the buttons behave. Add an additional sidebar component to your EcosystemGUI code. On this sidebar will be displayed all of the information about a Cell in your ecosystem.
- When click one of the buttons on the grid, any cell attribute and any creatures and their attributes should be displayed in the sidebar.
- Add an additional component that prints out the stdout log of what is happening in your program whenever a turn occurs.
- The original Step and Play buttons should be converted to call your World object's takeTurn() method in much the same way it worked for the GameOfLife but now applying the rules of your ecosystem simulation.
- The initial state of the ecosystem should be read from a file. Add a button to your program that resets the ecosystem to its initial state.
- Add a button to the program that allows you to load the initial state of the ecosystem to a file
- CHALLENGE: Add a button that allows you to save the current state of the ecosystem to a file