

CO2220 Laboratory 2
Graphical Object-Oriented and Internet Programming in Java

Corresponds to Vol. 1 Chapter 2 (Objects) of Study Guide

Learning Objectives:

To understand and apply the following concepts:

- Class Hierarchy
- Inheritance

Note: The intent of this lab is to familiarize students with the **simpleobjects** package provided in the Study Guide (Vol. 1). `goo`. `Goo` is not in the standard Java library, it should be in your (development) library.

Tasks

1. Put the entire `src` folder that comes with the course guide into your project folder. Explore the programs in the `simpleobjects` folder.
 - a. Where is the position of the drop in `GooDrop`?
 - b. What if you want the drop position to appear at the bottom left of the screen instead?
 - c. Modify the `xpos` and `ypos` values of `GooDrop` and comment on it.
2. Modify the programs to do the following:
 - a. Change the color of the `RedDrop` object to blue.
 - b. Increase the dropping speed of the `Drop` object. `GooDrop` : set `yvel=30`.
 - c. Use a `WobblyDrop` object that demonstrates its wobbling behavior. Increase the wobbliness value and comment on what you see. `WobblyDrop`: move method: change from 4 to 24.
3. The `WobblyDrop` program shows a drop wobbling down from top to bottom of the screen. Write a new class (named `WobblyUp`) such that the drop will now move up from bottom to the top of the screen.
4. Write a program (named `VerticalBounceDrop`) that shows a vertical bouncing drop that bounces off the top and the bottom of the window. Optional: alternate the size of the drop (between big and small) as it bounces.
5. Write a program (named `HalfVerticalBounceDrop`) that sees a drop bouncing to half its previous height every time it bounces.

Lab Review

Review and discuss the following:

- Where do we specify the start position of a drop?
- How can we change the color of the drop?
- How can we change the size of the drop?
- How can we change the speed of a drop?
- How can we change the type of the drop in the main program?
- How did we make a drop wobble?
- How can we change the direction of the drop?
- Which superclass would you choose for **VerticalBounceDrop** class and why?