

CO2220 Laboratory 3
Graphical Object-Oriented and Internet Programming in Java

Corresponds to Vol. 1 Chapter 4 (Reference Types) of Study Guide

Learning Objectives:

To understand and apply the following concepts:

- Object arrays
- Remote controlling an object

Tasks

1. Go to Chapter 4 of study guide material, run GooDrops.java. Observe what happens to the drops and explain.
2. Modify the program such that when a drop gets to the bottom, it should produce a beep sound. The statement below uses a class from the Java AWT package:

```
Toolkit.getDefaultToolkit().beep();
```

3. Add a green drop to your program such that a green drop can move and bounces off the four sides of a display window. As it bounces of a side, let it produce a sound.
4. Adjust the size of the number of drops created in **GooDrops** to 40 and fix their size at 16 to see what happens. Modify the program such that when the green drop moves and bounces off the window, or it touches any of the drops in the **GooDrops** program, the program is supposed to make a beep sound.

Lab Review

After the practical exercises, please review and examine the following:

- How do we create multiple drops?
- How can we make the green drop bounce off the sides of the window?
- How is a new object, green drop, added to the display?
- How can we determine if a green drop passes or touches a drop?
- How is sound added to the program? Can we minimize altering the original given program?