

# Activity 4.1 - Bouncy Ball

## Overview

In this activity, you will create an animation that paints a colored ball, bouncing around within the confines of the window.

## Instructions

### Getting Started

1. Create an "Activity4.1" folder in VScode.
2. Import [BouncyBall.java](#) into your project.
3. Complete it according to the specifications below.

### Specifications

#### *Part 1: Keep the ball in!*

Keep the ball in bounds by adding conditional statements after the `TODO` comments in the `paintComponent()` method to check when the ball has hit the edge of the window.

1. When the ball reaches an edge, you will need to reverse the corresponding delta direction **and** position the ball back in bounds.
2. Make sure that your solution still works when you resize the window. Your bounds checking should not depend on a specific window size. You will need to "pick up the ball" and place it back on the edge of the screen.



Watch this [BouncyBall YouTube Video](#) for a demo of the expected behavior. See [this handout](#) for a drawing that will help you with the coding.

#### *Part 2: Make it more fun (optional)*

Once your basic program is working, enhance it by adding some of the following features.



BOISE STATE UNIVERSITY

1. Randomly determine the starting color of the ball. Look for the `TODO` comments in the `BouncyBall()` constructor method.
2. Randomly determine the starting coordinates for the ball. Look for the `TODO` comments in the `BouncyBall()` constructor method.
3. Can you make the ball size change while it moves?

## Terminology Identification

In your code add comments identifying examples of the following: conditional statements, relational operators, equality (or inequality), nested statements. These should be identified with an `@keyterm` tag within the comment.

## Code Review

When you are finished with this activity, pair up with a classmate and review each other's code to make sure it meets all the requirements.

## Submission

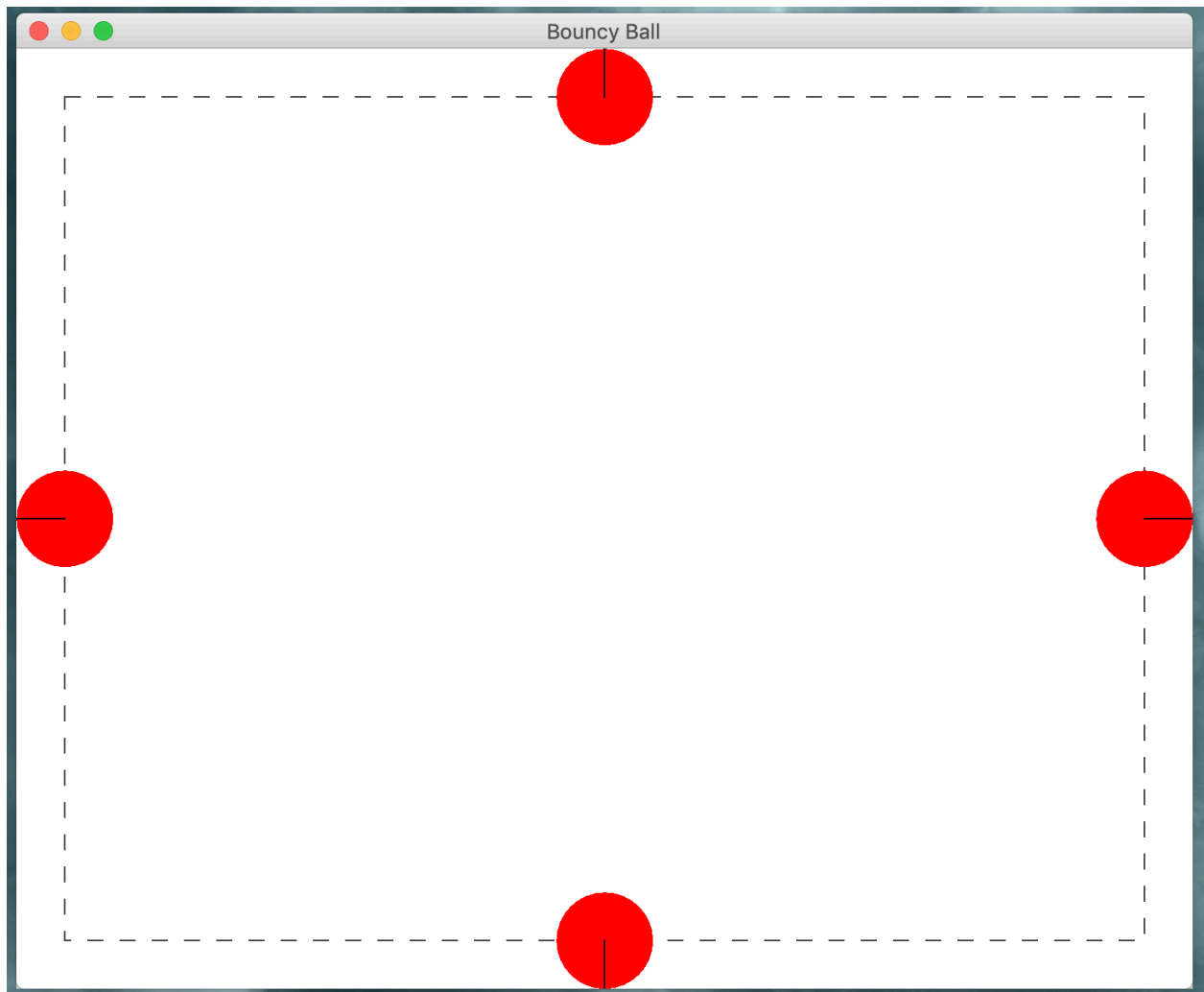
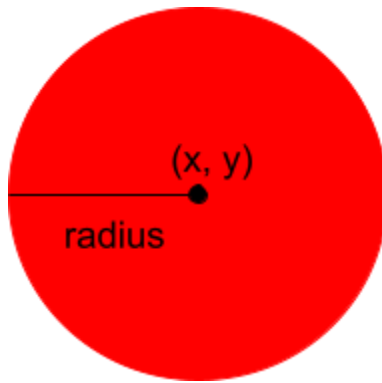
After completing the assignment, use the assignment link in Canvas and follow the submission instructions there. You will upload your `BouncyBall.java` file and submit your reflection in the "Comments" box.

## Reflection Requirements

Write a one paragraph reflection describing your experience with this activity. The reflection should also include the name of your code review partner AND something interesting you found in their code. Please review the activity rubric for more details.

.





BOISE STATE UNIVERSITY