**A3 - Bouncing**

Esraa Abdelmoein

2025-09-20

Mobile Application Development– Android

Russel Shanahan

**1.Change the box color... i.e. the background colour. What did you do?**

A screenshot of a computer

AI-generated content may be incorrect.

* I Changed This: box = new Box(Color.BLACK);

To: box = new Box(Color.YELLOW);

**2. Change the color of newly made balls to a new random color for each new ball. What did you do?**

A screenshot of a computer program

AI-generated content may be incorrect.

* I Changed this balls.add(new Ball(Color.GREEN));

balls.add(new Ball(Color.CYAN));

To:

balls.add(new Ball(Color.RED, 120, 180, 5, 3));

balls.add(new Ball(Color.BLUE, 320, 420, -4, 6));

**3.Make the newly made balls go super-fast and super-slow (with a code change). What did you do?**

**Here’s Super fast version:**

A screenshot of a computer program

AI-generated content may be incorrect.

* I Changed this balls.add(new Ball(randomColor, previousX, previousY, deltaX, deltaY));

To:

balls.add(new Ball(randomColor, previousX, previousY, deltaX \* 5, deltaY \* 5));

**About super slow version:**

A screenshot of a computer program

AI-generated content may be incorrect.

divide the speeds: balls.add(new Ball(randomColor, previousX, previousY, deltaX / 5, deltaY / 5));

4.Try different approaches for invalidate() (different code locations, methods, ...):

. Does the program still work each time?

. What does invalidate() do? What happens when it isn't called at all?

. What are the times that onDraw() is called?

Continuous animation — invalidate() in onDraw() *(“Before”)*

*A screenshot of a computer

AI-generated content may be incorrect.*

Moves only while swiping — invalidate() only in onTouchEvent()

A screenshot of a computer

AI-generated content may be incorrect.

Normally, invalidate() tells Android to redraw the view repeatedly, so without this the screen

draws only once and the balls freeze in place

And I swiped the ball and did like this:

A screenshot of a computer

AI-generated content may be incorrect.

A screenshot of a computer

AI-generated content may be incorrect.

Calling invalidate() in RussButtonPressed() makes the screen refresh only when the button is

clicked, so a red ball appears but doesn’t animate continuously.

**5.Add a square shape class...fast swipes makes the square shape, slow swipes make circles.A screenshot of a computer program

AI-generated content may be incorrect.**

The program measures swipe speed: if the swipe is slow, it creates a ball, and if the swipe is fast, it creates a square

**6.Add a rectangle shape...any time a shape collides with that rectangle you increment a score count (show score on logcat).**

A screenshot of a computer program

AI-generated content may be incorrect.

Logcat:

A screenshot of a computer program

AI-generated content may be incorrect.

**7. think of another change (...and do that change) yourself, ...What did you do? Show this in your MP4.**

A screenshot of a computer program

AI-generated content may be incorrect.

Made one ball bigger by changing the radius in Ball.java and updated the background color in BouncingBallView.java

**Here is the URL of my Github:**  https://github.com/EsraaAbdelmoein/Mo3--Bounce-Assignment-.git