

Lab – Java – JavaFX Animations

Overview

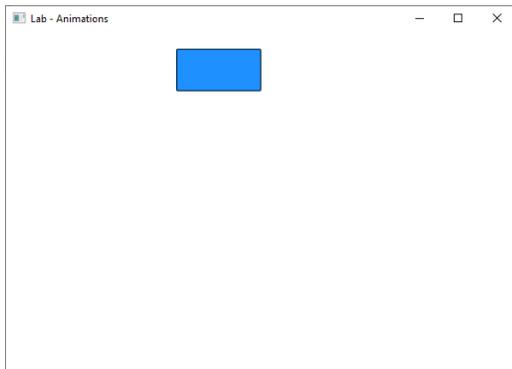
Write a JavaFX application that uses animations.

Create an FXML GUI Application

Create a new JavaFX application.

Create the Window

Create the following window that contains a rectangle (uses a BorderPane as the root container with a Pane in the center region):



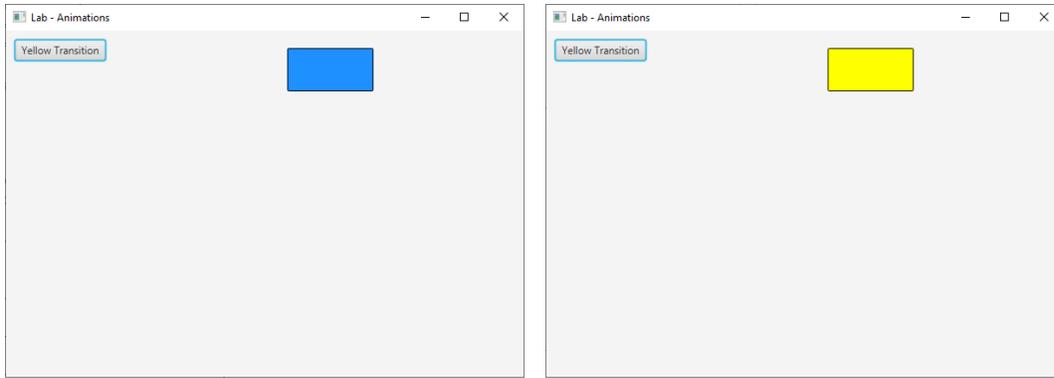
Here are the details of the layout:

- BorderPane as the root container
- Add a Pane container to the center region of the BorderPane
- Add a Rectangle (width(100), height(50), layoutX(200), layoutY(20)) to the Pane

Change Color Using a Transition Animation

Add code to change the rectangle's fill color to yellow over the course of 3 seconds. It should only change to yellow once. Add a button that will cause the transition to run. You should add a VBox to the BorderPane's left region and add the button to the VBox.

Here are screenshots before and after:



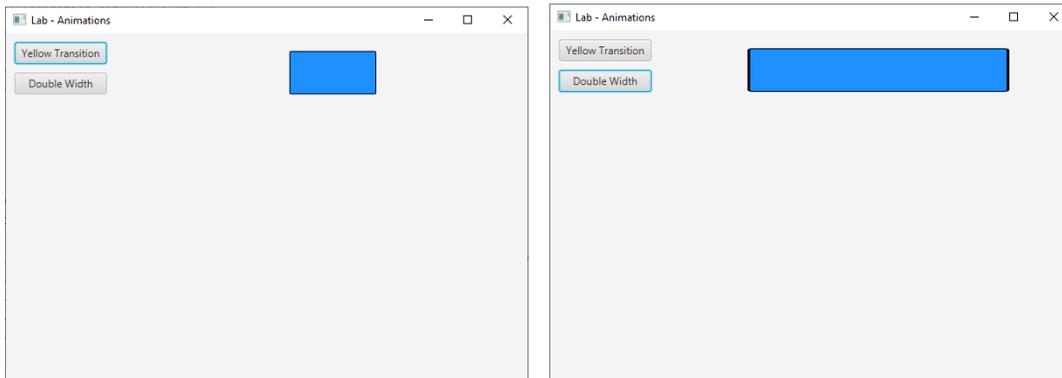
Update - Change Color Back to Original Using a Transition

Have it automatically transition back to its original blue color after transitioning to yellow. So it should go to yellow and then immediately turn back to blue.

Scale Using a Transition

Add code to double the width over the course of 1 second (hint: you will need to use a `ScaleTransition` and use its `setByX` method). Add a button that will cause the scaling to run.

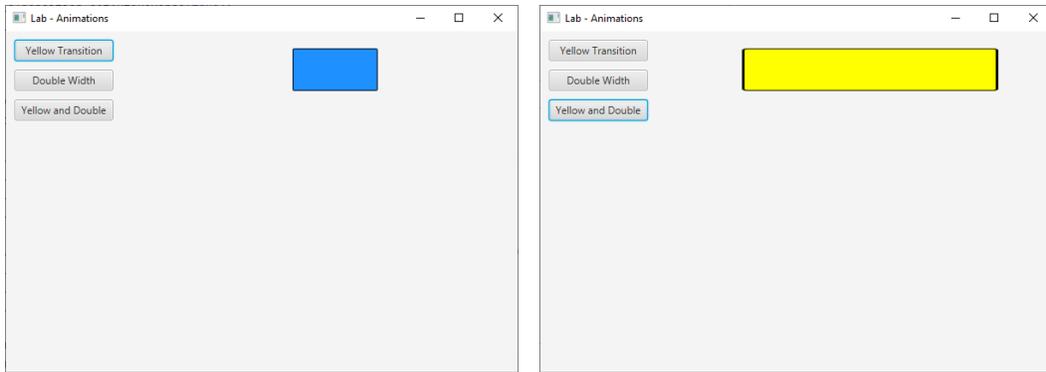
Here are screenshots before and after:



Run Both Transitions at the Same Time

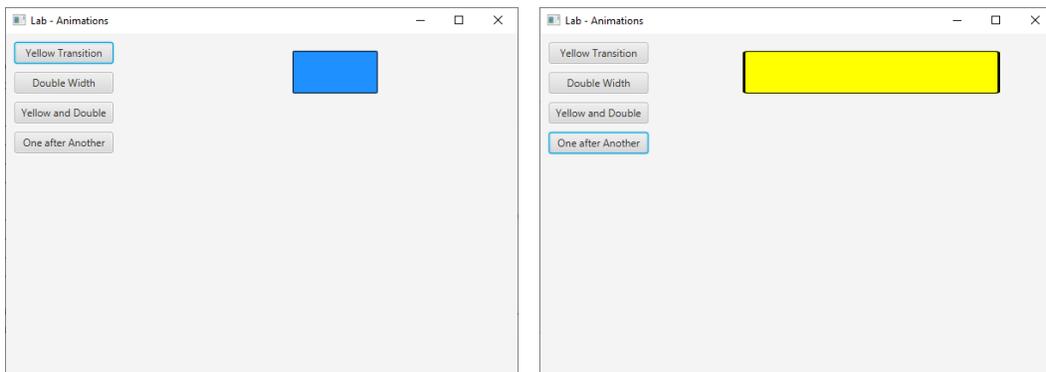
Add code that will cause both transitions to happen simultaneously over the course of 3 seconds. It should change color and grow in size at the exact same time. Add a button that will run this transition .

Here are screenshots before and after:



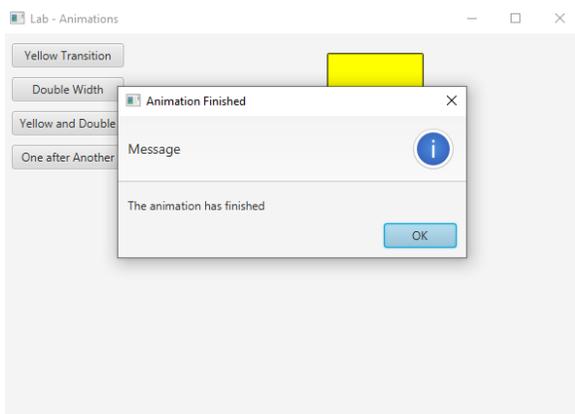
Run Transitions One After Another

Add a button with code that will cause the transitions to run one after another (not at the same time).



Show an Alert Dialog after the Color Animation Finishes

Display an alert dialog after the color animation finishes. The alert dialog should have a message stating that the animation has finished. You only need to do this for the animation that is started with the Yellow Transition button.



Animate when User Clicks the Rectangle

Run the color animation when the user clicks inside the rectangle.

Hint: You can add a mouse click handler to the rectangle.

Animate when User Clicks the Rectangle from Pane Handler

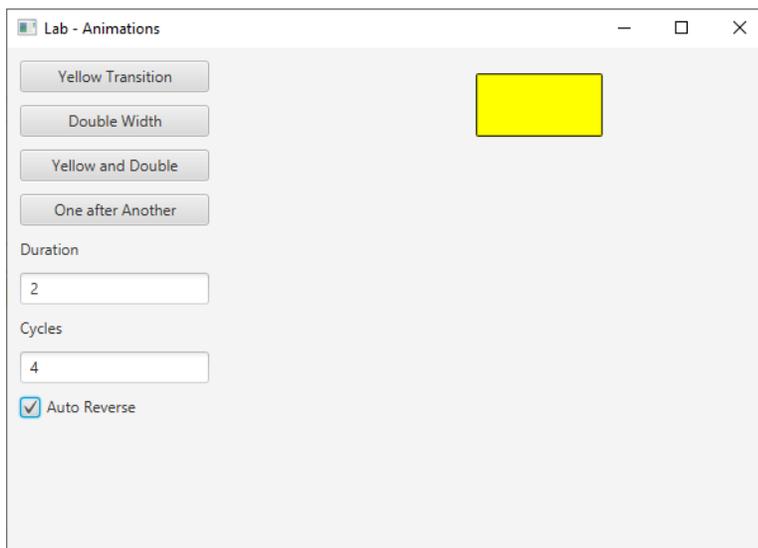
Move the mouse click handler to the pane instead of the rectangle. It should only run the animation if the mouse click happened on the rectangle. You will need to check the xy coordinates in the mouse event to make sure they are within the bounds of the rectangle.

Hint: You will need to use layout x, layout y, width, and height from the rectangle class as part of your solution.

Let User Customize the Animations

Let the user set the duration, cycles, and auto reverse values on the animations. All animations should use the user selected values.

- Add a TextField for duration.
- Add a TextField for cycles.
- Add a CheckBox for auto reverse.



Other Animations to Try

- Try doing rotation and fade transitions.