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# Basic Animation with the Canvas

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# Quick recap

- Recall that Canvas is just a drawing area.
- By using the graphics context of the Canvas, we can perform various drawing operations on it.
- Every Canvas has a coordinate system with its origin in the top left corner, x-axis extending to the right, and y-axis extending downward.
- These coordinates are used to position the figures we draw.

# Basic animation

- While Java isn't really suited for it, it's possible to do some basic animation by drawing stuff on the Canvas.

- The basic trick is to simulate the illusion of motion with the following loop:
  - Draw all objects in their current positions
  - Erase them all (by drawing over them in the background color)
  - Compute their new positions after a single time step
  - Repeat

- The erase/redraw happens fast enough that it looks like movement.

# Some minor tips

- If we use that procedure only, things will happen so fast we won't be able to see them.
  - A rolling ball will just vanish from one end of the screen and appear at the other.
- To slow things down to a manageable pace, we introduce a delay.
- Use the Thread.sleep() method to temporarily pause execution.
  - Takes an int value as an argument, representing the number of milliseconds to pause for.