

Using Timers

Discussion

Timers let you run code over and over. They are especially useful for creating animations. With a timer, you can call a function repeatedly to do things like bounce a ball around a screen or draw a moving helicopter.

Parts of a Timer

Setting up a timer requires two things:

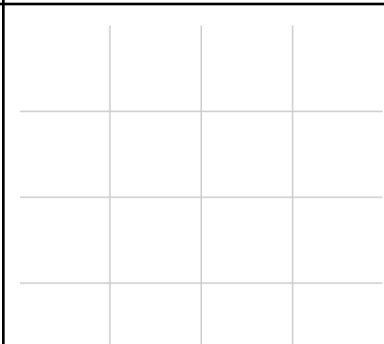
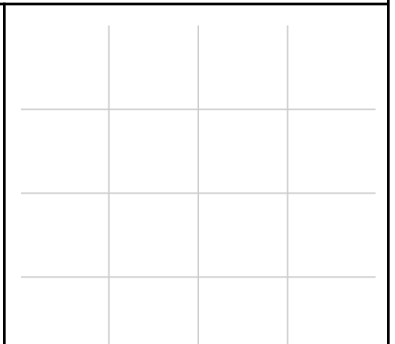
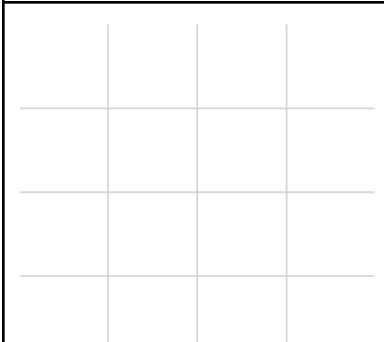
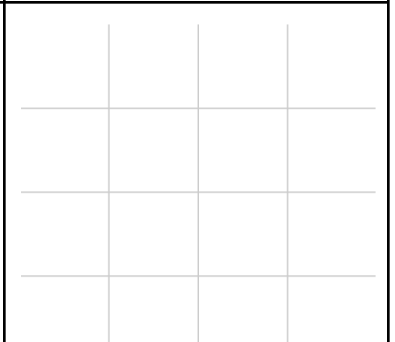
1. The function you want the timer to call
2. How often to call that function (in milliseconds).

Here's a timer that calls a draw function every 50 milliseconds: `setTimer(draw, 50);`

Class Exercise

The following programs use timers to repeat a certain action over and over. Draw in the resulting screen image at each interval given. (Note: All grid lines represent 100 pixels. Remember that the (0, 0) coordinate is located in the top left!)

1.

Program	Resulting Screen Images	
<pre>function main(){ setTimer(drawCircle, 1000); } function drawCircle(){ let circle = new Circle(100); circle.setPosition(200,200); add(circle); } main();</pre>	 <p data-bbox="747 1344 1128 1415">Screen at 0ms</p>	 <p data-bbox="1128 1344 1520 1415">Screen at 1000ms</p>
	 <p data-bbox="747 1755 1128 1816">Screen at 2000ms</p>	 <p data-bbox="1128 1755 1520 1816">Screen at 3000ms</p>

2.

Program	Resulting Screen Images
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<pre> let circle; function main() { circle = initCircle(100, 100, 100); setTimer(moveCircle, 500); } function initCircle(radius, x, y) { let circ = new Circle(radius); circ.setPosition(x, y); add(circ); return circ; } function moveCircle(){ circle.move(50,50); } main(); </pre>		
	Screen at 0ms	Screen at 1000ms
	Screen at 2000ms	Screen at 3000ms

3.

Program	Resulting Screen Images	
<pre> let circle; function main() { circle = initCircle(100, 200, 200); setTimer(setPosition, 1000); setTimer(setPosition2, 2000); } function initCircle(radius, x, y) { let circ = new Circle(radius); circ.setPosition(x, y); add(circ); return circ; } function setPosition() { circle.setPosition(100,100); } function setPosition2() { circle.setPosition(300,300); } main(); </pre>		
	Screen at 0ms	Screen at 1000ms
	Screen at 2000ms	Screen at 3000ms



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