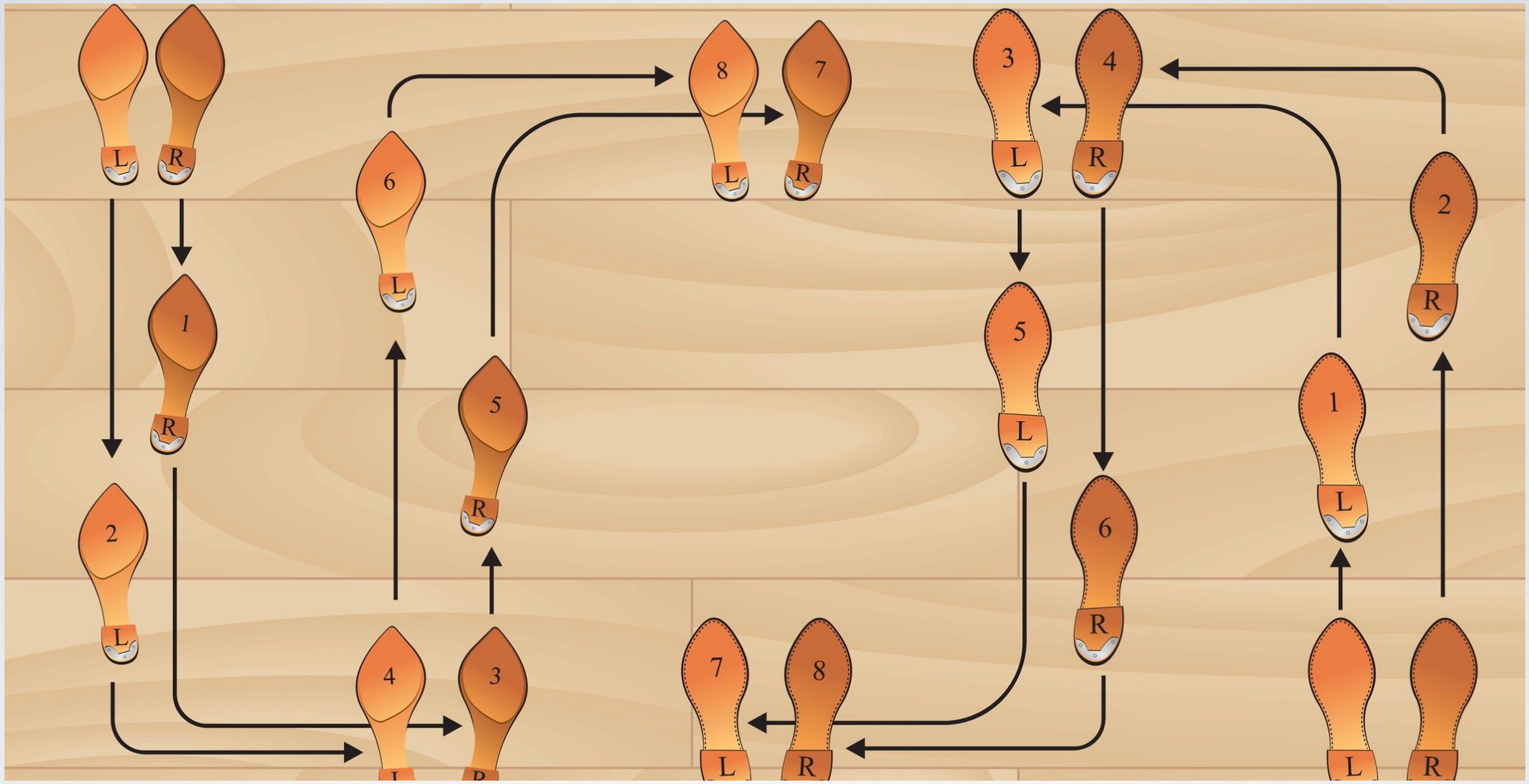
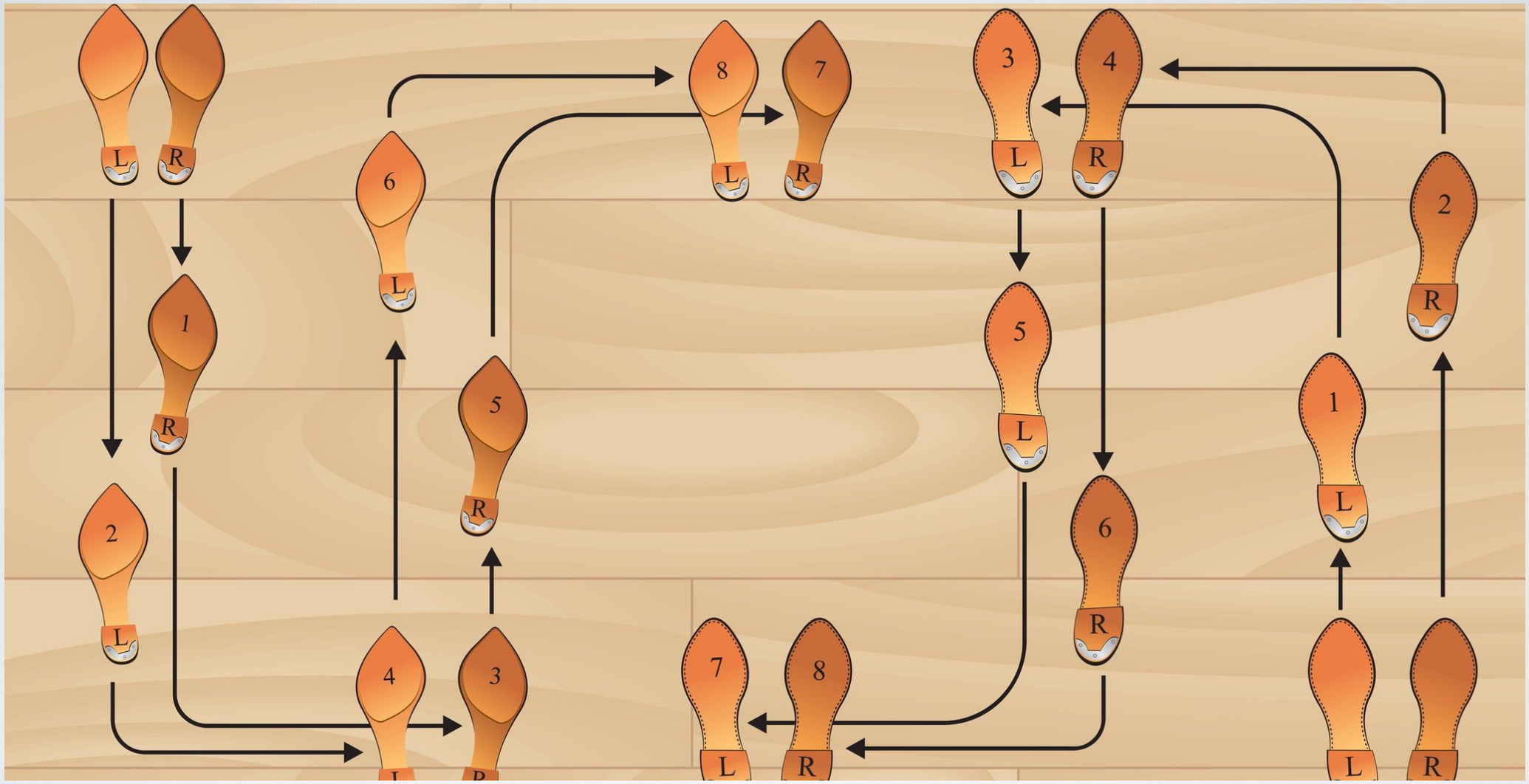
THINK EFFICIENTLY:
FUNCTIONS AND A BIT OF LOOPS

Lesson 3



LET’S DANCE



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LET’S GET STARTED

- What is your favorite dance?
- Who can perform this dance?

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IMPORTANT VOCABULARY

Function: A collection of commands grouped together and given a name. The set of commands can then be run with just the name of the function whenever the set is needed.

Composition: The process of combining small parts of a program to solve a larger problem.

Call: Telling a program to run a function.

For Loop: Runs a block of code over and over for a set number of times.

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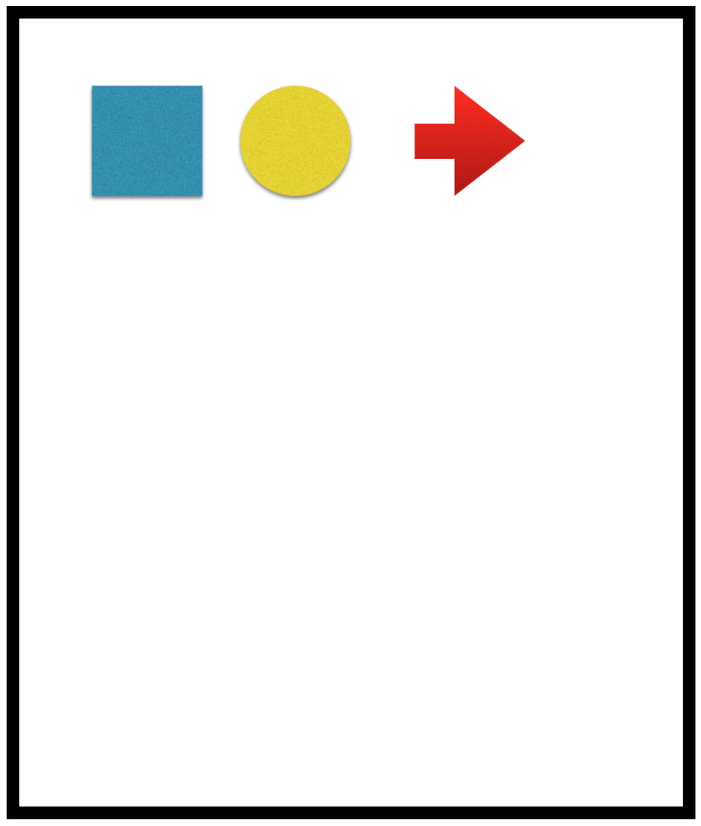
PATTERN MAKER

1. Find a partner. Open Swift Playgrounds.
2. Create a repeating pattern with different shapes, colors, etc.
3. You have 3 minutes—GO!



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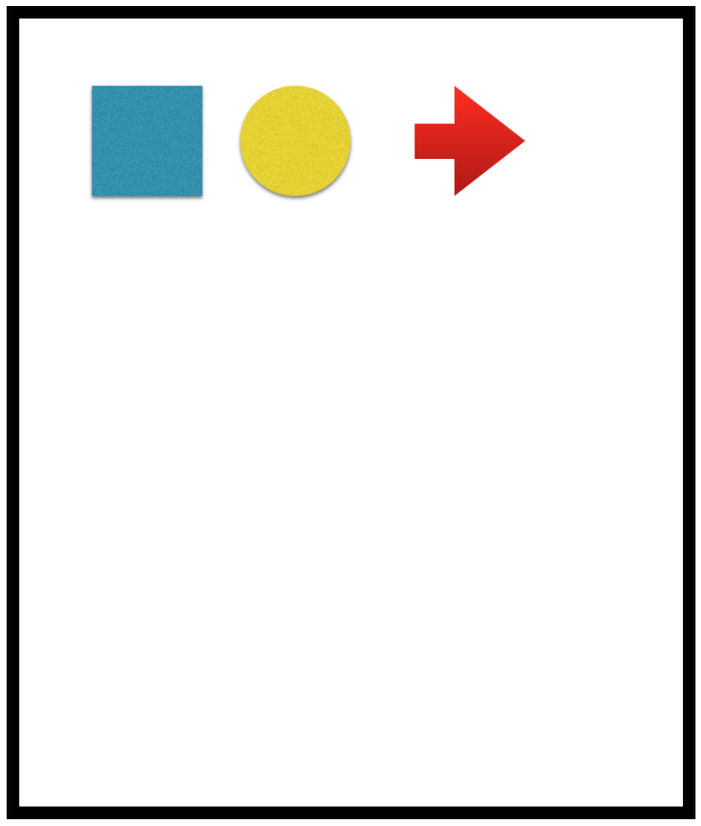
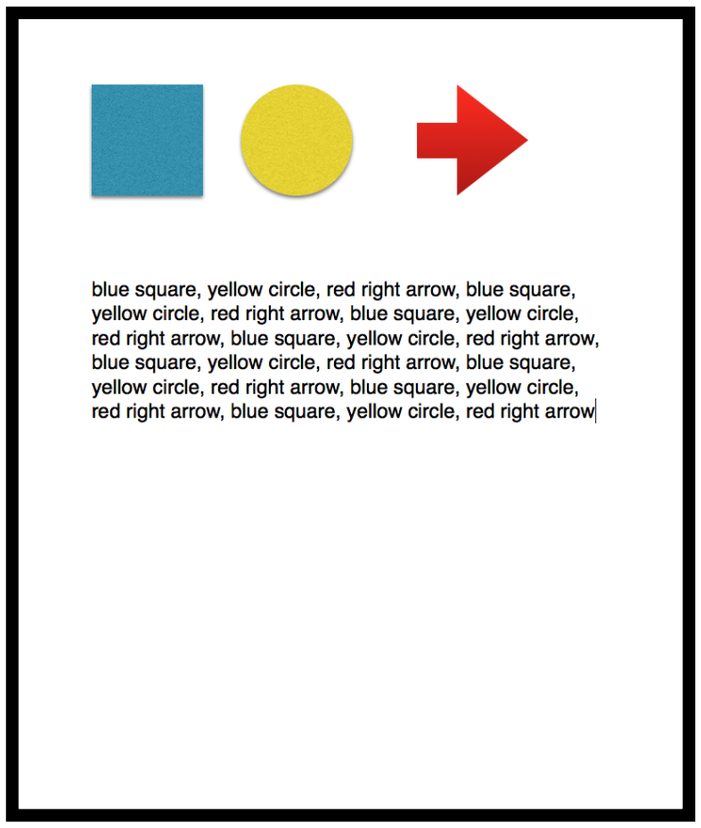


PATTERN MAKER

4. Use words to write the pattern you created
   (for example, blue square, yellow circle, red arrow).

5. Write it 20 times.

6. GO!



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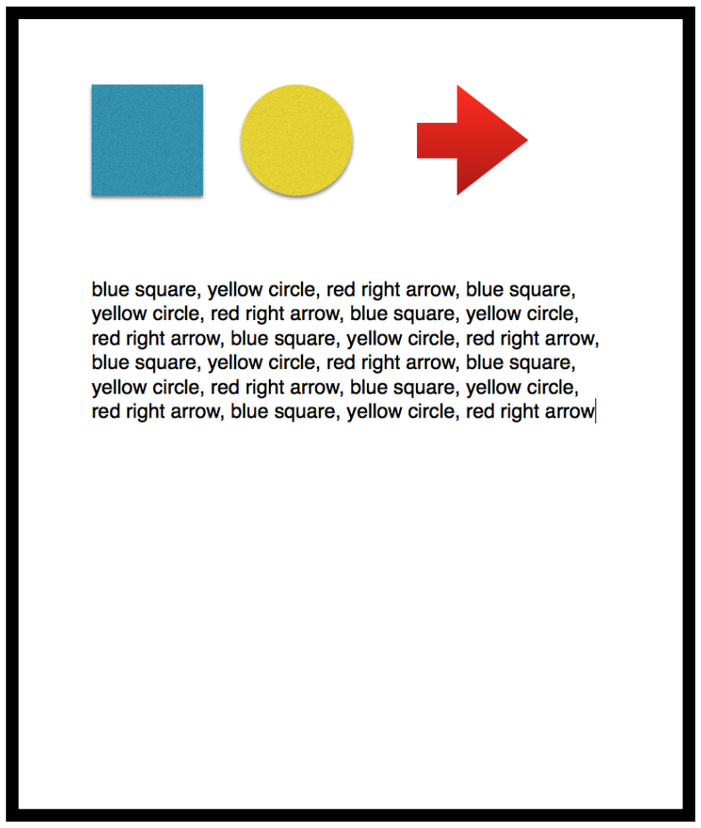

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7. Is there an easier way to do this? Let's name the part that repeats.

8. Write the pattern again using the new name.

9. How many fewer steps did it take to write the pattern using the new name? How many times did you repeat it?

10. Now let's make this even easier. Describe your pattern in one step.

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Now you’ve written a function in a for loop.

What does a function mean when it comes to coding?

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TIME FOR SWIFT PLAYGROUNDS

Chapter: Functions and For Loops

REMINDER: Take videos and or photos of your playgrounds. You will need them for your portfolio.

Functions	
Introduction	✓
Composing a New Behavior	✓
Creating a New Function	✓
Collect, Toggle, Repeat	✓
Across the Board	✓
Nesting Patterns	✓
Slotted Stairways	✓
Treasure Hunt	✓
For Loops	
Introduction	✓
Using Loops	✓
Looping All the Sides	✓
To the Edge and Back	✓
Loop Jumper	✓
Branch Out	
Gem Farm	
Four Stash Sweep	

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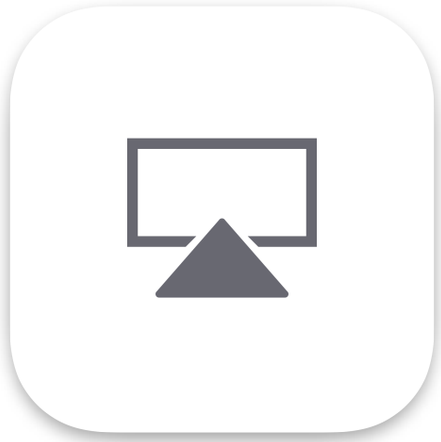
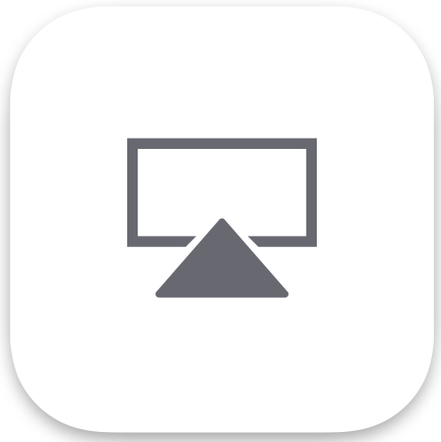


Share what you did in Swift Playgrounds with AirPlay.



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1. In a given puzzle, how many moves did the character make? And now, how many commands did you write?
2. When and why should you create functions and loops?
3. What other functions would/could you want to create in the app?

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Think ahead: How can you stop a for loop?

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JOURNAL

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