THINK LOGICALLY:
CONDITIONAL CODE

Lesson 4

LET’S PLAY “I SPY”

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LET’S DISCUSS

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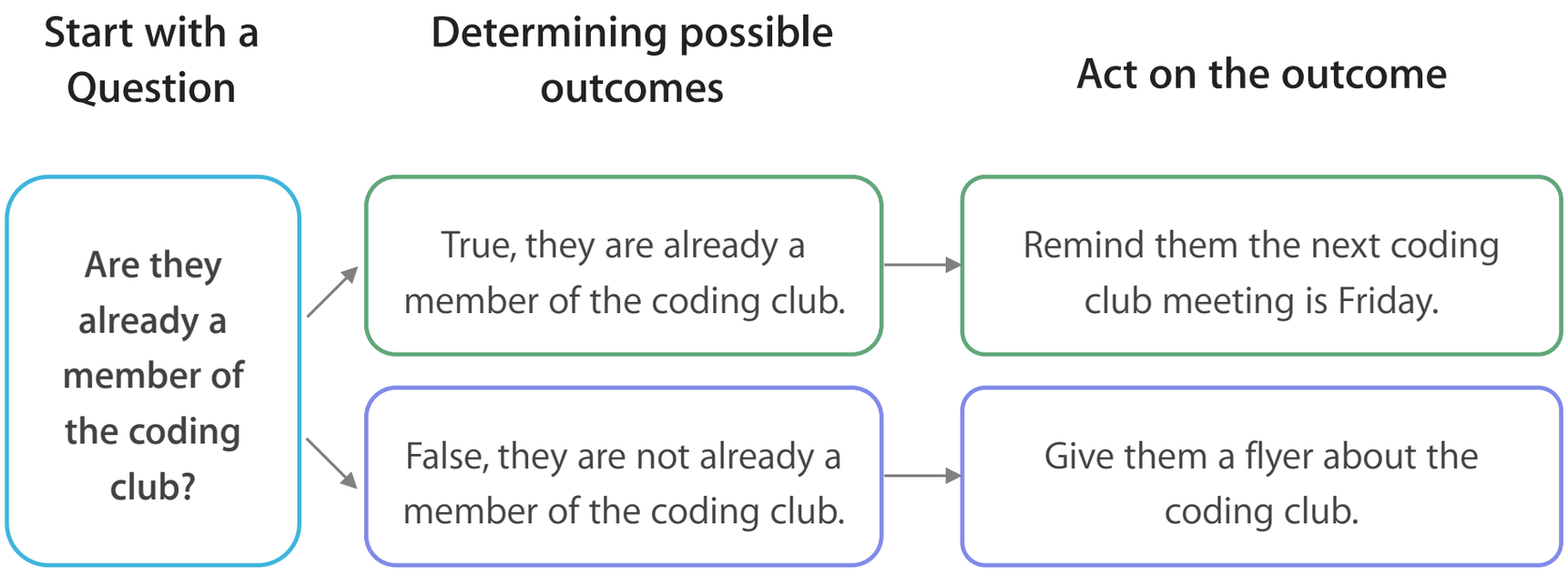
IMPORTANT VOCABULARY

Condition: Something you test that results in “true” or “false.” For example, you’re handing out flyers to recruit new members for the coding club. When you see a student, decide:



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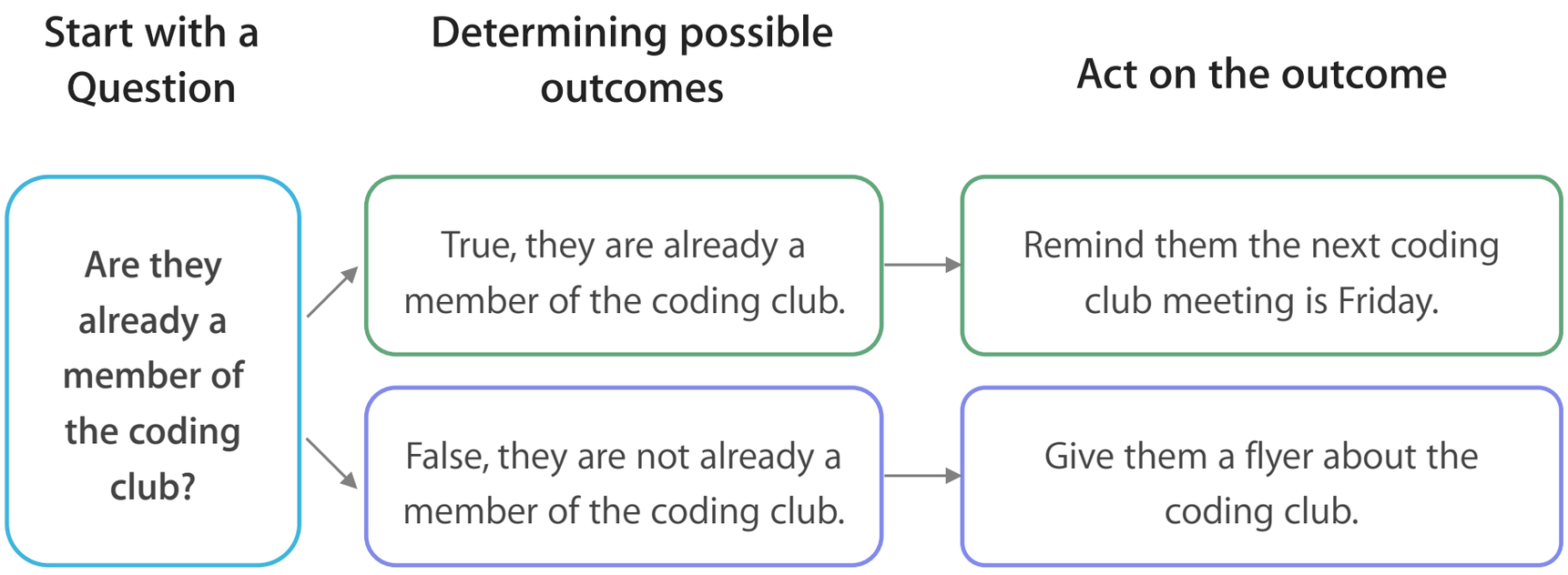

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Conditional code: A block of code THAT will run only if something is true. This can be expressed an an “if-then” statement. It can also include an “else block,” which runs if all conditions int he if statement are false.

Ex. If [person is interested in coding], then [invite to coding club], else [do not invite to coding club].

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Boolean: A value that can only be either true or false. For the conditional statement to run, we have to tell the computer what the possible outcomes are. So in our example, we set the Boolean to be true if “interested in coding” and false if “not interested in coding.”

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Logical Operator: A symbol or words such as “and,” “or,” and “not” that connects two or more Booleans to make conditional decisions more specific.

- AND (&&)—The AND operator results in “true” only if two statements are true; otherwise, the operator results in false. In coding, the statements are called “operands.”
- OR (II)—The OR operator results in “true” if one or both operands are true; otherwise, the operator results in false.
- NOT (!)—The NOT operator results in “true” if the value is false, and vice versa. It effectively inverts the value. True become false, and false becomes true.

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SCAVENGER HUNT

1. Write down 2 conditions on separate pieces of paper and add them to the hat.

2. Find a group.

3. Pick 3 conditions per group out of the hat.

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4. Use your iPad camera to take pictures of anything in the room that matches your conditions. Try to get at least 4 or 5 pictures for each condition.
5. Use Swift Playgrounds to create photo collages for each condition. Do not label your conditions on the collages yet.

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SHARE

1. Find another group to work with.
2. Show them your photo collages, and ask them to guess the condition for each collage.
3. Did they get it? Once they are correct, add conditional statements to your collages.
4. Switch. Now look at the other group’s collages and guess their conditions.

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SCAVENGER HUNT WITH LOGICAL OPERATORS

1. I will assign each group a logical operator (and, or, not).

2. Using the 3 conditions you have, create a new conditional statement with your assigned operator.

3. Create another photo collage with examples that satisfy the new conditional statement with an operator.

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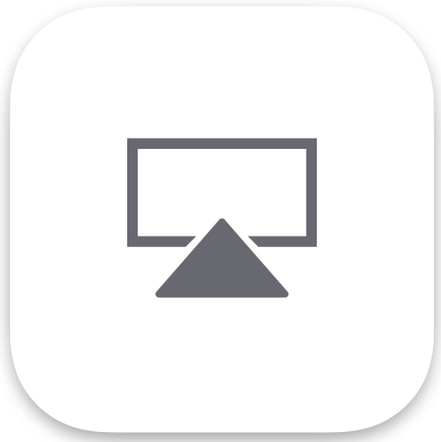

Share your photo collages
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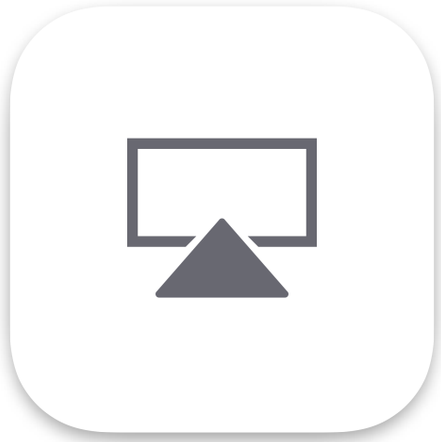

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TIME FOR SWIFT PLAYGROUNDS

Chapter: Conditional Code and Operators

Conditional Code	
Introduction	✓
Checking for Switches	✓
Using else if	✓
Looping Conditional Code	✓
Conditional Climb	✓
Defining Smarter Functions	✓
Boxed In	✓
Decision Tree	✓
Logical Operators	
Introduction	✓
Using the NOT Operator	✓
Spiral of NOT	✓
Checking This AND That	✓
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Logical Labyrinth	✓

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

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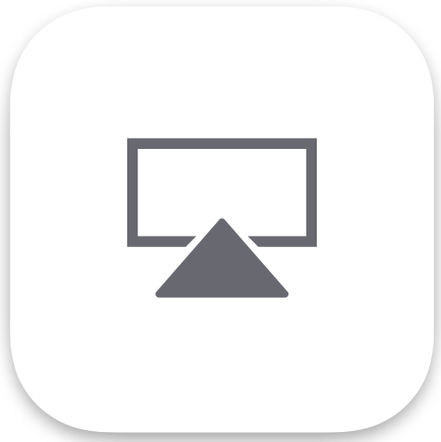

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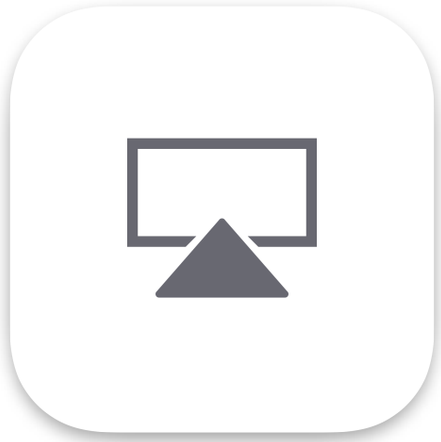

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2. How did you combine for loops and if statements? Why?
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4. What about in everyday life? What kinds of conditional decisions do you make every day?

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JOURNAL

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2. Upload screenshots from Swift Playgrounds.
3. Record answers to these questions:
    - What are conditions, conditional coding, Booleans, and logical operators? (Use your own words.)
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