Aim: To use nested conditional statements with specified probability to determine which outcome will be chosen

Open your Choose Your Own Adventure story assignment in Google Classroom

Story 1

– – –

Have the writer of the story read line 1. When given the choice, the other student will flip a coin (Use RANDOM.ORG - Coin Flipper)

Heads - PIck the first choice (line 2)

Tails - Pick the second choice (line 5)

Writer reads the next line. When given the choice, the other student will flip a coin.

Heads - Pick the first choice

Tails - Pick the second choice.

Story 2

– – –

Have the writer of the story read line 1. When given the choice, the other student will roll a die (Use RANDOM.ORG - Dice Roller)

Roll 6 - PIck the first choice (line 2)

Roll not a 6- Pick the second choice (line 5)

Writer reads the next line. When given the choice, the other student will flip a coin.

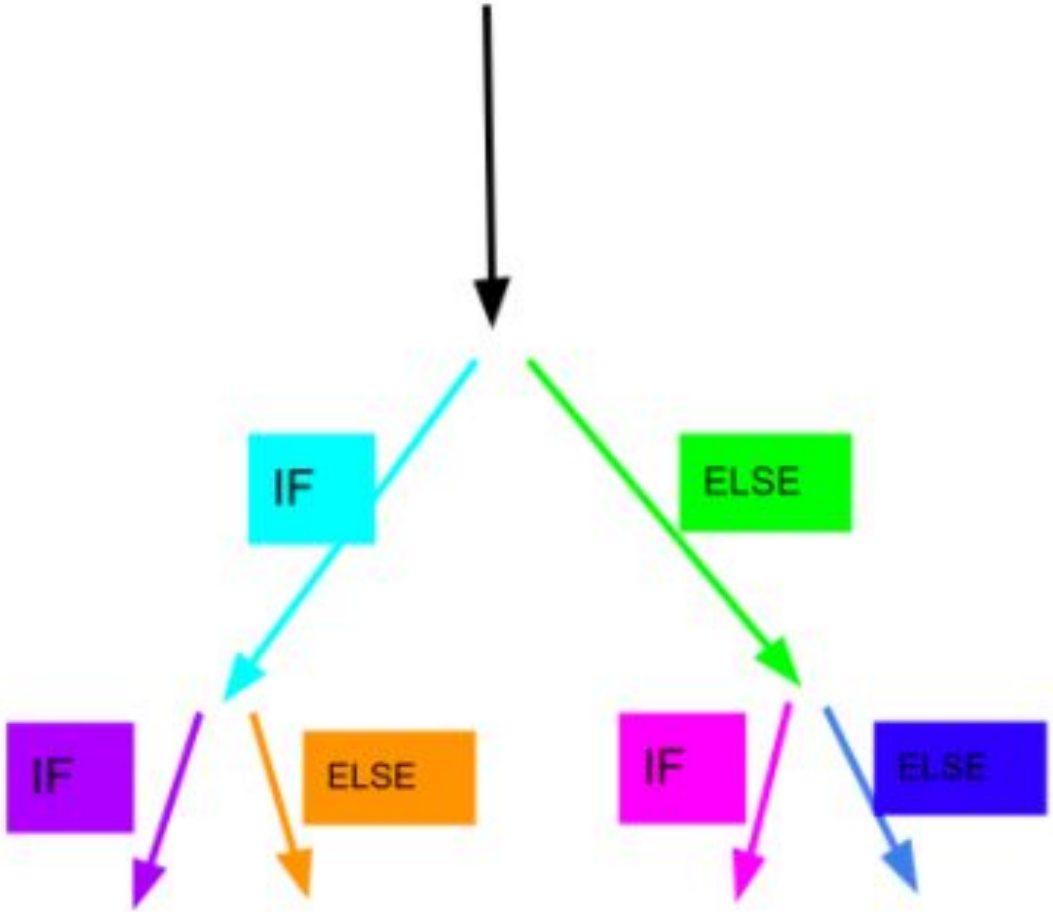
Roll 6 - Pick the first choice

Roll not a 6 - Pick the second choice.

Nested conditionals

Conditionals are like approaching a fork in the road and having to choose a path. However once we have chosen one path we may wind up with another choice later on.

In code, this is called a nested condition.


IF
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IF
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IF
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Probability:

The extent to which something is probable;
the likelihood of something happening or being the case.

When reading your stories with the coin flip, what was the probability of your choosing the first choice?

Students, write your response!

When reading your stories with the dice roll, what was the probability of you choosing the first choice?

Students, write your response!

Copy and paste this code into Sonic Pi and run it.

Part 1

```
 use_random_seed Time.now.to_i
puts # Enter line 1
if one_in(2)
  puts # Enter line 2
  if one_in(2)
    puts # Enter line 3
  else
    puts # Enter line 4
  end
```

Part 2

```
else
  puts # Enter line 5
  if one_in(2)
    puts # Enter line 6
  else
    puts # Enter line 7
  end
end
```

```
 1  use_random_seed Time.now.to_i
 2  puts # Enter line 1
 3  if one_in(2)
 4    puts # Enter line 2
 5    if one_in(2)
 6      puts # Enter line 3
 7    else
 8      puts # Enter line 4
 9    end
10  else
11    puts # Enter line 5
12    if one_in(2)
13      puts # Enter line 6
14    else
15      puts # Enter line 7
16    end
17  end
```

```ruby
use_random_seed Time.now.to_i
puts "You enter a room. On the table in this room,
there is a plate of cookies and a single cupcake."
if one_in(2)
  puts "Eating the cookie has given you the power to read people's minds."
  if one_in(2)
    puts "The doctor discovers that the effects are only temporary.
You spend the day resting at home and are back to normal the next day."
  else
    puts "You use this power to find out the answers to your math test.
You get in trouble for cheating, fail the test and can no longer read minds."
  end
else
  puts "The cupcake causes all your hair to fall out."
  if one_in(2)
    puts "The adhesive from the wig causes an allergic reaction to your scalp.
Your hair never grows back and your head becomes too sensitive to cover up
with anything else."
  else
    puts "While wearing the hat, Someone on the street mistakes you
for someone they owe $1000 to. They give you the money and you use it
to buy the latest iPhone. Your hair grows back two days later."
  end
end
```

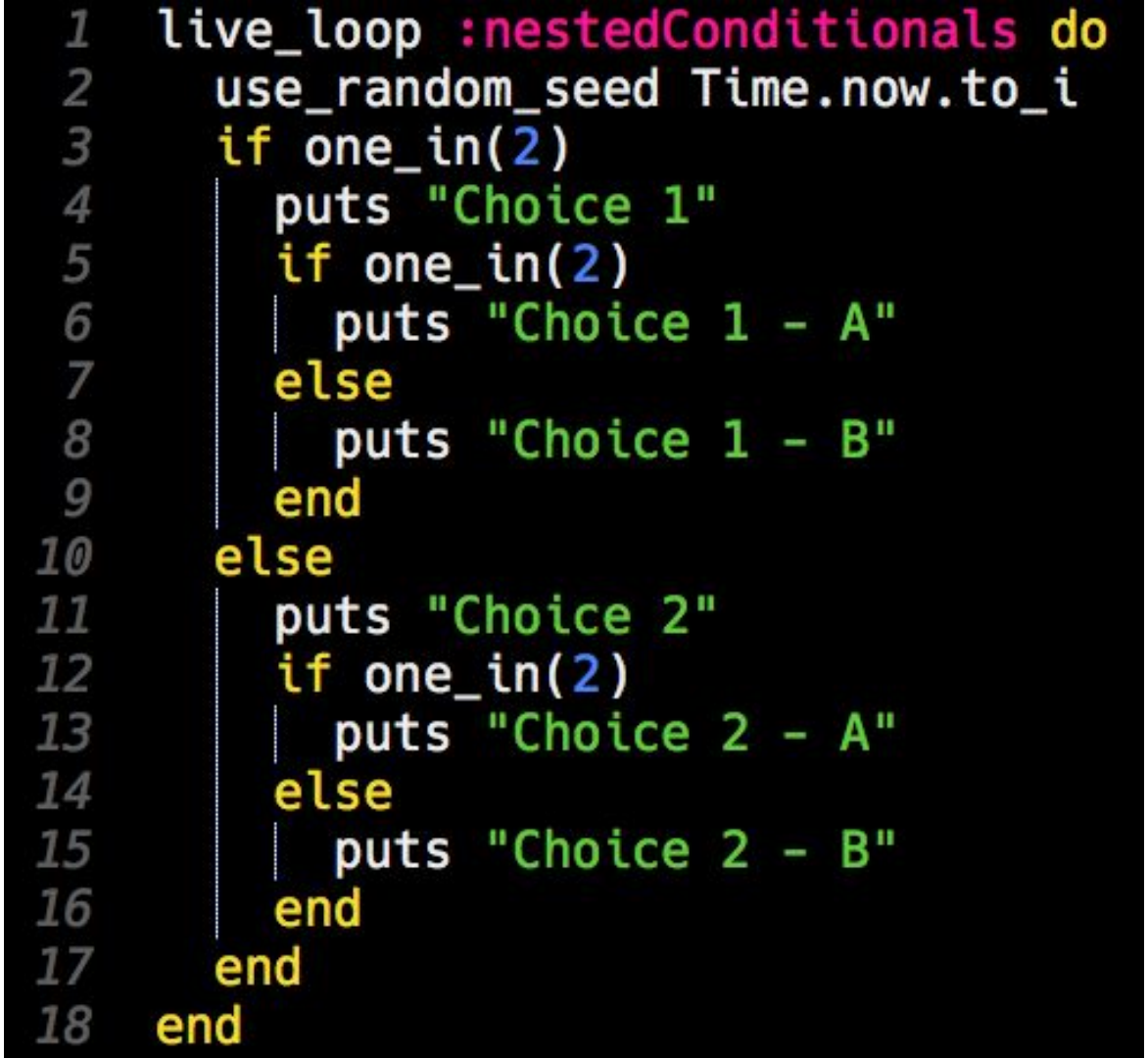
Copy and paste this code into Sonic Pi and run it.

Part 1

```
live_loop :nestedConditionals do
 use_random_seed Time.now.to_i
 if one_in(2)
   puts "Choice 1"
   if one_in(2)
     puts "Choice 1 - A"
   else
     puts "Choice 1 - B"
   end
```

Part 2

```
else
    puts "Choice 2"
    if one_in(2)
      puts "Choice 2 - A"
    else
      puts "Choice 2 - B"
    end
  end
end
```


live_loop :nestedConditionals do
use_random_seed Time.now.to_i
if one_in(2)
puts "Choice 1"
if one_in(2)
puts "Choice 1 - A"
else
puts "Choice 1 - B"
end
else
puts "Choice 2"
if one_in(2)
puts "Choice 2 - A"
else
puts "Choice 2 - B"
end
end
end

Expectations

- Add play, sample and sleep functions to make different possible outcomes in each if/else statement.
- Change the probabilities of the one_in functions

Extensions

- Include single line conditionals within an if or else statement to add more possible outcomes.
- Have probabilities in one_in functions be chosen randomly

Rubric	✅✅✅✅✅	✅✅✅	✅✅	✅
Meeting expectations	Project meets expectations and includes both extensions	Project meets expectations and includes one extension	Project meets expectations but includes no extensions	Project does not meet expectations