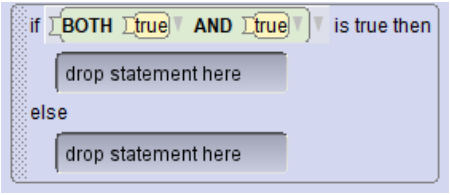
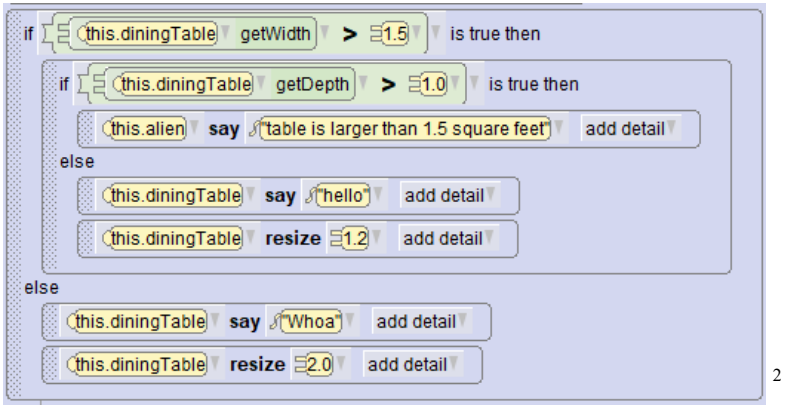
CompSci 94
Logic with Ifs, Nested Ifs
September 26, 2019



Prof. Susan Rodger

Review Nested IF

- What happens if the diningTable has width 1.7 and depth 1.0?



Logic Review

- What are possible values of A and B
  - if **A and B** is True?
  - if **A or B** is True?
  - if **A or B** is False?

Logic Truth Table

A	B	not A	A and B	A or B
True	True	False	True	True
True	False	False	False	True
False	True	True	False	True
False	False	True	False	False

Logic Truth Table

A AND B is **true** only if both A and B are **true**

A	B	not A	A and B	A or B
True	True	False	True	True
True	False	False	False	True
False	True	True	False	True
False	False	True	False	False

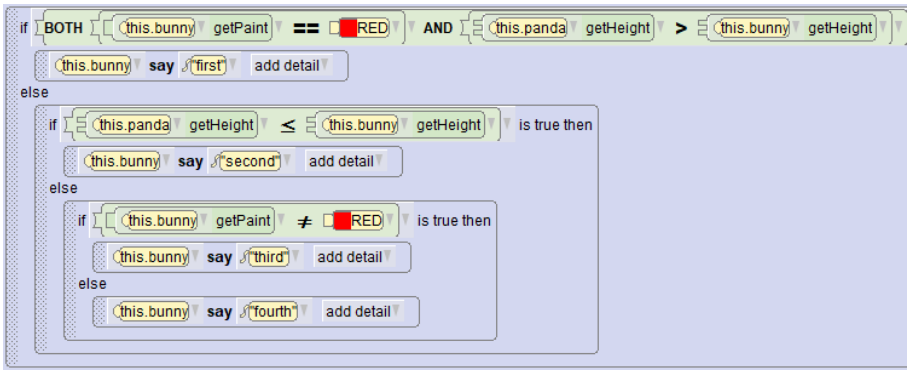
Logic Truth Table

A OR B is **false** only if both A and B are **false**

A	B	not A	A and B	A or B
True	True	False	True	True
True	False	False	False	True
False	True	True	False	True
False	False	True	False	False

Consider this code – Nested Ifs
How would you write it with ONE IF?

What does bunny say?

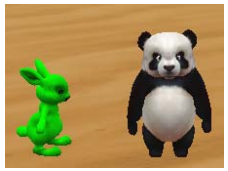


Bunny is red to start.

Bunny different. What does bunny say?

```
if BOTH this.bunny getPaint == RED AND this.panda getHeight > this.bunny getHeight
    this.bunny say "first" add detail
else
    if this.panda getHeight ≤ this.bunny getHeight is true then
        this.bunny say "second" add detail
    else
        if this.bunny getPaint ≠ RED is true then
            this.bunny say "third" add detail
        else
            this.bunny say "fourth" add detail
```

Bunny is green to start.



Give an example to make bunny say fourth

```
if BOTH this.bunny getPaint == RED AND this.panda getHeight > this.bunny getHeight
    this.bunny say "first" add detail
else
    if this.panda getHeight ≤ this.bunny getHeight is true then
        this.bunny say "second" add detail
    else
        if this.bunny getPaint ≠ RED is true then
            this.bunny say "third" add detail
        else
            this.bunny say "fourth" add detail
```


Announcements

- Assignment 3 due Tuesday night
- RQ and Videos due Tuesday 8:30am
- Exam 1 in two weeks, review next Thursday

Class Today

- Nested Ifs, Logic – and/or/not