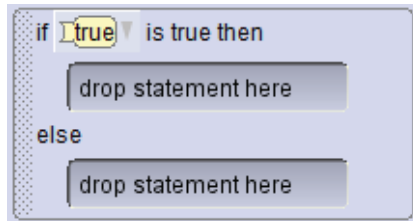


CompSci 94

Making Decisions with If statements

September 30, 2021



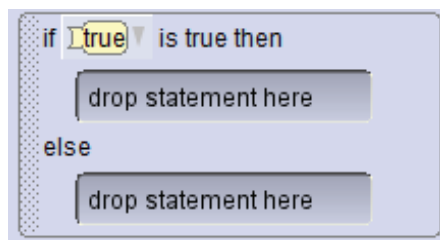
Prof. Susan Rodger

Announcements

- Assignment 3 due tonight!
 - Don't forget the reflect form
- Videos and QZ10 due Thursday, Oct 7 when class starts
- Don't get behind, be sure to check your grades on Sakai for Classwork

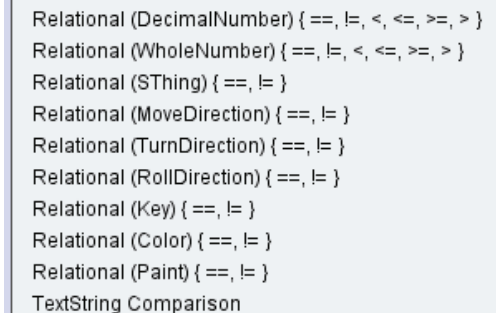
If statements

- What types can you compare in an if statement?



If statements

- What types can you compare in an if statement?
 - Numbers
 - Directions
 - Paints
 - TextStrings
 - Objects
 - etc



Relational (DecimalNumber) { ==, !=, <, <=, >=, > }	▶
Relational (WholeNumber) { ==, !=, <, <=, >=, > }	▶
Relational (SThing) { ==, != }	▶
Relational (MoveDirection) { ==, != }	▶
Relational (TurnDirection) { ==, != }	▶
Relational (RollDirection) { ==, != }	▶
Relational (Key) { ==, != }	▶
Relational (Color) { ==, != }	▶
Relational (Paint) { ==, != }	▶
TextString Comparison	▶

Q1 Panda distanceTo

- What does this code do when it executes?

```

if { this.panda getDistanceTo this.bunny > 2.0 } is true then
  this.panda moveTo this.bunny, 2.0 add detail
else
  this.panda say "I'm here" add detail
  
```

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Q1 Panda distanceTo

- What does this code do when it executes?

```

if { this.panda getDistanceTo this.bunny > 2.0 } is true then
  this.panda moveTo this.bunny, 2.0 add detail
else
  this.panda say "I'm here" add detail
  
```

- If the panda is more than two units from the bunny, the panda moves two units towards the bunny
- Otherwise the panda says “I’m here”
- If the panda is 3 units from the bunny, can both the panda move and say “I’m here” happen?

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Q2. Create line w/ Panda distanceTo

- How does one create **first line** of this code?

```

if { this.panda getDistanceTo this.bunny > 2.0 } is true then
  this.panda moveTo this.bunny, 2.0 add detail
else
  this.panda say "I'm here" add detail
  
```

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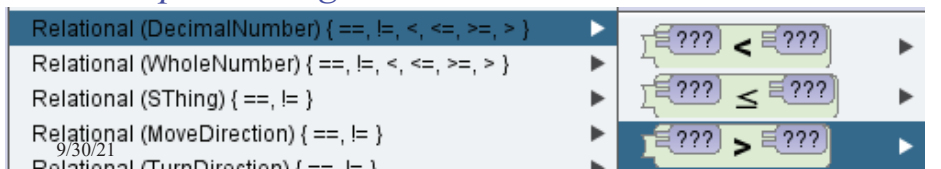
Q2 Create line w/ Panda distanceTo

- How does one create **first line** of this code?

```

if { this.panda getDistanceTo this.bunny > 2.0 } is true then
  this.panda moveTo this.bunny, 2.0 add detail
else
  this.panda say "I'm here" add detail
  
```

- First drag in an IF tile and select True
- Then click on True and select *decimal number compare with greater than*



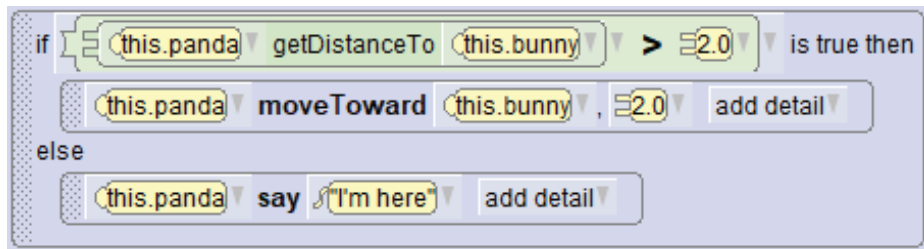
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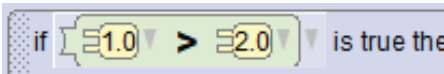
7

Q2 Create line w/ Panda distanceTo

- How does one create **first line** of this code?

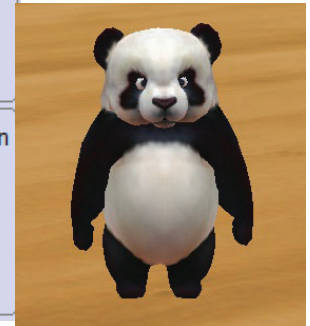


- First drag in an IF tile and select True
- Then click on True and select *decimal number compare with greater than*
- Select numbers 1.0 and 2.0
- Replace the 1.0 by dragging the function over it



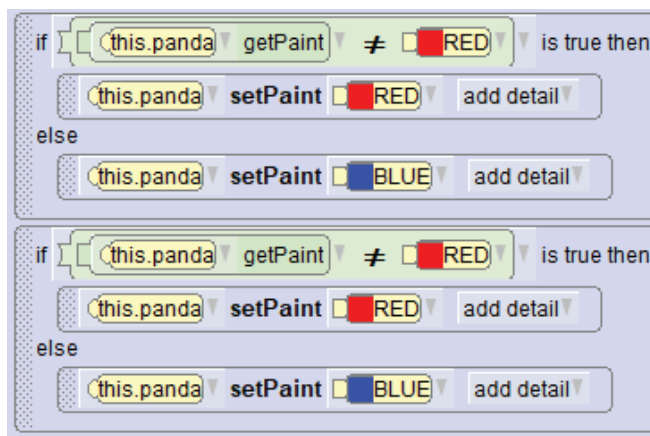
Q3 Making decisions - If statement

- What happens when this code runs?



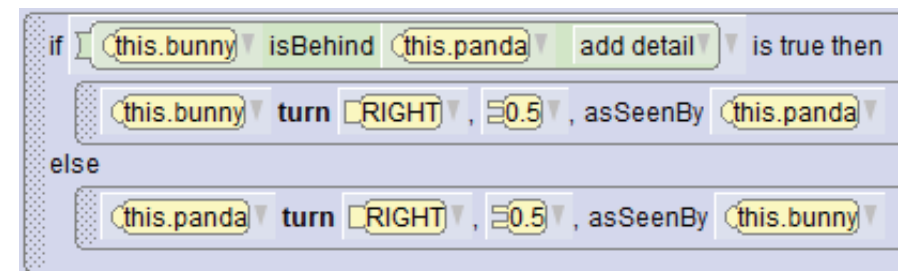
Q3 Making decisions - If statement

- What happens when this code runs?



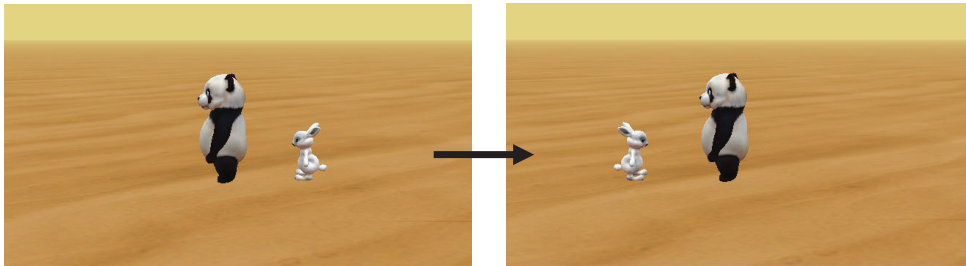
- Panda turns red and then panda turns blue

Q4 What happens when this If executes?



Q4 What happens when this If executes?

```
if (this.bunny isBehind this.panda add detail) is true then
  this.bunny turn RIGHT, 0.5, asSeenBy this.panda
else
  this.panda turn RIGHT, 0.5, asSeenBy this.bunny
```



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Q5 Execute a copy of the if again? (execute the same code a second time)

```
if (this.bunny isBehind this.panda add detail) is true then
  this.bunny turn RIGHT, 0.5, asSeenBy this.panda
else
  this.panda turn RIGHT, 0.5, asSeenBy this.bunny
```

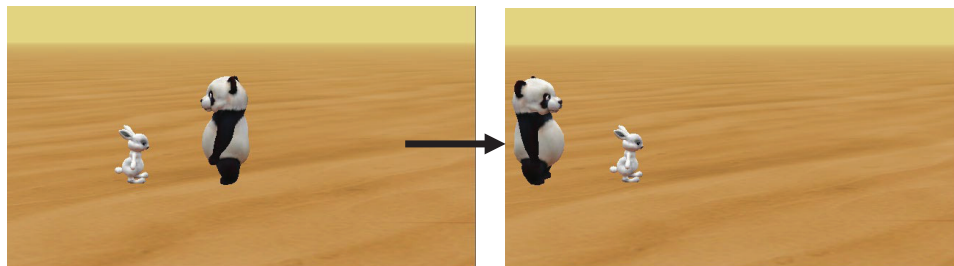
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Q5 Execute a copy of the if again?

```
if (this.bunny isBehind this.panda add detail) is true then
  this.bunny turn RIGHT, 0.5, asSeenBy this.panda
else
  this.panda turn RIGHT, 0.5, asSeenBy this.bunny
```



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Q6 Execute a third copy of the if?

```
if (this.bunny isBehind this.panda add detail) is true then
  this.bunny turn RIGHT, 0.5, asSeenBy this.panda
else
  this.panda turn RIGHT, 0.5, asSeenBy this.bunny
```

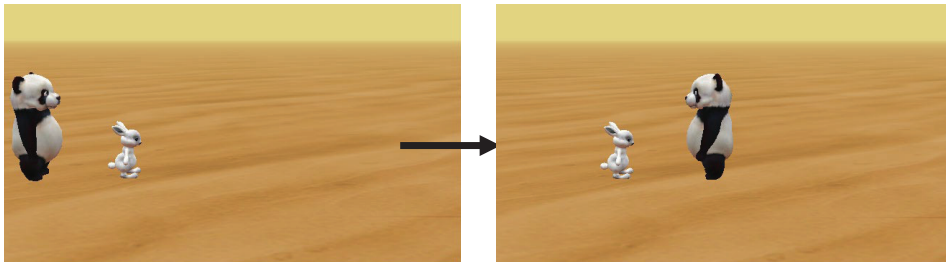
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Q6 Execute a third copy of the if?

```
if [this.bunny] isBehind [this.panda] add detail is true then
  [this.bunny] turn RIGHT, 0.5, asSeenBy [this.panda]
else
  [this.panda] turn RIGHT, 0.5, asSeenBy [this.bunny]
```



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Class Today

- Working with making decisions



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