Random Numbers, Making Decisions with If statements

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Prof. Susan Rodger
Constant Variable

• What is a constant variable?

• How do you create a constant variable in Alice?

• How do you use a constant variable?
Random Numbers

• What is a random number?

• In Alice, how does one get a random number in an instruction?

• Give examples of numbers in this range?
Random Integers

• How many different integers are a possibility with this statement?

![Diagram showing a code snippet involving random integers with labels and variables like constant, WholeNumber, someNumber, and nextRandomIntegerFromAUpToButExcludingB.]
If statements

• What types can you compare in an if statement?
Panda distanceTo

• What does this code do when it executes?

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?

No! Only one.
Create line w/ Panda distanceTo

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

![Code Diagram]

- 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
- If **this.panda** getDistanceTo **this.bunny** > 2.0, then **this.panda** moveToward **this.bunny**, 2.0
- Else **this.panda** say "$I'm here$"
Making decisions - If statement

• What happens when this code runs?

```java
if (this.panda.getPaint != RED) { // if a condition is true
    this.panda.setPaint(RED); // then set the paint to red
    add detail;
} else { // if a condition is false
    this.panda.setPaint(BLUE); // set the paint to blue
    add detail;
}
```
What happens when this If executes?
Execute a copy of the if again?
Execute a third copy of the if?
Announcements

• Exam 1 is Oct 10
• Assignment 3 due in one week
  – Have you started yet?
• QZ9 due Sept 26 – 8:30am
Class Today

• Working with random numbers and making decisions