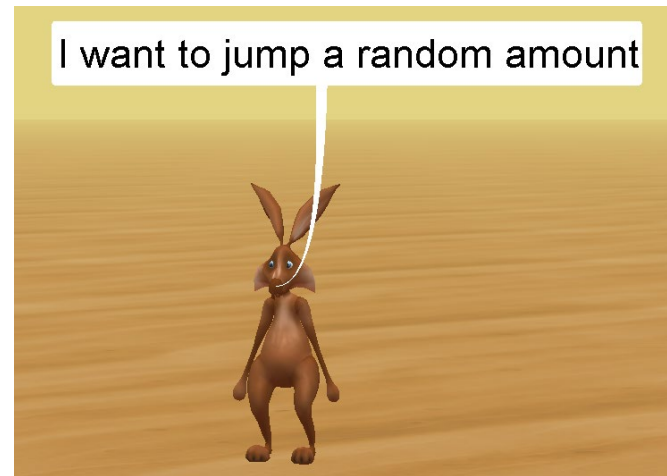


CompSci 94

Random Numbers

September 24, 2024

Prof. Susan Rodger



Announcements

- Assignment 3 out today –Oct 8 due
 - Can do some as practice for exam! Not required
- NO QZ for Thursday
 - QZ09 due Tuesday Oct 1– 10:05am
- *Don't get behind*, be sure to check your grades on Canvas for Classwork
- Exam 1 is Thursday!
 - Exam does not cover the topic today, random numbers!

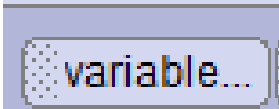
Exam 1 Sept 26

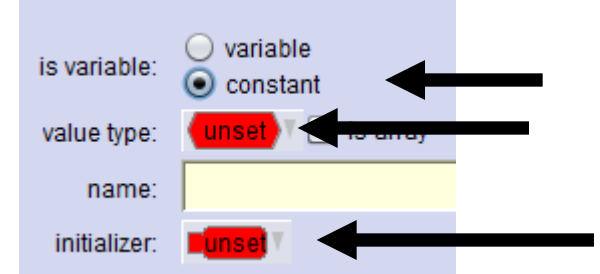
- On 9/26 calendar page for Exam 1
 - Covers topics through 9/19!
 - Exam 1 study guide with sample problems
 - Old tests, practice exam
 - Exam 1 reference sheet
- Practice writing code on paper!!!!
- Should have heard from me if you sent me an SDAO letter

Q1 Constant Variable

- What is a constant variable?
- How do you create a constant variable in Alice?
- How do you use a constant variable?

Q1 Constant Variable

- What is a constant variable?
 - Storage location
 - Can only store one value there
- How do you create a constant variable in Alice?
 - Drag in **variable** tile 
 - Be sure to select **constant**
 - Give it a **type** and **initial value**
- How do you use a constant variable?
 - Use it in place of anything of the same type

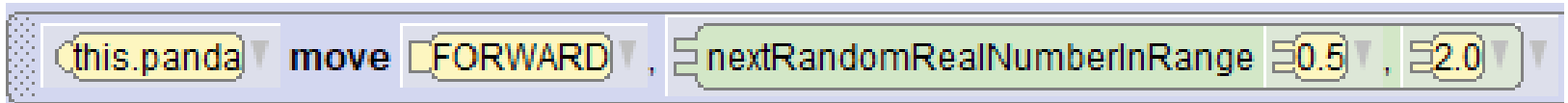


Q2 Random Numbers

- What is a random number?
- In Alice, how does one get the random number in this instruction?

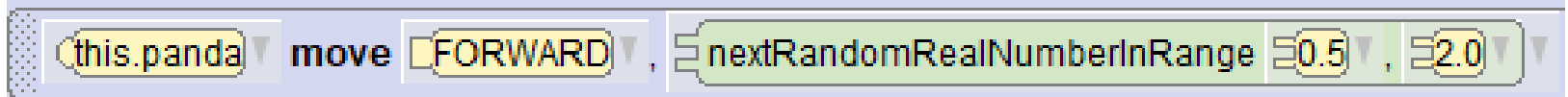


- Give examples of numbers in this range?

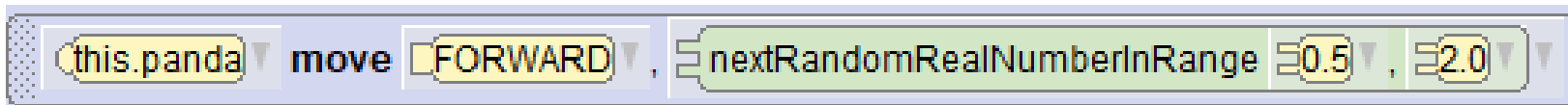


Q2 Random Numbers

- What is a random number?
 - Some number from a range of numbers
 - Don't know which number until it is generated
- In Alice, how does one get the random number in this instruction?



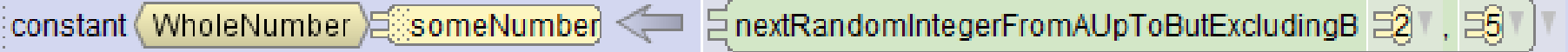
- Put in a number first, then can select “random”
- Give examples of numbers in this range?



- 0.5, 0.79, 1.3, 1.98

Q3 Random Integers

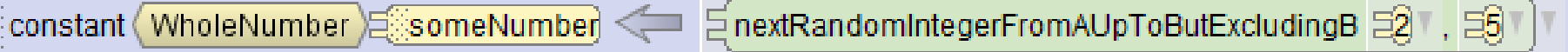
- How many different integers are a possibility with this statement?

A Scratch code snippet in a light blue bar. It starts with a 'constant' block, followed by a variable 'WholeNumber' in a yellow box, an equals sign, another yellow box 'someNumber', a grey arrow pointing left, an equals sign, a green block 'nextIntRandomIntegerFromAUpToButExcludingB', a dropdown menu showing '2', a comma, another dropdown menu showing '5', and a final dropdown arrow.

constant WholeNumber = someNumber ← = nextRandomIntegerFromAUpToButExcludingB 2 , 5 ▾

Q3 Random Integers

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



```
constant WholeNumber = someNumber ← nextRandomIntegerFromAUpToButExcludingB 2 , 5
```

- 3 possible numbers. They are: 2, 3, 4
- Note this says ...UpToButExcluding

Q4 Code with Random

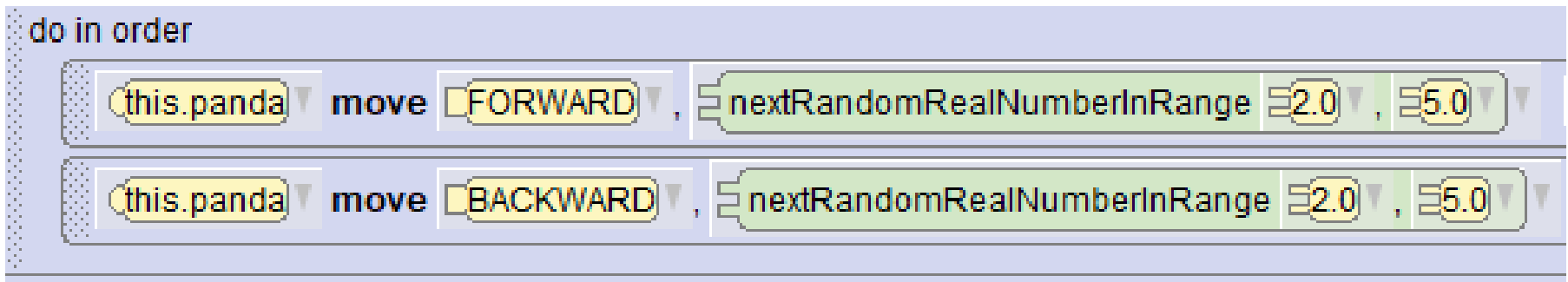
- After this code runs, is the Panda in the same place it started in?



```
do in order
  this.panda move FORWARD , nextRandomRealNumberInRange 2.0 , 5.0
  this.panda move BACKWARD , nextRandomRealNumberInRange 2.0 , 5.0
```

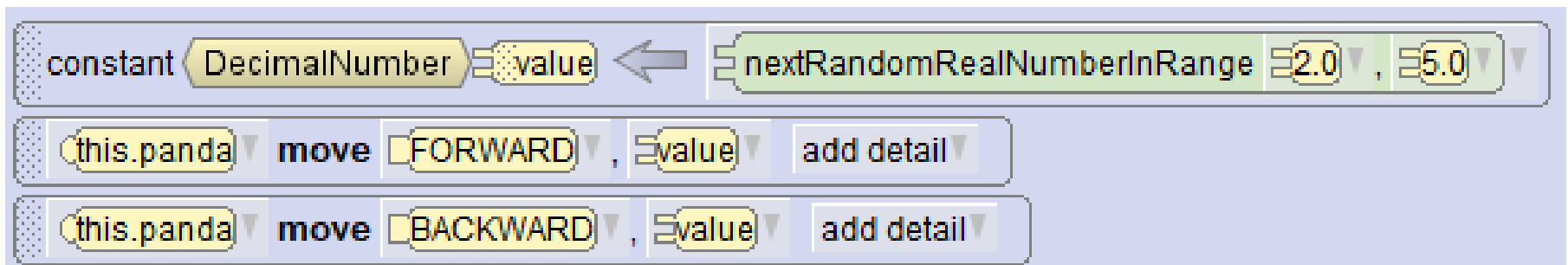
Q4 Code with Random

- After this code runs, is the Panda in the same place it started in?
- Probably not. Those are two DIFFERENT random numbers



Q4 Code with Random

- To randomly move forward and then come back to the same place, generate one random number, store it in a variable, and use it twice!



Class Today

- Working with random numbers

