

CompSci 94

Variables and Array Indexing

November 3, 2022



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Announcements

- Assignment 4 due Tuesday Nov 8
- Videos and online quiz for next class

Pig and Panda arrays

- Two arrays, animals are in the arrays from left to right as seen



unmanaged

```
▼ Pig[] pigArray ← new Pig[] { this.pig, this.pig2, this.pig3, this.pig4 }
▼ Panda[] pandaArray ← new Panda[] { this.panda, this.panda2, this.panda3, this.panda4 }
```

Review1 - What is the code for?

- Code for Pigs to turn right one pig at a time?

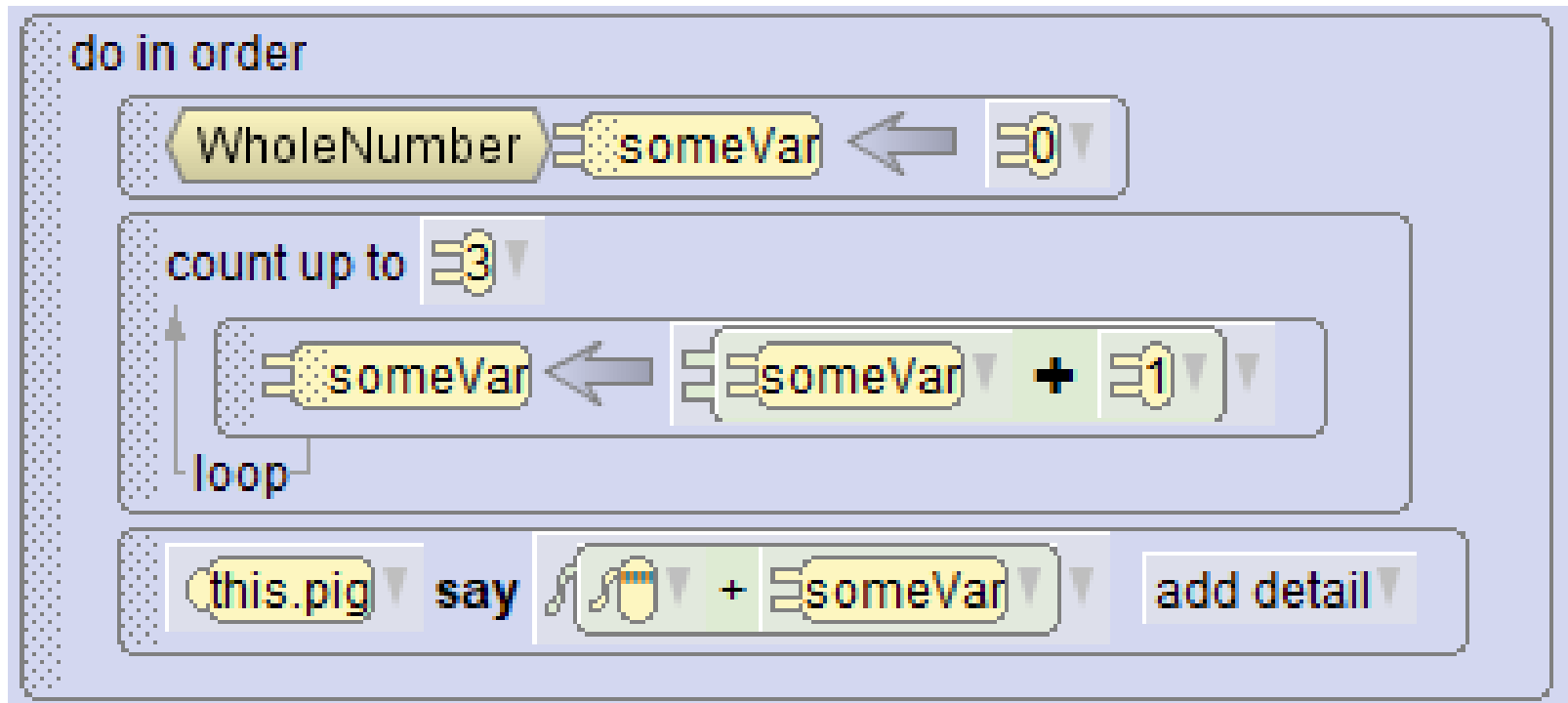
Review2 – What is the code for?

- Code for Pandas to bow **at the same time** (turn forward a little, then turn backward)?

Q1 – Questions about variables

- What is the difference between a const variable and a variable?
- Which Alice construct do you use to change a variable?

Q2 - What is the output of this code?



do in order

WholeNumber → someNum ← 0

count up to 3

someNum ← someNum + 1

loop

this.pig4 say pig + 1

add detail

1 (current value)

0

1

2

3

Random ▶

Decimal to Whole Number ▶

Math ▶

Custom WholeNumber...

array length:

this.pigArray.length

this.pandaArray.length

TextString ▶

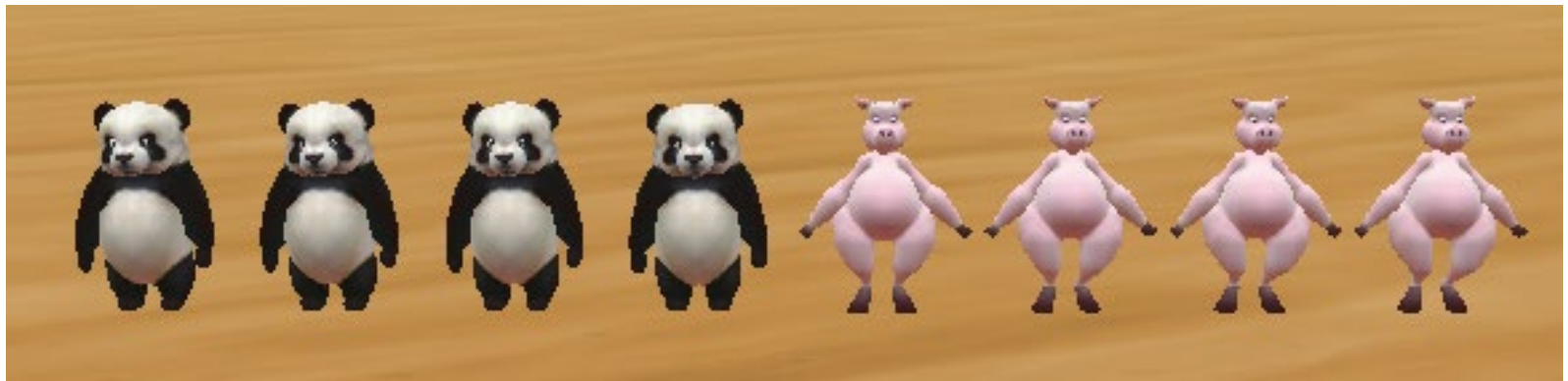
DecimalNumber ▶

SThing ▶

Q3 -- Consider this code.
 Why isn't somenum a
 choice?

Pig and Panda arrays again

- Two arrays, animals are in the arrays from left to right as seen



unmanaged

```
▼ Pig[] pigArray ← new Pig[] { this.pig, this.pig2, this.pig3, this.pig4 }
▼ Panda[] pandaArray ← new Panda[] { this.panda, this.panda2, this.panda3, this.panda4 }
```

Q4 – How do I write an **array index loop** to have each pig turn right once?

- *Fill in the missing code:*

The image shows a Scratch code editor with a 'do in order' loop. The loop contains two blocks:

- A 'WholeNumber' block with 'index' in the input field and '0' in the dropdown menu. An arrow points from the 'index' field to the '0' dropdown.
- A 'count up to' block with 'this' in the dropdown menu, '.pigArray' in the input field, and '.length' in the dropdown menu.

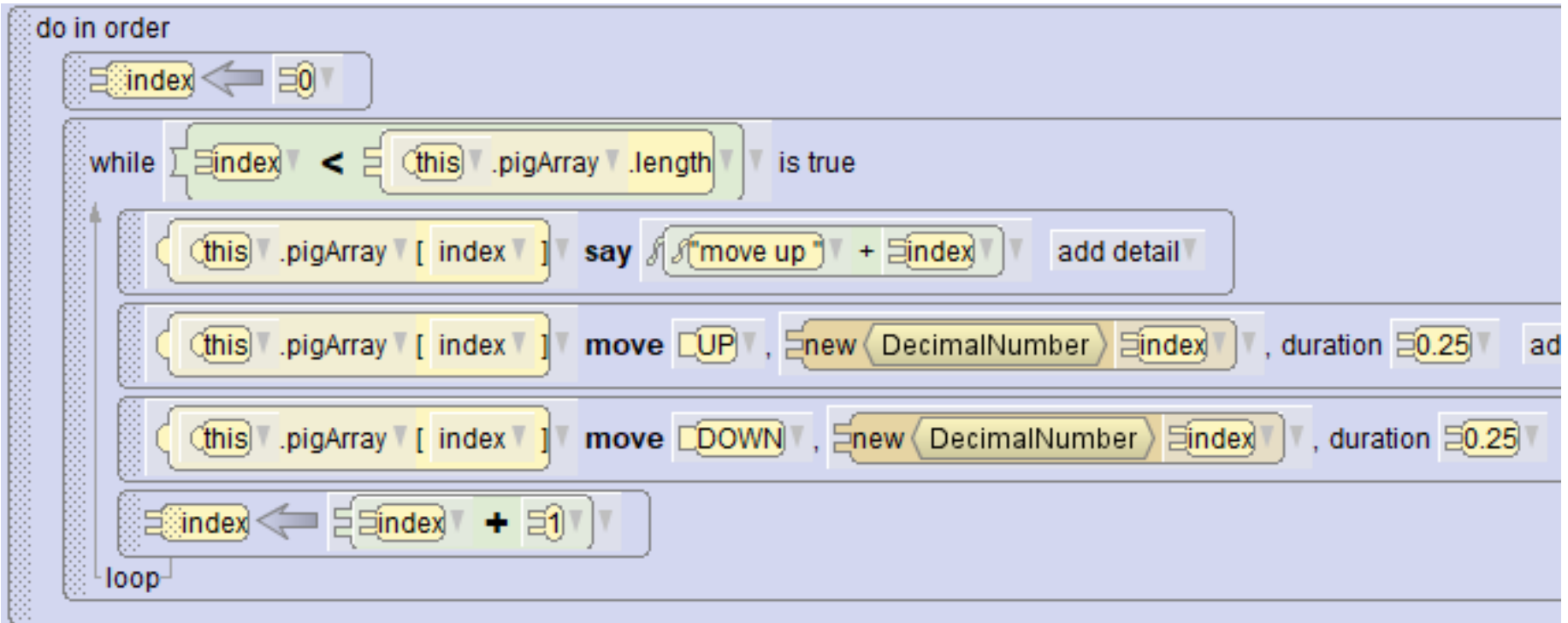
The loop is labeled 'loop' at the bottom left corner.

Q5 – How do I write code to have each pig turn right once one at a time, with one of the pandas turning with each pig?

- *Fill in missing code:*

The image shows a Scratch 'do in order' loop block. The block is titled 'do in order' and contains a 'loop' sub-block. The 'loop' sub-block has a 'count up to' field set to 'this . pigArray . length'. The 'loop' sub-block has an 'index' field set to '0'. The 'loop' sub-block has an 'index' field set to 'index + 1'. The 'loop' sub-block has a large empty white box for code.

Q6 – What does this code do?



Q7 – How do you write code to color every other panda green in array?

- Start with no color

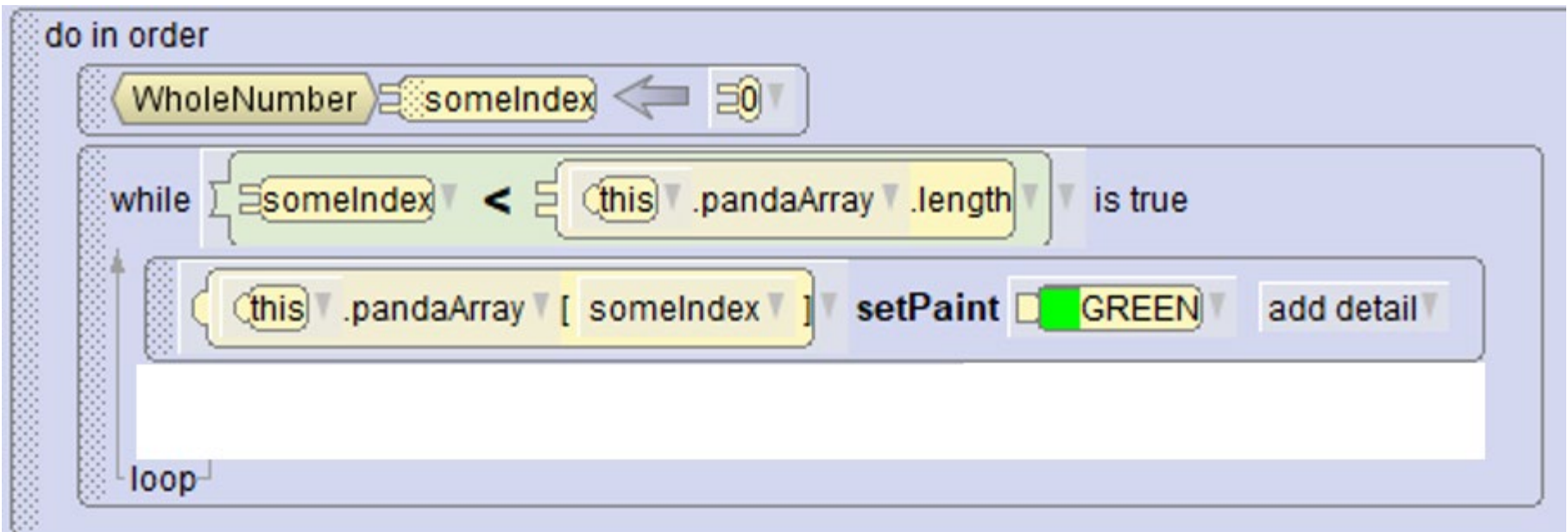


- Color every other green (1st one, 3rd one, etc.)



Q7 – How do you write code to color every other panda green in array?

- What is the missing line of code?



Class Today

- Array of penguins

That is every other penguin in the array

