

CompSci 94

Variables and Array Indexing

November 3, 2022



Prof. Susan Rodger

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?

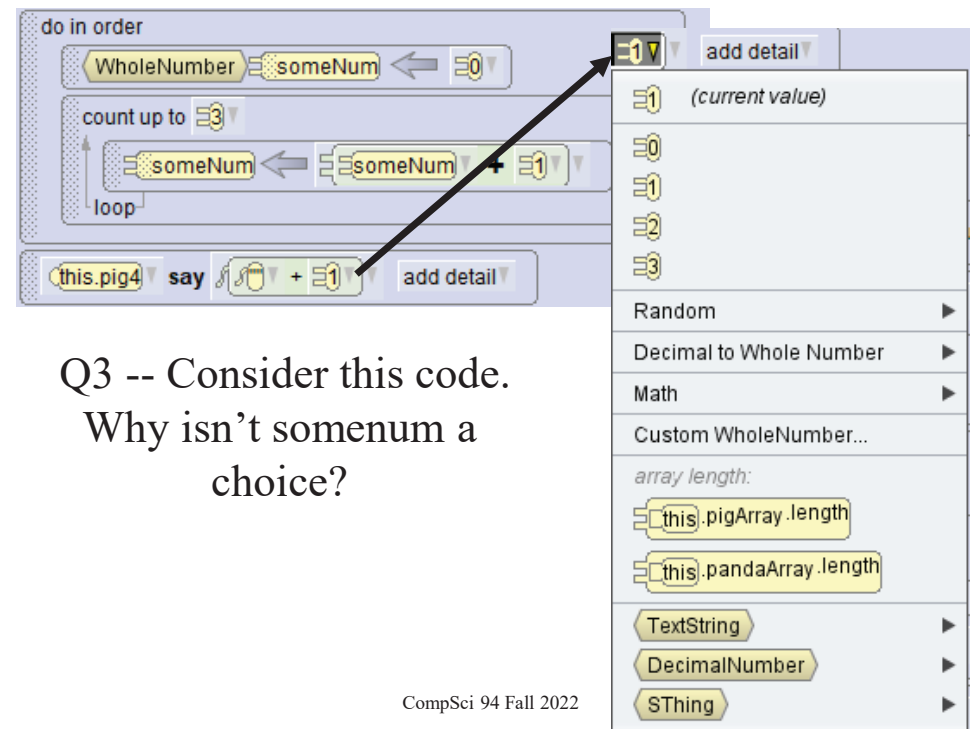
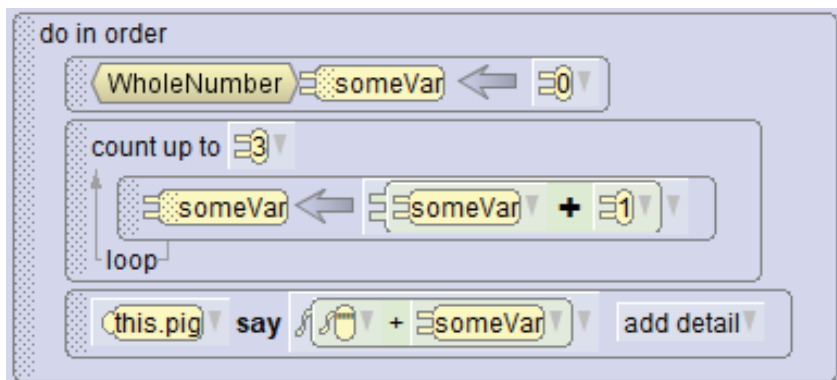
Review2 – What is the code for?

- 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?



The code in the image is as follows:

```
do in order
  WholeNumber someNum ← 0
  count up to 3
  loop
    someNum ← someNum + 1
  end loop
  this.pig4 say [someNum] + add detail
```

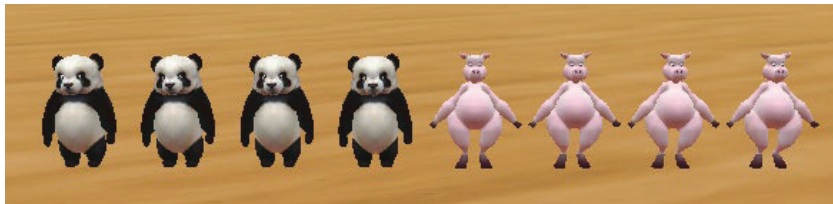
A dropdown menu is open over the 'someNum' variable in the 'say' block, showing the following options:

- (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:

```

do in order
  WholeNumber ← index ← 0
  count up to ← this.pigArray.length
  loop
  
```

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:

```

do in order
  index ← 0
  count up to ← this.pigArray.length
  loop
  index ← index + 1
  
```

Q6 – What does this code do?

```

do in order
  index ← 0
  while (index < this.pigArray.length) is true
    this.pigArray[index] say (move up + index) add detail
    this.pigArray[index] move UP, new DecimalNumber(index), duration 0.25 ad
    this.pigArray[index] move DOWN, new DecimalNumber(index), duration 0.25
    index ← index + 1
  loop
  
```

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

- Start with no color

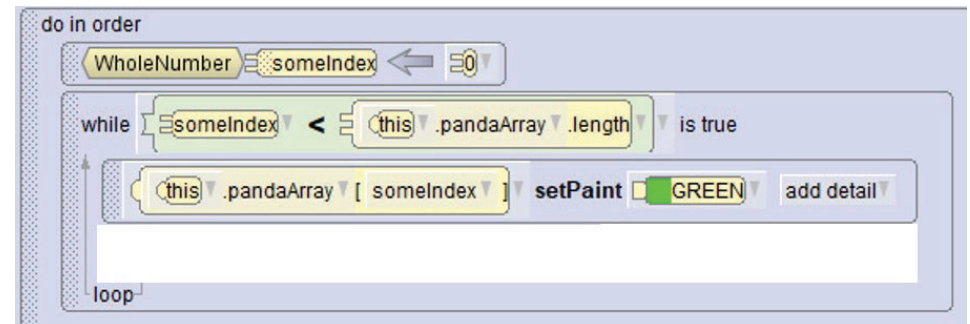


- Color every other green (1st one, 3rd one, etc.)



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

