CompSci 94
Variables and Array Indexing
October 26, 2021
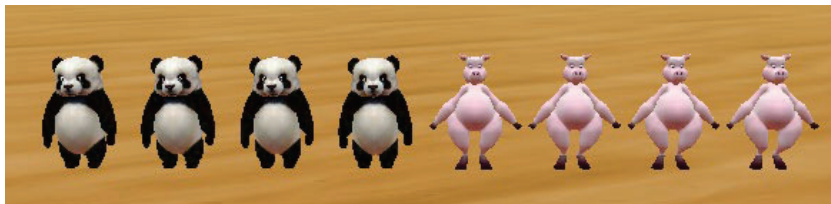

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Announcements

- Assignment 4 due Thursday Oct 28
- 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?
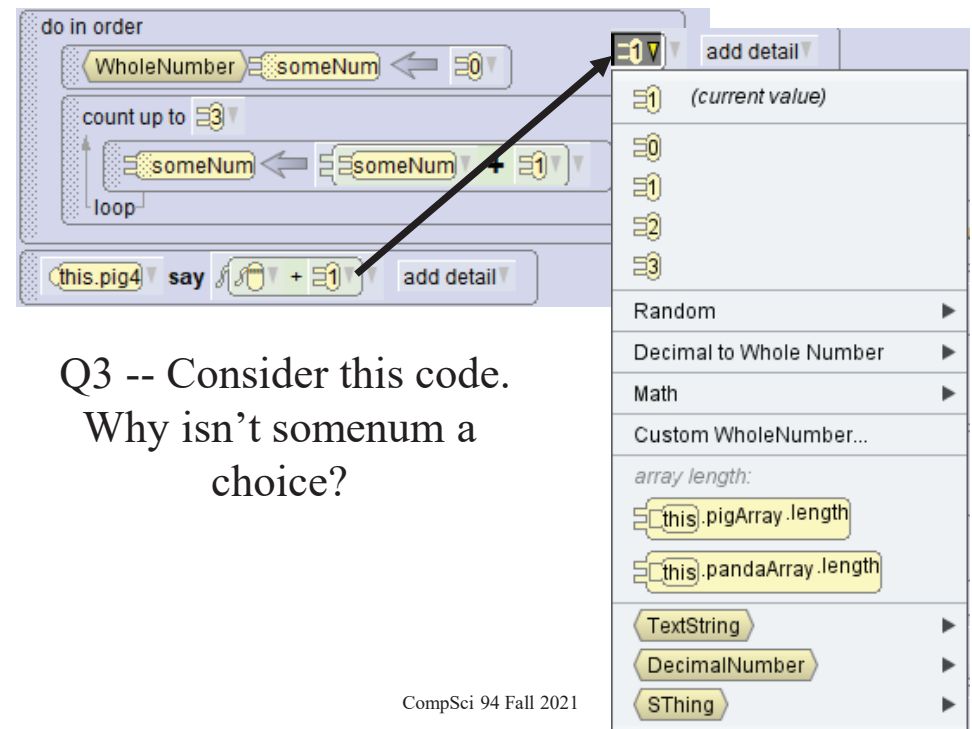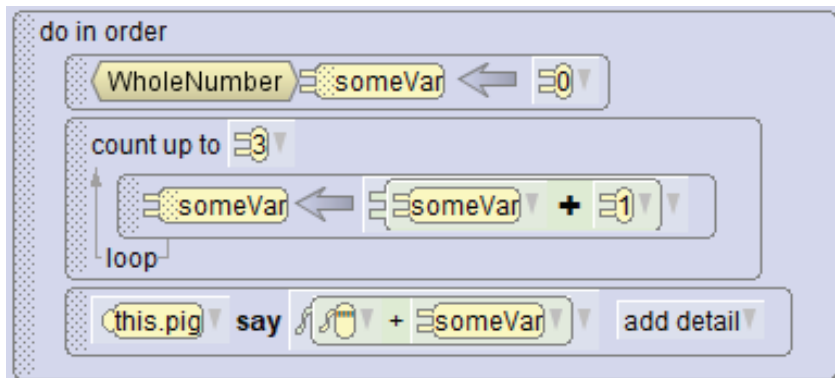
- Code for Pigs to turn right one pig at a time?

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  someVar  ⇐  0
    count up to 3
        someVar  ⇐  someVar  +  1
    loop
    this.pig  say  🐷 + someVar   add detail
```

```
do in order
    WholeNumber  someNum  ⇐  0
    count up to 3
        someNum  ⇐  someNum  +  1
    loop
    this.pig4  say  🐷 + 1   add detail
```

```
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
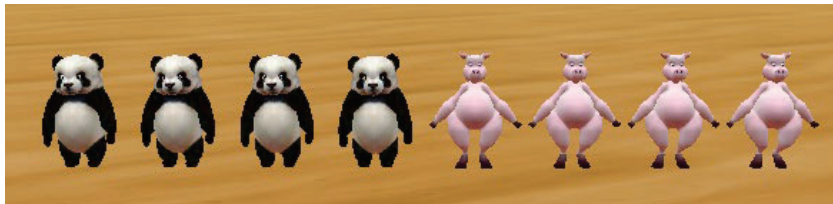
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▼ (Pig[]) **pigArray** ⟸ [new Pig[] { (this.pig), (this.pig2), (this.pig3), (this.pig4) }]

▼ (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



        =index ⟸ =index + =1
    loop
```

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?
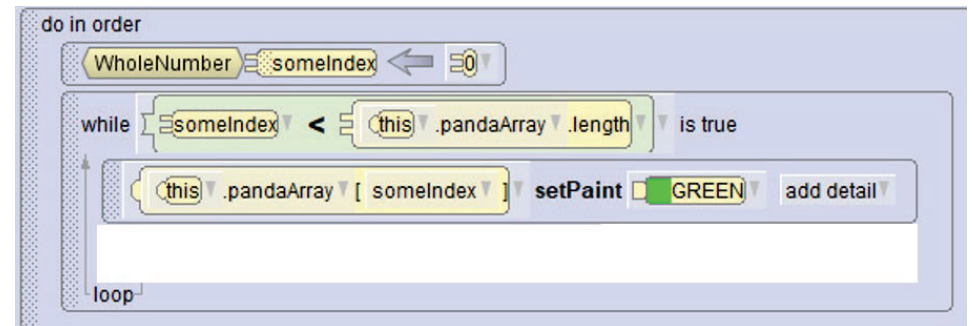
- Start with no color

- 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?

```
do in order
    WholeNumber  someIndex  ⇐  0
    while   someIndex  <   this .pandaArray .length   is true
        this .pandaArray [ someIndex ]   setPaint   GREEN   add detail

    loop
```

Class Today

- Array of penguins

That is every other penguin in the array