

CompSci 94

Arrays, Loops with Arrays

October 25, 2022



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Announcements

- QZ and Videos for next time
- Assignment 4 out today, due Tue, Nov 8
- Exam 2 Tue. Nov 1
 - See old tests on calendar page

Exam 2 Logistics

- Exam 2 is on Tuesday, Nov 1
- Covers topics through today, Oct 25 lecture
- Old tests are on the calendar web page
- Will put up old Sakai quizzes on Thursday
- Exam 2 is on paper
- See Exam 2 reference sheet – part of exam
- Exam 2 is your own work
- Bring only pen or pencil

Exam 2 Topics

- Topics from last time (random num, procedures with parameters, etc)
- if statements, logic (and, or, not)
- count loops, constant variables, Saving objects
- while loops
- Arrays, as a variable
- Scene procedure

How to study for Exam 2

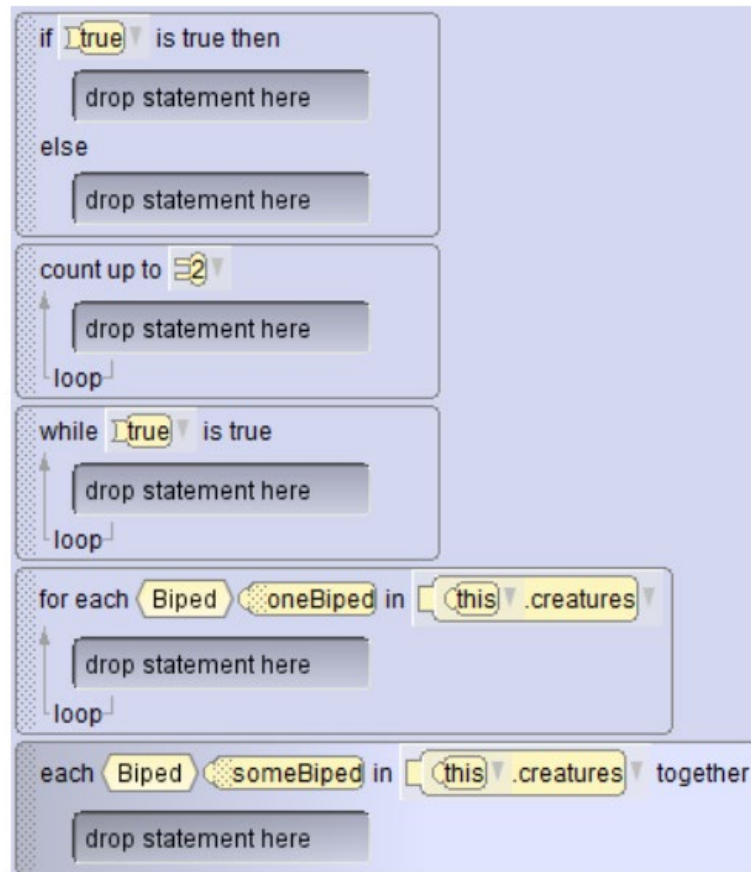
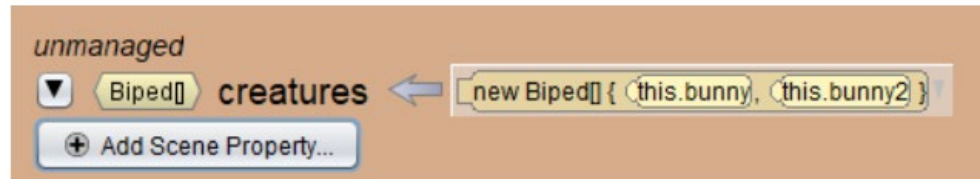
- You should practice writing code on paper!
 - Redo procedures we did in classwork or lecture
 - Start with blank sheet of paper and write code
- See old tests on course calendar page on 11/1 date
- Arrays – only understanding how to put them together and the two loops how they work

Review Randomness

- How do you generate a random number?
- How do you store a random number?
- How do you use a random number?
- What other type of random can you create?

If statement, loops and more

If, loops, and creating an array element.



if statement condition choices

Given below are the condition possibilities for an if statement

if **true** is true then

- true** (current value)
- false**
- nextRandomBoolean
- NOT **true**
- NOT ???
- BOTH **true** AND ???
- EITHER **true** OR ???
- BOTH ??? AND ???
- EITHER ??? OR ???
- Relational (DecimalNumber) { ==, !=, <, <=, >=, > }
- Relational (WholeNumber) { ==, !=, <, <=, >=, > }
- Relational (SThing) { ==, != }
- Relational (MoveDirection) { ==, != }
- Relational (TurnDirection) { ==, != }
- Relational (RollDirection) { ==, != }
- Relational (Key) { ==, != }
- Relational (Color) { ==, != }
- Relational (Paint) { ==, != }
- TextString Comparison

Callout 1 (Comparison Operators):

- ??? < ???
- ??? <= ???
- ??? > ???
- ??? >= ???
- ??? == ???
- ??? != ???

Callout 2 (Equality Operators):

- ??? == ???
- ??? != ???

Callout 3 (String Methods):

- ??? contentEquals ???
- ??? equalsIgnoreCase ???
- ??? startsWith ???
- ??? endsWith ???
- ??? contains ???

Looping structures - when and how to use each one

- Count loop

- While loop

Now for today's topic - Arrays

How and Where does one create an array?

Result

```
unmanaged  
▼ Flyer[] lotsOfBirds ← new Flyer[] { this.phoenix, this.chicken, this.flamingo, this.penguin, this.ostrich }
```

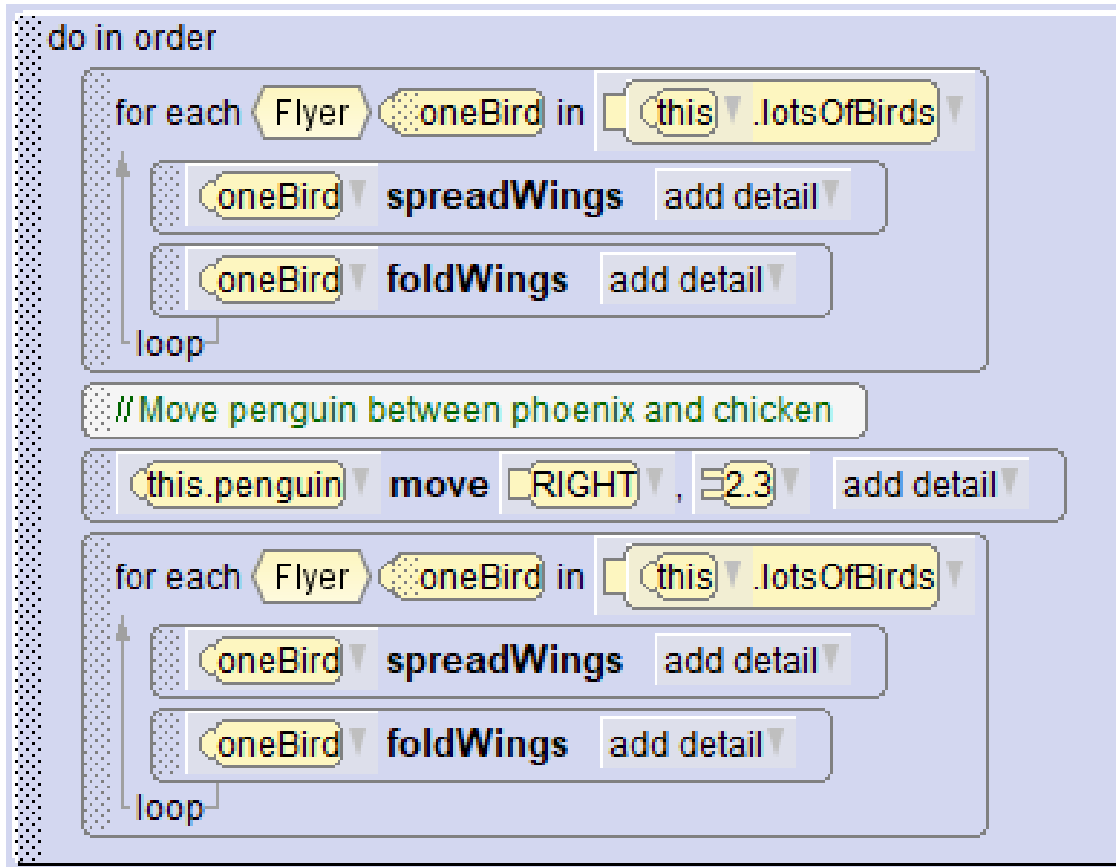


Q1. Arrays

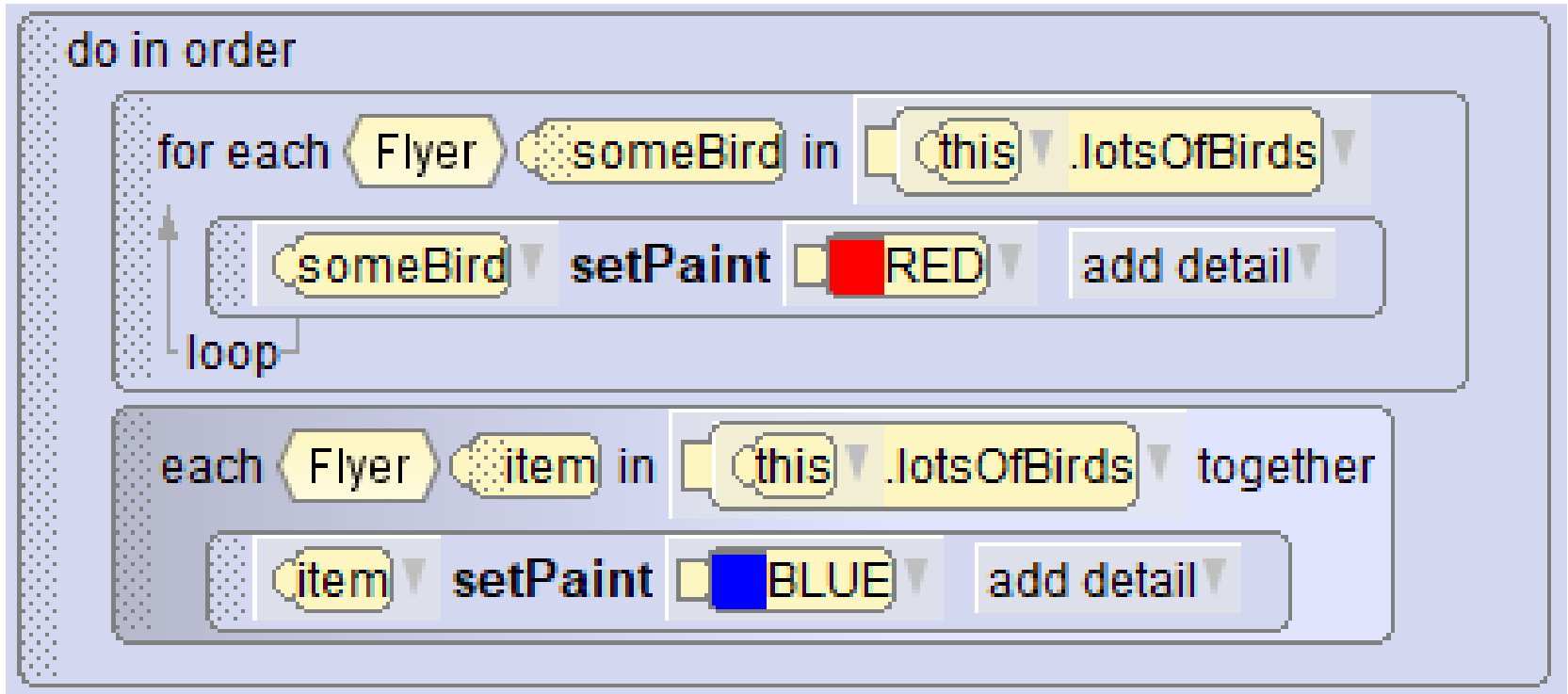
- What is an array?
- Why create an array?
- Can an object be in more than one array?

Q2. What is the order the birds do something here?

lotsOfBirds ← new Flyer[] { this.phoenix, this.chicken, this.flamingo, this.penguin, this.ostrich }



Q3. What does this code do?



Q4. What does this code do?

```
TextString[] greetings ← new TextString[] { "How are you today?", "Welcome", "Nice to see you." }
```

do in order

```
for each TextString saying in this.greetings
```

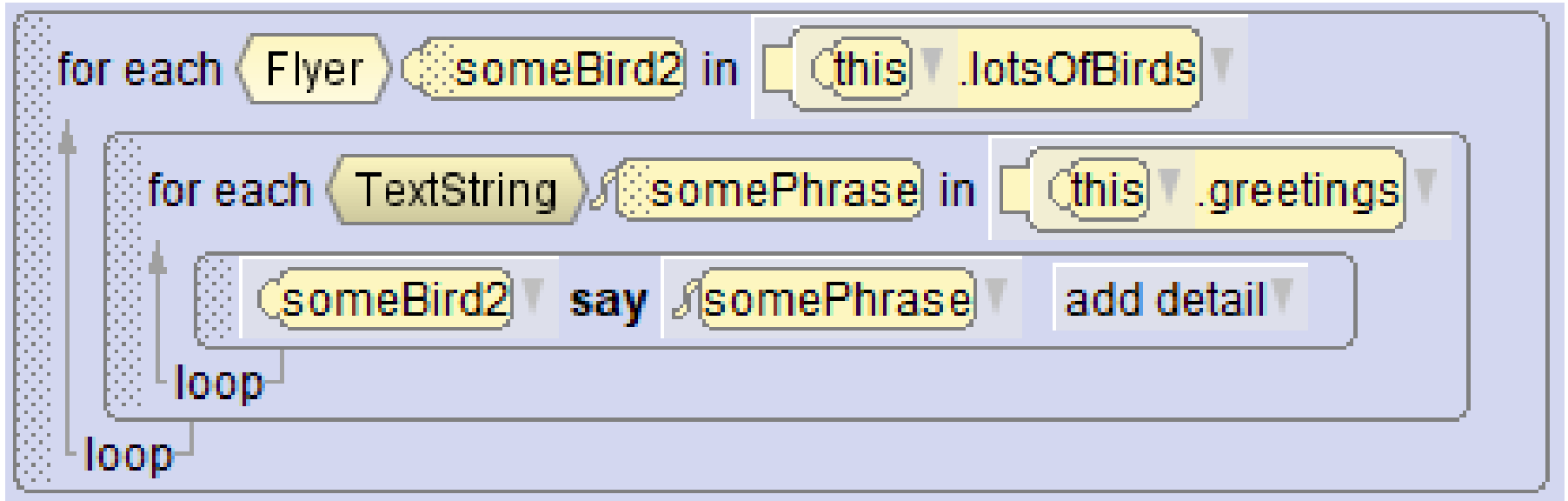
```
  this.phoenix say saying add detail
```

loop

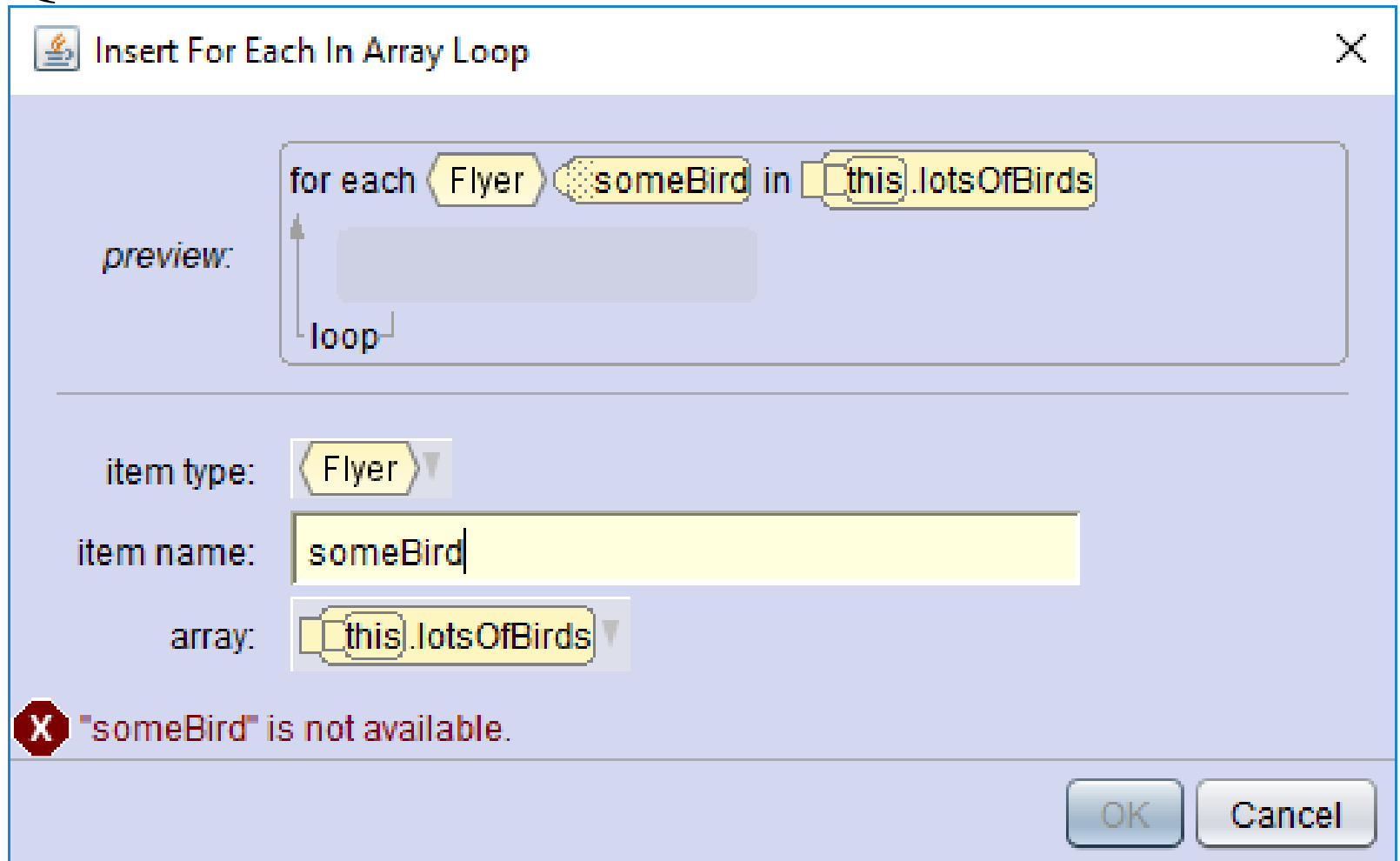
```
each TextString phrase in this.greetings together
```

```
  this.penguin say phrase add detail
```


Q5. What does this code do?



Q6. What does this error mean?



The screenshot shows a dialog box titled "Insert For Each In Array Loop" with a close button (X) in the top right corner. The dialog is divided into several sections:

- preview:** A preview window showing the code: `for each Flyer someBird in this.lotsOfBirds`. A grey rectangular area below the code is highlighted, and a bracket labeled "loop" is positioned below it.
- item type:** A dropdown menu set to "Flyer".
- item name:** A text input field containing "someBird".
- array:** A dropdown menu set to "this.lotsOfBirds".

At the bottom left of the dialog, there is a red error icon (an X inside a hexagon) followed by the text: **"someBird" is not available.** A black arrow points from the left edge of the slide towards this error message.

At the bottom right of the dialog, there are two buttons: "OK" and "Cancel".

BE CAREFUL!

- When naming loop variable
- Don't CUT and PASTE ARRAY LOOP code

Class Today

- Iterating through Arrays

