

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.

The screenshot shows a programming environment with an array named 'creatures' of type 'Biped[]'. The array contains two elements: 'new Biped[] { (this.bunny), (this.bunny2) }'. Below the array, there are several control flow blocks:

- An 'if' statement block with 'true' as the condition and 'drop statement here' as the body.
- An 'else' block with 'drop statement here' as the body.
- A 'count up to' block with '2' as the limit and 'drop statement here' as the body.
- A 'while' loop block with 'true' as the condition and 'drop statement here' as the body.
- A 'for each' loop block with 'oneBiped' as the loop variable and 'this.creatures' as the collection.
- An 'each' loop block with 'someBiped' as the loop variable and 'this.creatures' as the collection.

if statement condition choices

Given below are the condition possibilities for an if statement

The screenshot shows a list of condition possibilities for an if statement. The list includes:

- Boolean literals: true, false
- Logical operators: nextRandomBoolean, NOT, BOTH, EITHER
- Relational operators: Relational (DecimalNumber), Relational (WholeNumber), Relational (SThing), Relational (MoveDirection), Relational (TurnDirection), Relational (RollDirection), Relational (Key), Relational (Color), Relational (Paint), TextString Comparison
- Comparison operators: <, <=, >, >=, ==, !=, 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

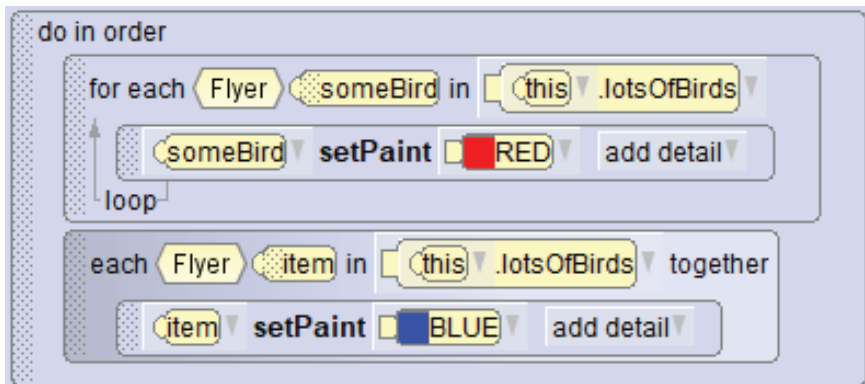
- What is an array?
- Why create an array?
- Can an object be in more than one array?

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

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

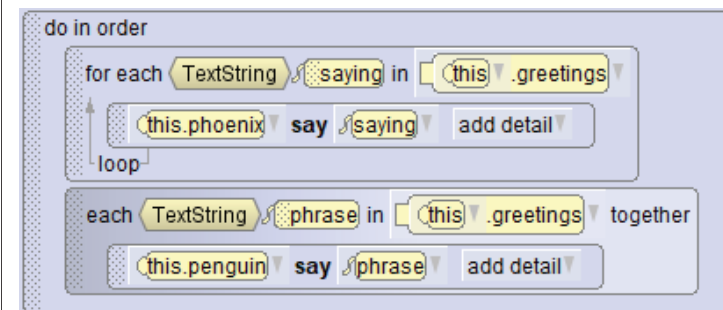


Q3. What does this code do?

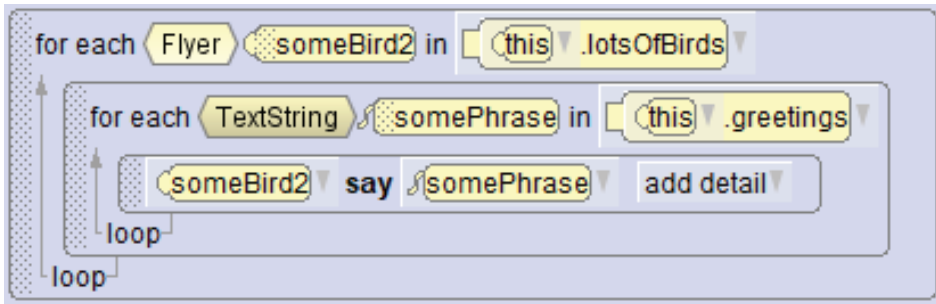


Q4. What does this code do?

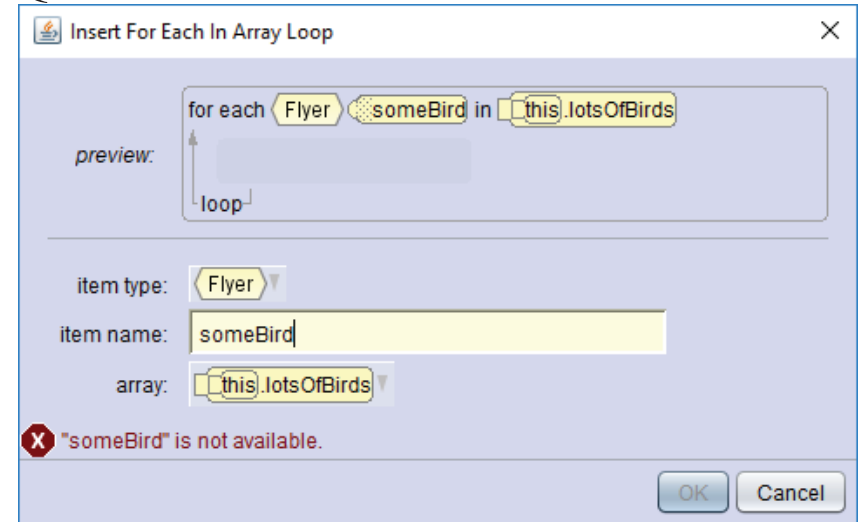
TextString[] greetings ← new TextString[] { ("How are you today?", ("Welcome", ("Nice to see you."))) }



Q5. What does this code do?



Q6. What does this error mean?



BE CAREFUL!

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

Class Today

- Iterating through Arrays

