Module 10
Iteration

Lecture
For Loops: Dead Teddies

Module 10 Learning Objectives

Bloom Level	Number	Name	Description	Course Learning Objectives
2: Understand	1	For vs Foreach Loops	Describe when to use a for loop instead of a foreach loop	Basic Programming Concepts
3: Apply	2	For Loops	Develop a console application that uses a for loop to do something repeatedly	Basic Programming Concepts
3: Apply	3	Foreach Loops	Develop a console application that uses a foreach loop to iterate over an array or collection	Basic Programming Concepts
2: Understand	4	While vs For/Foreach Loops	Describe when to use a while loop instead of a for/foreach loop	Basic Programming Concepts
3: Apply	5	While Loops	Develop a console application that uses a while loop	Basic Programming Concepts
3: Apply	6	Looping in XNA	Develop an XNA game that uses for and while loops	Basic XNA Concepts,Basic Programming Concepts

Last time, we discussed how we can use for loops to solve problems where we know how many times we need to loop when we reach the loop during program execution

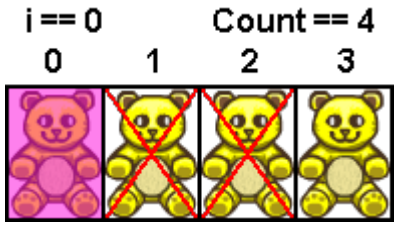
This time, we're going to look at how we can use for loops for a standard problem in game development

- What’s the problem?
- Teddy bears don’t “live” forever!
- If we don’t remove dead teddy bears from our list of game objects, we waste time updating and drawing them every frame
- This obviously applies to all game entities, not just teddy bears

In-Lecture Quiz

Using a for loop that moves from the beginning to the end of our list to remove dead teddy bears would be

- A: what I'm used to
- B: what it's like
- C: madness
- D: pure light and joy


i == 0
Count == 4
0
1
2
3

i == 0 Count == 4

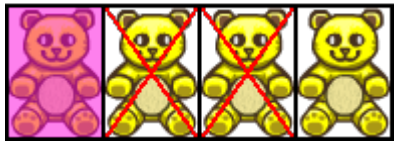
0 1 2 3

i == 1 Count == 4

0 1 2 3

i == 0 Count == 4

0 1 2 3



i == 1 Count == 4

0 1 2 3

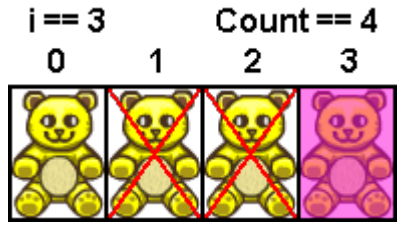
i == 2 Count == 3

0 1 2

In-Lecture Quiz

Using a for loop that moves from the end to the beginning of our list to remove dead teddy bears would be

- A: right
- B: correct
- C: smart
- D: don’t pick this answer for any reason


i == 3
Count == 4
0
1
2
3

i == 3 Count == 4

0 1 2 3

i == 2 Count == 4

0 1 2 3

i == 3 Count == 4

0 1 2 3

i == 2 Count == 4

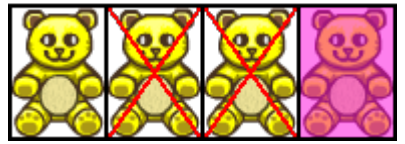
0 1 2 3

i == 1 Count == 3

0 1 2

i == 3 Count == 4

0 1 2 3



i == 2 Count == 4

0 1 2 3

i == 1 Count == 3

0 1 2

i == 0 Count == 2

0 1

- Recap
  - We learned how we can use a for loop to move backwards through a list to remove dead teddy bears
- Next Time
  - We'll learn about the foreach loop, another way to iterate over arrays and collections