Module 10
Iteration

Lecture
For Loops: The Basics

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

In this module, we'll talk about the last control structure we need to solve virtually any problem – iteration

Remember, we've already covered the sequence control structure, where statements are executed in sequence, and the selection control structure, where we select which statements will be executed based on some condition

The iteration control structure (sometimes called looping) lets us execute statements multiple times

In-Lecture Quiz

When we know how many times we'll need to iterate when we get to a loop during execution of our program, we should use a

- A: fruit loop
- B: sample loop
- C: for or foreach loop
- D: n00b l00p

- When we know how many times to loop
  - for loop
  - foreach loop
- For loop for the next couple lectures, then foreach loop
- In a few lectures, we'll cover how to loop when we don't know how many times we'll be looping beforehand

In-Lecture Quiz

In the statement

```
for (int i = 0; i < entities.Count; i++)
```

the `i` is called

- A: the loop control variable
- B: the volume control knob
- C: I’m a knob
- D: the part I can’t remember the name of

In-Lecture Quiz

In the statement

```
for (int i = 0; i < entities.Count; i++)
```

the `i < entities.Count` part is called the

- A: Boolean part
- B: tester
- C: middle part
- D: condition

In-Lecture Quiz

In the statement

```
for (int i = 0; i < entities.Count; i++)
```

the `i++` part is called the

- A: carburetor
- B: investigator
- C: modifier
- D: thing at the end

In-Lecture Quiz

The loop body for the following for loop will execute exactly 10 times:

- A: `for (int i = 0; i < 10; i++)`
- B: `for (int i = 1; i <= 10; i++)`
- C: `for (int i = 10; i <= 100; i += 10)`
- D: `if (name == “doofus”)`

- Recap
  - We learned how we can execute a set of statements – the loop body – a certain number of times
- Next Time
  - We'll have to deal with dead teddy bears