**Competencies**

Enumeration or counted loops,

Stepping through a collection class one object at a time

Definite loops,

A loop that the number of iterations is known before the loop begins

Count prediction,

Code that predicts the size of the loop to make code faster by having no test in the loop

Bound computation,

Floating point counts

Conditional loops,

loops controlled by a conditional statment

indefinite loops,

a loop that does not execute a known number of times Instead executes until some condition is satisfied

pre-test and post-test

Iterators

foreach statement

implicity invokes the iterator w/o the programmer having to call iterator methods

True iterators and yield statements versus iterator objects

Yield Statements

behaves like a return but return control before iterator where it left off

Their key limitation is the

need to maintain all intermediate state in the form of explicit data structures,

rather than in the program counter and local variables of a resumable execution

context

### **Topics**

enumeration or counted loops, definite loops, count prediction, bound computation, floating point counts

conditional loops, indefinite loops, pre-test and post-test

while versus until loops

combination loops

mid-test loops

test the terminating condition in the middle of the loop. This is accomplished with a special statement nested inside a conditional

C and Java style for loops

Iterators

foreach statement

true iterators  and yield statements versus iterator objects

Generators,

Functions that use a yield statement to return a value.

Does not terminate after it yields a value

yield statement,

C# iterator method (continuations)

performs a custom iteration over a collection. Uses the yield statement to return each element one at a time.

List comprehension - Python feature that uses a for each command and a generator to dynamically build lists.