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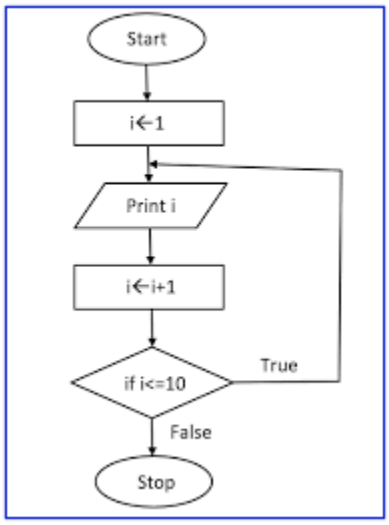
CPE11S1/PLD-007

Loop Structure

The **loop structure** is shown in the figure. A loop continues to repeat actions while a condition remains true. The action or actions that occur within the loop are the **loop body**. In the most common type of loop, a condition is evaluated; if the answer is true, you execute the loop body and evaluate the condition again. If the condition is still true, you execute the loop body again and then reevaluate the condition. This continues until the condition becomes false, and then you exit the loop structure.



Programmers call this structure a **while loop**; pseudocode that describes this type of loop starts with while and ends with the end-structure statement endwhile. A flowchart that describes the while loop structure always begins with a decision symbol that has a branch that returns to a spot prior to the decision. You may hear programmers refer to looping as **repetition** or **iteration**.

Pseudocode Instructure:

Step 1: Start

Step 2:i=1

Step 3: While i <= 10

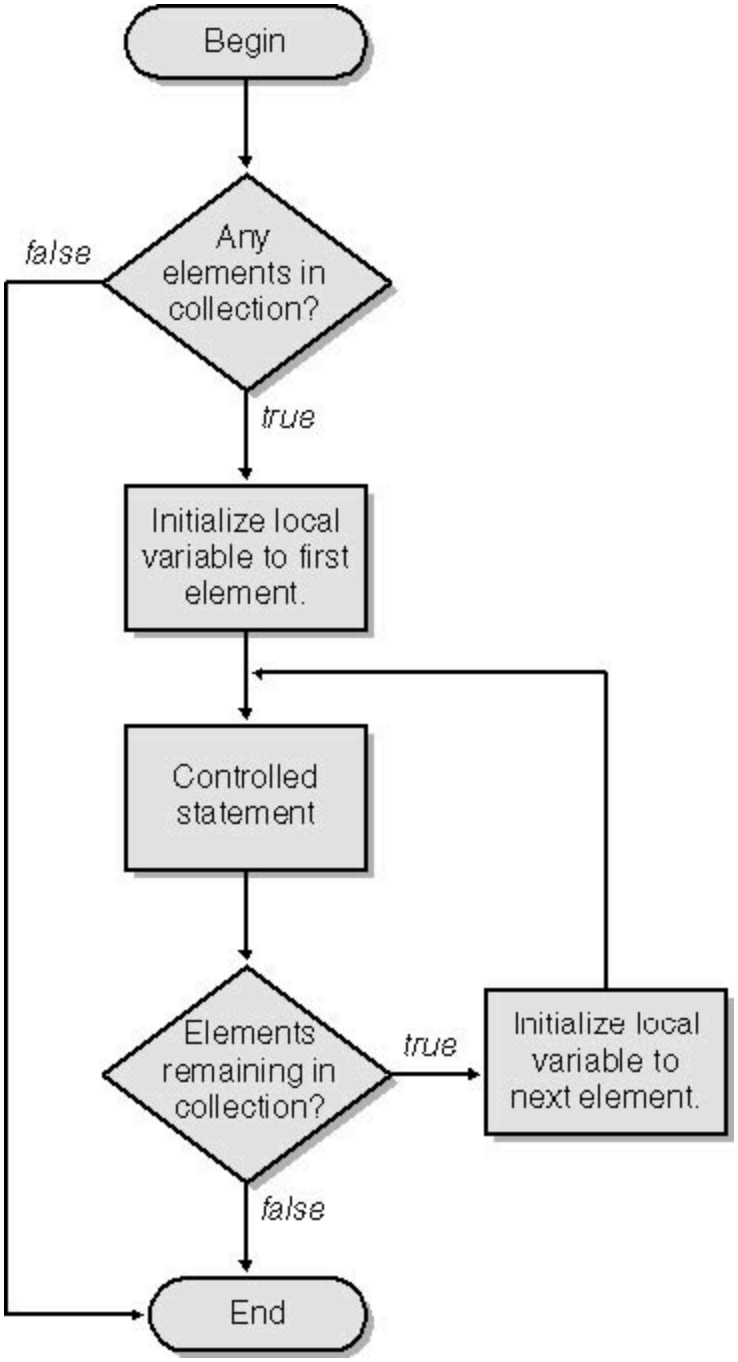
Step 4: print i

Step 5: i = i +1

Step 6: End/Stop

Combining Structures

All logic problems can be solved using only these three structures—sequence, selection, and loop. The structures can be combined in an infinite number of ways. For example, you can have a sequence of tasks followed by a selection, or a loop followed by a sequence. Attaching structures end to end is called stacking structures. For example, the figure shows a structured flowchart achieved by stacking structures, and shows pseudocode that follows the flowchart logic.



Pseudocode Instructure:

Step 1: Start

Step 2: If there are elements in the collection then

Step 3: Set item to first element

Step 4: While there are more elements

Step 5: Do something with the current item

Step 6: Move to next element

Step 7: End the loop when all elements processed

Step 8: Stop

Honor Pledge:

“I affirm that I have not given or received any unauthorized help on this assignment, and that this work is my own.”