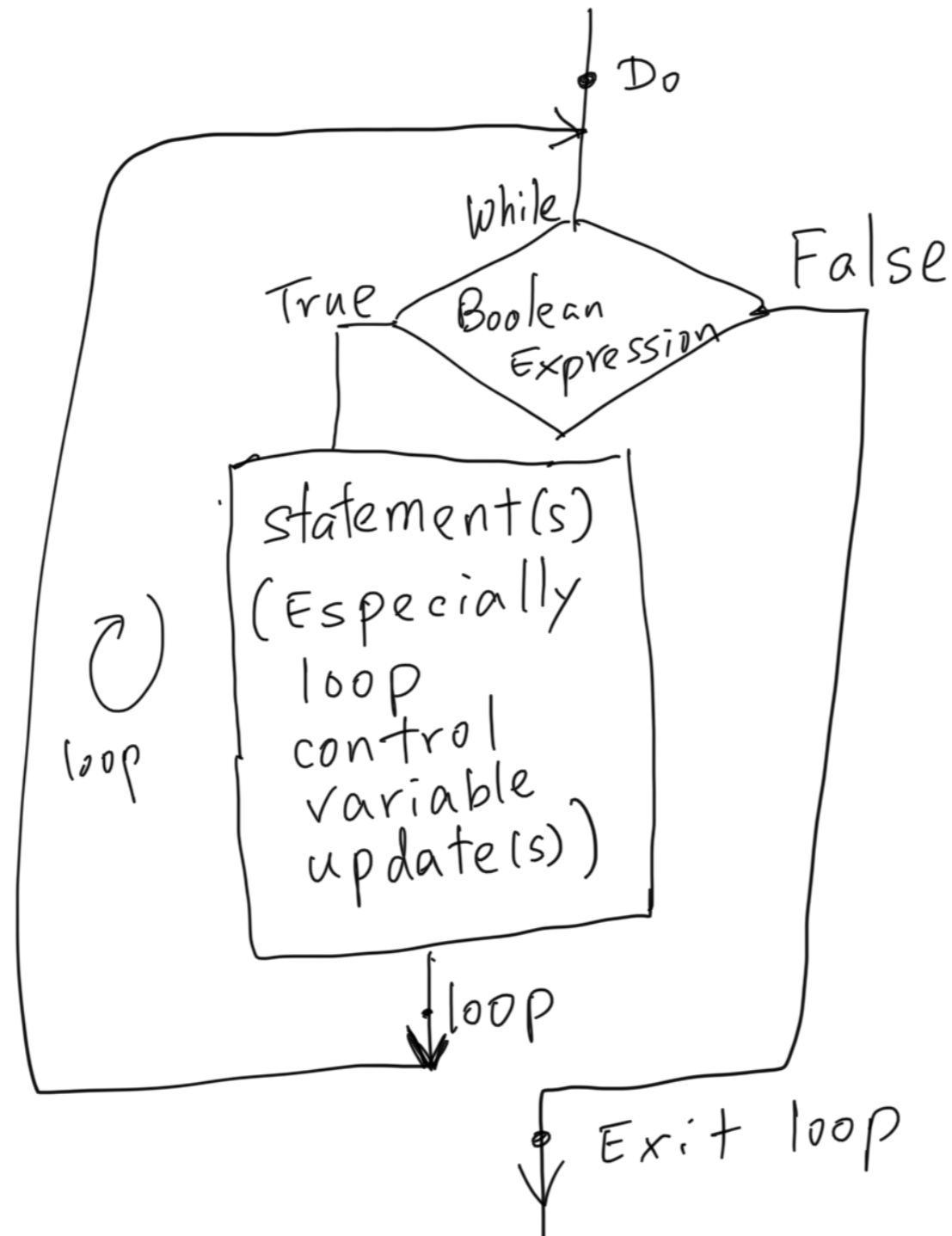# Applications Programming

Repetition (Loop) Statement - 2

Do-While-Loop Statement

- Syntax:
  Do While Boolean_Expression
     statement
     (more statements maybe)
     (update loop control variable)
  Loop

- Do NOT forget to update the loop control variable inside the loop.

- Semantically, execute the loop body if the boolean expression is still evaluated to be true
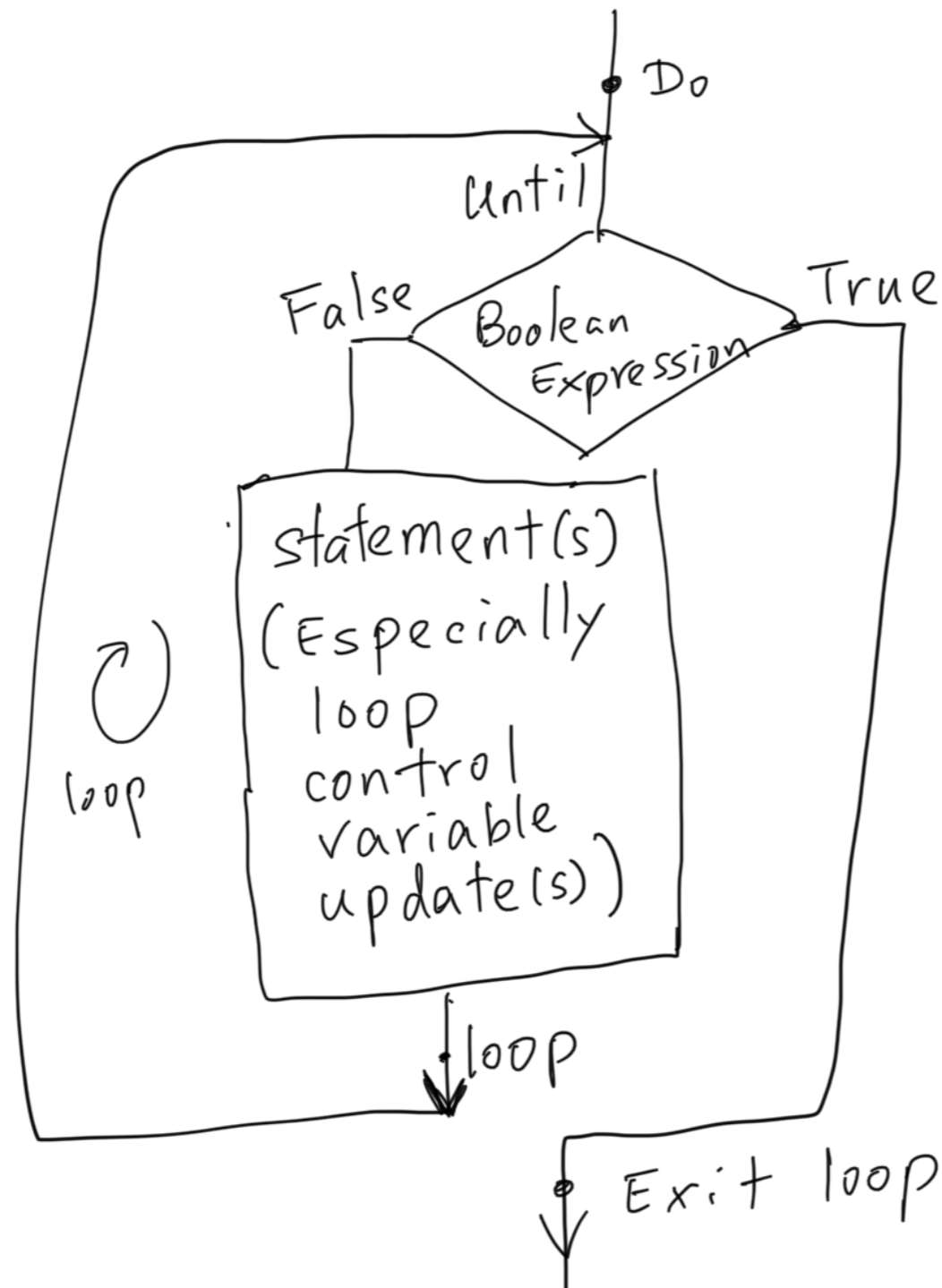
Control Flow Graph

Do-Until-Loop Statement

- Syntax:
  Do Until Boolean_Expression
      statement
      (more statements maybe)
      (update loop control variable)
  Loop

- Do NOT forget to update the loop control variable inside the loop.

- Semantically, execute the loop body if the boolean expression is still evaluated to be false. In other words, stop the loop when the boolean condition becomes true.
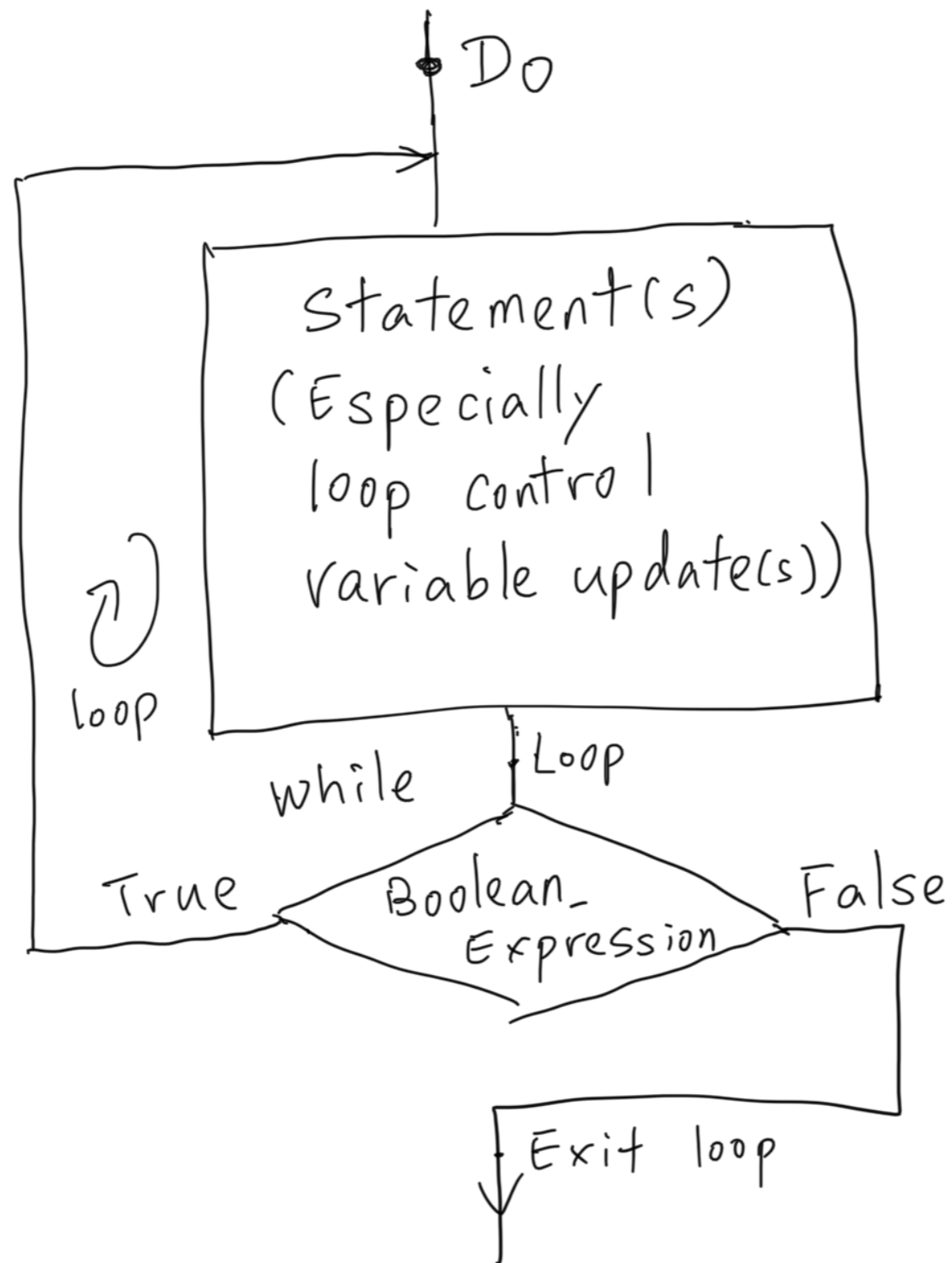
Control Flow Graph

Do-Loop-While Statement

- Syntax:
  Do
      statement
      (more statements maybe)
      (update loop control variable)
  Loop While Boolean_Expression

- Do NOT forget to update the loop control variable inside the loop.

- Semantically, execute the loop body, then test the boolean expression, if it is true, keep looping.

Control Flow Graph

Do-Loop-Until Statement

- Syntax:
  Do
     statement
     (more statements maybe)
     (update loop control variable)
  Loop Until Boolean_expression

- Do NOT forget to update the loop control variable inside the loop.

- Semantically, execute the loop body, then test the boolean expression, if it is true, stop the loop.

Loop Statement Types

- Fixed Repetition vs Variable Conditioned

  - Fixed Repetition: For-Next

  - Variable Conditioned: Do family

- Pre-testing vs Post-testing

  - Pre-testing: For-Next, Do-While-Loop, Do-Until-Loop

  - Post-testing: Do-Loop-While, Do-Loop-Until