



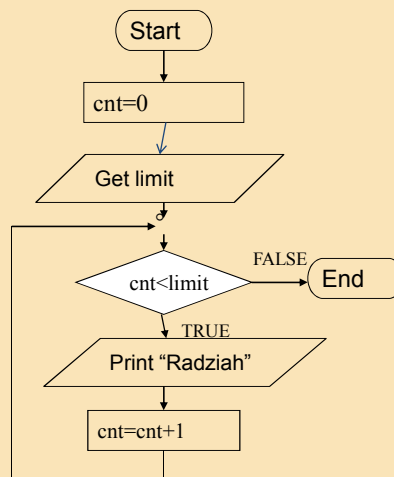
Repetition Structure - Letting the User Control a Loop

- Program can be written so that user input determines loop repetition
- Used when program processes a list of items, and user knows the number of items
- User is prompted before loop. Their input is used to control number of repetitions

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Repetition Structure (*cont..*)



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Repetition Structure - Sentinels

- sentinel: value in a list of values that indicates end of data
- Special value that cannot be confused with a valid value, *e.g., -999 for a test score*
- Used to terminate input when user may not know how many values will be entered

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Repetition Structure - Sentinels

Algorithm 3.3: Loop control by sentinel value

1. Start
2. Set repeat = 1
3. while (repeat == 1)
 - 3.1 Read no1
 - 3.2 Read no2
 - 3.4 Print no1 + no2
 - 3.5 Read repeat
4. end_while
5. End

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In-Class Exercise 1

- Lab 3, Exercise 2, No. 3 (pg. 39)
 - Identify the **sentinel value**

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In-Class Exercise 2

- Trace the following pseudo code:
 1. Start
 2. Set product = 1, number = 1, count = 20
 3. Calculate: lastNumber = $2 * \text{count} - 1$
 4. while (number <= lastNumber)
 1. Product = product * number
 2. Number = number + 2
 5. End_While
 6. Display product

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In-Class Exercise 3

- Convert the pseudo code in In-Class Exercise 2 to its flow chart
- Convert the while loop in In-Class Exercise 2 to do..while loop.
- Draw its respective flow chart.

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In-Class Exercise 4

- Bina Education Sdn. Bhd. wants you to develop a program for finding experience teachers for its offered course. Your program will request name and number of years teaching from the applicants. To be accepted as the teacher, the applicant must have at least 8 years of teaching experience. Your program will display list of successful applicants' names, numbers of successful applicants and average of numbers of years of teaching experience of successful applicants. Your program will terminate when the name input is "OK".

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