Class 06

While Loops to Repeat an Action
Repeated Decisions - Loops

**while** (true/false question) {

    *statement(s)*; // executes repeatedly as long as question is true

}  

*If question is true, statement executes repeatedly until the question becomes false*
Making Decisions – If vs. While

Figure: Flowchart of if Statement

Figure: Flowchart of while Loop
Formulating Conditions

• Translate human question into computer code
• Examples given integers x, y and z:
  • Is x even?
  • Are x and y both even?
  • Are any of x, y or z odd?
Some Applications of Loops

• Validate input
  • Force the user to enter input of a required type
• Allow the user a certain number of attempts to enter data
  • Loop until the user enters a correct value or they run out of tries
• Receive unbounded number of input values from user
  • User enters values until they signal they are finished
Examples

1. Force the user to enter a number divisible by 5.
2. Say “Hello” ten times.
3. Give the user three tries to enter a number that is a multiple of 13 before terminating the program.
4. Add up all numbers entered by a user until they enter a 0.
5. Compute the average of all non-zero numbers entered by a user.