

# **EGR 262**

## **Fundamental Circuits Lab**

**Presentation for Lab #7**

**Analog-to-Digital Conversion - Software**

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Lab #6 developed the hardware for an A/D converter. Lab #7 will complete the A/D converter by adding software that will make a series of guesses in order to determine the binary value that represents the analog input.

### Guessing Game

Consider the following game. The instructor will pick a number from 0 to 100. You try to guess the number as quickly as possible.

Strategy: Each time guess as closely as possible to the midpoint of the remaining range after each guess.

Example: Let's try it (instructor writes a number on the board behind the screen).

Guess	Larger or smaller?

Now let's modify the game to use binary values. We can guess an N-bit number using N guesses. For example, a 4-bit number can be guessed using 4 guesses. Example: Try using the flowchart for: Value = 3

**Flowchart – Guessing Game with Binary Values**

