EECS10 Discussion Week4

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Formatted output

- Detailed formatting sequence for integral values
  - *% flags width length conversion*

- Detailed formatting sequence for floating-point values
  - *% flags width precision length conversion*

- Please check lecture 7 slide 5-7 for details.

Structured Programming

- Sequential execution

- Selection
    - **if**
    - **if else**
    - **switch**

- Repetition
    - **while**
    - **do while**
    - **for**

- And no usage of arbitrary jumps (**goto**)

Spaghetti Code

intellyx.com

Programming == Thinking

- Programming …
    - … is not a mechanical procedure!
    - … requires thinking!

- Program
    - … writing requires an intelligent human being!
    - … execution can be done by a dumb machine.

- General programming steps:
    - 1. Understand the problem
    - 2. Define the input and output data
    - 3. Develop the algorithm (and specify it in psudocode)
    - 4. Define the control flow
    - 5. Write the program in programming language
    - 6. Build, test and debug

Programming Tips

- Use simple examples to help you coming up with a solution
- Use simple words to describe the steps of your solution
- Map the steps to the programming constructs
- Consider corner cases and refine your algorithm
- Think simple!
- Be curious!
- Ask yourself why?

Programmers while coding...

It doesn't work...... why?

It works.......   why?

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Assignment 5 Part 1

- Monte Carlo Calculation of Pi
  - Use rand() function to generate multiple random points
  - Use a fixed seed to generate same series of random numbers
- Let's now do some coding by writing a program to generate multiple double precision floating pointer numbers in the range [0,x]

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Assignment 5 Part 2

- Square Root Approximation
    - Use long double for all variables to achieve the required precision
- Bonus part: Calculate nth root of any positive integer

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