Week 6 - Student Led Review

Reminder - the best place to learn MATLAB (or anything, really) is the internet! StackOverflow and MathWorks' own MATLAB Exchange are filled to the brim with people asking and answering questions about MATLAB. MATLAB's own documentation is also extensive and extremely helpful. It includes descriptions of how to call functions as well as usage examples.

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Return to Lectures

Student Questions

Allow students to ask questions about their own work or previous lessons, and encourage other students to answer them. If no students answer, instructors may then answer.

Review Questions

Instructors can use the below questions to test the students' understanding.

- Give an example of an anonymous numeric function.
  - *func = @(x) x + 3;*
- How do you define new symbols in MATLAB?
  - *syms*
- What is the difference between symbolic and numeric pi?
  - Numeric pi is an approximation, symbolic pi is pi

  Which is *generally* faster, symbolic or numeric computation?
  - Numeric

  If I have already called *syms x*, how do I define the cosine function symbolically?
  - func = cos(x);
- What function do I use to transfer a symbolic function to a numeric one?
  - *matlabFunction*
- How do I convert a symbolic scalar to a numeric one?
  - *double*

  What does it mean when a function uses the ***./*** operator?
  - It supports element-wise matrix division
- If I need to take the partial derivative of a function, should I define it numerically or symbolically?
  - Symbolically

  Write an anonymous functions which calls another function named *mystery* and multiples it by *y*. Pass a value through to *mystery*, but divide it by two before passing.
  - function = @(mystery_value,y) mystery(mystery_value / 2) * y;
- Pick an appropriate name for the van Der Waals Equation of State is it defined symbolically.
  - *sym_VDW*, *VDW_symbolic*, etc.
- Which functions do you use to calculate symbolic and numeric integrals in MATLAB?
  - *int* and *integral*, respectively

  vpa or variable precision algebra is essentially a black-box implementation of what technique?
  - Iterative solving
- What should you write before syntactically correct code in order to solidify your concept of the workflow?
  - Pseudocode
- When solving with iteration, should we use Numeric or Symbolic functions?
  - Numeric