CS122 Engineering Computation Lab
Lab 1

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Welcome Back to CS122

• Goals and objectives for this term – by the end of this term, students should be able to:
  
  – Create code from specifications (beyond “copy the example provided”)
  
  – Work with longer code segments (code edit regions) with emphasis on troubleshooting / debugging
CS122 – Basic Schedule

• 4 labs in even numbered weeks (2, 4, 6 and 8)
• 4 quizzes odd numbered weeks (3, 5, 7 and 9)
• 4 pre-lab quizlets in weeks (2, 3, 5 and 7)
• Proficiency Exam in week 10
• Flow of course similar to CS121
• Be sure to review contents of course web site for details
  – www.cs.drexel.edu/complab/cs122/winter2010
What’s New in CS122?

• Different focus for Chat sessions
  – More of a demo based presentation
  – Will still be publishing hint sheets for most challenging quiz problems

• Additional (new) consultation activity
  – Tim Cheeseman and Dan De Sousa will coordinate
  – Will be held in odd weeks
  – By invitation, based initially on cs121 Fall term performance
  – Selected students will be contacted by end of week 2 via email
  – Details to follow in upcoming email
Administrative Notes

• Please contact your individual instructors with questions and problems
• CLC (room 147 UC) will be staffed at same times as for cs121 in Fall (odd weeks – starting week 3)
• Missed work policies – same as in cs121
  – Makeup labs to be held on Monday at 6 PM (odd weeks). Must receive explicit approval from your instructor in order to attend!
  • Lab 1 makeup is on Tuesday (1/19) due to MLK holiday
  – Makeup quiz offered (30% penalty) – Thursday through Sunday after completion of regular quiz
  – No makeup quizlets
• Pre-Lab 1 quizlet – unusual schedule
  – Due on Friday, 1/15
  – All others on Thursday to Monday (8 AM) cycle prior to lab
Lab 1 Overview

• Based on materials from Chapter 9 readings

  – Development of longer scripts using Maple’s Code Edit Region feature and “outline” approach
    • The code edit region enables us to create and execute a series of Maple actions at once in “development friendly” environment
      – Utilizes the execution trace feature
      – Facilitates step by step troubleshooting / debugging
  
  – Use of print, printf and sprintf functions to enhance display of script information and results
    • print – basic text and variable output
    • printf – formatted, more user controlled output
    • sprintf – creates output as a string for downstream usage
  
  – Code troubleshooting / debugging techniques
Lab 1 Overview

• Lab 1 outline
  – Part 1 – design and implement a user defined function from specifications
  – Part 2 – working with code edit regions
    • A. execute a code edit region obtained from a starter file that simulates Blammo’s flight trajectory
    • B. Revise this script to produce a result in metric units
    • C. Suppress intermediate result traces for 1.B script
  – Part 3 – adding wind resistance calculations to the Blammo script
    • A. Revise script from Part 2.B to incorporate impact of wind resistance
    • B. From a starter file outline, create a script in a code edit region to compute and compare the flight trajectories with and without wind resistance
    • C. Use the script from 3.B to analyze the impact of Blammo’s weight on the comparison
Lab 1 Maple Concepts: Discussion and Demo

• Working with Maple’s Code Edit Region – logistics and demo
  – 1. open a Maple worksheet
  – 2. create a code edit region
    • Insert -> Code Edit Region
  – 3. change size of region
    • Right click -> Component Properties -> change to 800 x 800 pixels
  – 4. enter some code
    • A:=6;
    • B:=8;
    • C:=sqrt(A^2+B^2);
    • print(A,B,C);
Lab 1 Maple Concepts: Discussion and Demo

• Working with Maple’s Code Edit Region – logistics and demo - continued
  – 5. execute the code edit region – ctrl + E
    • Note results – print versus execution trace
  – 6. Collapse the code edit region
    • Right click within region -> Collapse Code Edit Region
  – 7. Execute code from collapsed region – 2 click on icon
  – 8. Expand the region again
    • Right click -> Expand code edit region
  – End of Demo
Lab 1 Maple Concepts: Discussion and Demo

- Demo of other Maple features needed for this lab

  - Open the Maple worksheet demo file form the course web site
    - CS122Lab1Demo.mw
  - The following concepts are illustrated
    - User defined functions – creation and invocation
    - Multiple graph plotting syntax
    - Print option syntax – print, printf and sprintf
    - Troubleshooting within code edit regions - example
Quiz Week (3) Activities

• Don’t forget to take the pre-lab 1 quizlet during this week (available until 1/15 (5 PM)— even if you have already taken lab)

• Quiz 1 will be released on Friday (1/15) at 6 PM
  – Deadline: Wednesday (1/20) at 4:30 PM
  – Makeup quiz – from Thursday (1/21) at 9 AM through Sunday (1/24) at 11:30 PM
    • 30% penalty

• Pre-lab 2 quizlet
  – From Thursday (1/21 – 9 AM) through Monday (1/25 – 8 AM)

• Be sure to visit the CLC for quiz assistance

• Be on alert for information regarding Chat and extra consultation initiatives