Computer Programming 2

Course Administration
Course Motivation
Course Overview

Course Administration

- Lectures
  - Instructor-in-charge
    - Murali P, I/C (Email: muralip)
    - Chamber: 1140-G
  - Instructors
    - Dinesh Kumar Tyagi
    - Kiran DC
    - Mayuri N Rajurwar
    - Nirmal Kr Gupta
    - SP Vimal

    Sunita Bansal
    Vandana Agarwal
    Vishal Gupta
    Yashwardhan Sharma
    Murali P
  - Focus on the Program Design process, concepts, and illustrative examples.
  - Course website: http://csis/faculty/murali/cp2/

Course Administration

- **Practice**
  - **Students will be given a set of exercises at the end of every topic**
  - **Students are expected to practice C programming on their own.**

Self learning requirements

- Class work will require further exploration by students

Course Administration

- Evaluation
  - Written test: 15% (CLOSED) [12/Sept]
  - Online test1: 25% (OPEN) [11/Oct]
  - Online test2: 25% (OPEN) [8/Nov]
  - Comprehensive Exam. – 35% (CLOSED) [2/Dec]
  - Open book components – only books allowed
- Make-Up for online tests
  - at most ONE Makeup is allowed.
  - Only one makeup test shall be conducted
    - Syllabus for the lone makeup test shall be till whatever is covered till that day

Course Administration

- Make Up policy: (read carefully)
  - Requires prior permission or confirmation letter from the concerned ‘Warden’ in addition to other supporting documents
- Grievances:
  - Meet the I/C
- Updated handout shall be available in course website for future reference.

Course Administration – for this section

- Chamber Location
  - 1140 - G
- Chamber Consultation Hr:
  - Tuesday 9th hour (4:00 PM – 5:00 PM)
- Lecture Slides for this instructor
  - http://csis/faculty/murali/cp2/lectures/mylecs.html

Course Motivation

- Programs
- Programming
- Software Lifecycle
- Process

Program

- Definition

  A formal, unambiguous and executable specification of a solution to a problem

- Formal
  - Systematic way for deriving the solution
- Unambiguous
  - Clearly know what is done
- Executable
  - At the end of the day....
- Predictable and repeatable results
- Done in CP 1

Programming

- The process of “constructing programs”
- It is an engineering activity!
  - Limited resources (Time, Hardware and Software)
  - “Program” is the resultant product
  - Typical engineering activities apply: design, implement and test
- How do you “construct” a program?

Process

- Typical Software (Development) Process:
  - Phases
    - Requirements (Analysis & Specification)
    - Design & Design Testing
    - Development (Coding)
    - Quality Assurance (Testing)
    - Deployment
    - Maintenance
  - Teams of people

Our Process

- Personal Programming Process:
  - Single Person
    - Phases
      - Design
      - Development (Coding)
      - Testing
- Do we have to re-invent wheel every time we make a software?

Software Lifecycle

- Software is (expected to be) “re-usable”:
  - by any number of people
  - any number of times
  - for any number of purposes
  - in any number of contexts and environments
- Implication:
  - Production Process is critical

» CP2 is about introducing process

Personal Programming

- Know the problem [Basic assumption]
- Use a tried model for solving the problem
  - a.k.a Design solution systematically
  - Is there a solution for similar looking problem
    - Reuse
  - Have parts of the problem been solved
    - Reuse; Try to get solution from what we know
- Code???
- Test

What we do in CP2

- Approach
  - Get to do one method right
  - All about personal programming
  - The basic stuff
- Data-Driven Programming
  - A simple technique to solve
  - Structure of data ==> structure of code
  - Design Template
- Program Structuring
  - Easiest and most re-usable way to code
  - Good for going big

What we do in CP2

- Common methods we will end up using
  - Dynamic Storage
    - Getting it work for dynamic contents
  - Recursion
  - Non-linear Data

- In short, **CP2 = Programming kickstart**