COMP390/3/4/5
Final Year Project

Design

Prudence Wong
http://www.csc.liv.ac.uk/~comp39x/2008-09

There is an additional lecture next week
Thursday 30 October 2008

To be given by Phil Jimmieson
and Dave Shield about how to
proceed with project design &
implementation

Submission Deadlines

- Specification (10%): Wed 22.10.08 noon
- Design documentation: Fri 21.11.08 noon
- Design presentation: Mon 24.11.08 - Fri 5.12.08 (whole design stage 15%)
- Interim Report: Fri 13.2.09
- Demonstration (15%): Mon 30.3.09 - Fri 3.4.09
- Dissertation (60%): Wed 6.5.09 noon

You should make yourself available during the weeks for design presentation

Project Stages

- Four phases
  - Phase 1: Specification (3.5 weeks)
  - Phase 2: Design (4.5 weeks)
  - Phase 3: Implementation & Testing (11 weeks)
  - Phase 4: Demonstration & Dissertation (3 weeks)
Design (15% of total mark)

- Purpose
  - To record the research and analysis done
  - To detail the design of the system to be built
  - To detail the design of evaluation
- Design Documentation: due 21.11.08 noon
  - Two copies submit to Student Office
- Design Presentation: 24.11.08 – 5.12.08
  - 15 minutes including questions
  - You must make yourself available during the two weeks

Summary of Proposal

- Statement of background, aims and objectives
  - design document should be self-contained
- Highlight changes to original specification
  - what changes are needed and why?
  - justification is important
- Summary of research and analysis done so far
  - summary of what you have read, tested (e.g., technical issues)? how outcomes affect the design?
  - any analysis done? and their implications

Design Structure

- Summary of Proposal
- Design
  - Design of system
  - Design of evaluation
- Review against Plan
  - Gantt Chart showing what has been completed, progress to date & any necessary changes

Design

- Typically should include
  - description of anticipated components
  - description of data structures to be used
  - algorithms to manipulate these data structures
  - design of interfaces
  - description of evaluation of system
- Presentation gives a summary
- Documentation gives all details

How much details? Ask yourself: Will other people be able to implement the system by following your design?
System Design
- Object-oriented methodology
- Traditional design methodology
- Empirical investigation of hypothesis
- Devising new algorithms
- Others...

Example – OO design
- use-case diagram
- interaction chart
- list of objects, attributes & methods
- pseudo code of main methods
- interface design

• use cases (actions)
• actors
• association
• system boundary

• how components interact
• information flow

• and necessary data structures
• make reference to the objects listed
Example – OO design

- use-case diagram
- interaction chart
- list of objects, attributes & methods
- pseudo code of main methods
- interface design

Example – Traditional Design

- data dictionaries
- system boundary diagram
- ER diagram
- logical/physical table structure
- transaction matrix
- pseudo code of main methods
- interface design
- etc

Example – Traditional Design

- entities & relationships
- type of relationship

Example – Traditional Design

- normalisation applied?
Example – Traditional Design

- data dictionaries
- system boundary diagram
- ER diagram
- logical/physical table structure
- transaction matrix
- pseudo code of main methods
- interface design
- etc

Example – Empirical Investigation

- Expect to see these IN ADDITION
  - statement of hypotheses to be tested
  - description of test data to be used
  - experiment design: experiments to be performed, any control to be used
  - how the results will be analysed, including any statistical techniques that will be used
  - anticipated conclusions

Example – Devise New Algorithms

- Expect to see these IN ADDITION
  - description of problem to be solved
  - existing algorithms of related problem and a critical evaluation
  - approach to be used to solve the problem
  - how the new algorithms will be analysed, including mathematical and experimental analysis
  - details of mathematical/experimental analysis

system design required here

For this type of project, literature review and design of evaluation is important
Others...

- It is possible to use a combination of the above approaches
- Different projects may follow different ways
- Seek advice from your supervisor which approach best suits your project

Evaluation Design

- What criteria to evaluate system?
  - E.g., specification satisfied?
  - Number of features completed
  - User friendliness
  - Users' feedback, etc.
- How to assess these criteria?
- Who are involved in evaluation?
- What testing?
- What conclusion expected?

Resources

- Project webpage
  - http://www.csc.liv.ac.uk/~comp39x/2008-09
  - Especially guidelines for each assessment
- Research papers
- Books / Lecture Notes
  - COMP208/214/215/216, COMP201, COMP207, etc.
- The Web
- Your project supervisor

Assessments

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- Normally you will receive email from the markers the week before telling you the date/time/venue for your presentation
- You should reply to confirm recipient
- WBL project: consult Jane McQuinn for arrangement
Assessment Form

- Snapshot of the form, available at webpage

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Late Submission

- According to University standard penalties
- 5 marks deducted for each working day of lateness
- Up to a maximum of 5 working days
- Work received after 5 working days will receive a mark of 0
- For any mitigating circumstances, should contact supervisor first

Coming Lectures

- 4 lectures or more
- Introduction & Specification
  - week 1, Thursday 2 October 2008
- Design
  - week 4, today
- How to proceed to design & implementation
  - next week, Thursday 30 October 2008
- Demonstration & Dissertation
  - semester 2, week 1: Thursday 29 January 2009

Reminder: Deadlines

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