COS 333 Course Conclusion

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Objectives

- Summarize the course
- Describe the end-of-semester schedule
- Describe project deliverables
- Have project team meetings

Agenda

- **Course summary**
- End-of-semester schedule
- Project deliverables
- Project team meetings

Course Summary

- We have covered:
  - Three-tier programming
    - The Python language, database programming, network programming, concurrent programming with multiple processes & threads, server-side web programming, the JavaScript language, client-side web programming, security issues in web programming, XML programming, server-side options, client-side options

Course Summary

- We have covered (cont.):
  - Software engineering
    - All through the course, but with focus at the end…
    - Requirements analysis, design, implementation, debugging, testing, evaluation, maintenance
    - Process models

Agenda

- Course summary
- **End-of-semester schedule**
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Schedule

- **Time period 1:**
  - ***FROM: This week's TA meeting***
  - ***TO: Your presentation***
  - Continue development of (modest) additional features
  - Compose project presentation
  - (Suggested) Meet with your TA
    - Discuss/rehearse project presentation, discuss grading, discuss deliverables
  - Polish, debug, test, evaluate existing features
  - Write documents

Schedule

- **Time period 2:**
  - ***FROM: Your presentation***
  - ***TO: May 10 @ 3:30PM***
  - ***Feature freeze***
  - Polish, debug, test, evaluate existing features
  - Write documents

Schedule

- **Time period 2 (cont.):**
  - ***FROM: Your presentation***
  - ***TO: May 10 @ 3:30PM***
  - Finalize Google team directory
    - *Project Overview* doc (from early in course)
    - *Timeline* doc (from throughout the course)
    - Presentation slides
    - *Grader's Guide* doc
    - *Product Evaluation* doc
    - *Project Evaluation* doc
    - Source code
  - Finalize GitHub repo
  - Finalize product!

Schedule

- **Time period 3:**
  - ***FROM: May 10 @ 3:30PM***
  - ***TO: May 18***
  - Be available to answer grader questions
  - Don’t touch:
    - Google team directory
    - GitHub repo
    - Deployed system

Schedule

- **Time period 4:**
  - ***FROM: May 18***
  - ***TO: You have no unanswered questions about your project grade***
  - Don’t touch:
    - Google team directory
    - GitHub repo
    - Deployed system

Schedule

- I'll send:
  - Your course letter grade to the Registrar on ~May 18
  - Your project grade report to you on ~May 19

Agenda

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Project Deliverables

- Grading procedure:
  - (1) TA adviser grades, thus producing grade report 1
  - (2) Undergraduate grader grades, thus producing grade report 2
  - (3) I merge grade reports 1 and 2 (and add my own thoughts), thus producing a merged grade report
  - (4) TA adviser, undergraduate grader, and I meet to finalize the merged grade report

Project Deliverables

- A checklist; did you…

Deliverables: Presentation

- **Presentation**
  - Cover these topics:
    - Background and motivation?
    - Functionality?
    - Design?
    - Reflection?

See next slides for details

Deliverables: Presentation

- **Presentation: Background & Motivation**
  - Provide adequate background?
    - Compose the presentation for the appropriate audience (primarily COS 333 instructors & COS 333 students)?
  - Motivate your system well?
    - Consider organizing by before-and-after scenarios?
    - Describe existing systems, and compare & contrast your system with them?

Deliverables: Presentation

- **Presentation: Functionality**
  - Describe what your system does?
  - Describe and demonstrate your system's core functionality well?
    - Consider organizing by scenarios?

Deliverables: Presentation

- **Presentation: Design**
  - Describe how your system works?
  - Provide a good description of your system's design at an appropriate level of detail?
    - Provide a high-level system architecture diagram?
    - Describe non-default technologies that you used?
    - Provide a graphical DB schema?

Deliverables: Presentation

- **Presentation: Reflection**
  - Provide a good reflection on your project experience?
    - Describe what went well during your project, and what you should have done differently?
    - Describe lessons learned?

Deliverables: Presentation

- **Presentation: General**
  - Get the timing right?
    - Use ~20 minutes for the presentation?
    - Allow ~10 minutes for questions?
  - Reasonably balance your presentation among team members?
  - Provide presentation slides in your Google team directory?

Deliverables: Timeline Doc

- **Timeline Doc**
  - Clearly indicate each team member's contribution to your project during each week of the semester?
  - Keep your Timeline current through the May 10 submission deadline?

Deliverables: Grader's Guide Doc

- **Grader's Guide Doc**
  - Describe what your system does and how to get it to do what it does?
  - Did you strive for and achieve:
    - Completeness?
    - Correctness?
    - Clarity?

The most important doc

See next slides for details

Deliverables: Grader's Guide Doc

- **Grader's Guide Doc: Completeness**
  - Begin your document with an overview of your system?
  - Organize your document as use cases?
  - Provide a table of contents listing your use cases?
  - Compose your first use case (or some introductory text) to describe how to access or install your system?
  - Include use cases to cover all (or most) of your system functionality?
  - Provide a section at the end that describes additional system functionality?

Deliverables: Grader's Guide Doc

- **Grader's Guide Doc: Correctness**
  - Populate your system's database to contain the data required by the use cases?
  - Compose your use cases such that they can be executed sequentially **by each grader**?
  - Compose your use cases such that they can be executed sequentially **among graders**?
    - Instruct each grader to contact you for a database reset?

Deliverables: Grader's Guide Doc

- **Grader's Guide Doc: Clarity**
  - Compose your use cases such that the graders can understand them?
  - Compose your use cases such that they're **concrete**?
  - Compose your use cases such that they're **specific**?
  - Use screen images effectively?

Deliverables: Product Eval Doc

- **Product Eval Doc**
  - Include these sections:
    - Testing?
    - Eval by users?
    - Eval by experts?

See next slides for details

Deliverables: Product Eval Doc

- **Product Eval Doc: Testing**
  - Answer the question "How well does the system work?"
  - Describe how you tested your system (see next slide)?
  - Describe the results of your testing, that is, which parts of your system work well and which do not?
  - List all known bugs?

Deliverables: Product Eval Doc

- **Product Eval Doc: Testing** (cont.)
  - Describe your:
    - Internal testing?
      - Validate parameters?
      - Check invariants?
    - White box external testing?
      - Boundary testing?
      - Statement/coverage testing?
        - » Show screen image of the top level of a reasonable coverage report?
    - Black box external testing?
      - Use case testing?
      - Stress testing?

Deliverables: Product Eval Doc

- **Product Eval Doc: Testing** (cont.)
  - (optionally) Describe your test automation?
    - Refer the graders to your test program(s)?

Deliverables: Product Eval Doc

- **Product Eval Doc: Testing** (cont.)
  - Describe your testing of “non-binary black box” features?
    - Provide an analysis vs. ground truth?
    - Or, if that’s not possible…
    - Conduct appropriate user surveys?

Deliverables: Product Eval Doc

- **Product Eval Doc: Eval by Users**
  - Answer the question "How well does your system meet the needs of its users?"

Deliverables: Product Eval Doc

- **Product Eval Doc: Eval by Users** (cont.)
  - Provide the results of your user interviews?
    - Tell us how many user interviews you performed?
    - Provide a summary of your interview notes in the body of your document?
    - Provide your task list in an appendix?
    - Provide your detailed notes from each user interview in an appendix?

Deliverables: Product Eval Doc

- **Product Eval Doc: Eval by Experts**
  - **You assume the role of expert!**

Deliverables: Product Eval Doc

- **Product Eval Doc: Eval by Experts** (cont.)
  - Provide a thorough heuristic evaluation of your system?
    - List the 10 Nielsen evaluation categories, with positive and negative comments in each category?
  - Provide a heuristic evaluation that is specific to your system?
  - (Optionally) Provide cognitive walkthoughs of any parts of your system?

Deliverables: Project Eval Doc

- **Project Eval Doc**
  - Include these sections:
    - Project experience?
    - Technical issues?
    - Acknowledgements?

See next slides for details

Deliverables: Project Eval Doc

- **Project Eval Doc: Project Experience**
  - Provide a reflection upon your project experience?
    - Describe some positive and negative aspects of your project experience?
    - Describe what you learned from your project experience?

Deliverables: Project Eval Doc

- **Project Eval Doc: Technical Issues**
  - Describe some technical problems that you encountered and how you solved them?

Deliverables: Project Eval Doc

- **Project Eval Doc: Acknowledgements**
  - List the pre-defined **default technologies** that you used?
  - List **and briefly describe** the pre-defined **non-default technologies** that you used?
  - Cite the major **sources of information** that you used?
    - Particularly helpful websites, books, …
  - Describe to what extent and how you used **generative AI**

Deliverables: Source Code

- **Source code**
  - Extract your code (and only your code) from your GitHub repo?
  - Place your code in a src directory (or a src.zip file) in your Google project directory?

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Congratulations!