Term Project Requirements

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Issues to be Addressed

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Goals of the Term Project

1. for the student to expand his/her depth of knowledge of the course material by doing some combination of library- and world-wide-web-based research on an <u>appropriate</u> topic.

2. for the student to gain experience in preparing both an oral presentation, supported with slides, and a written paper (after first acquiring a depth of understanding on the topic).

3. for the student to effectively communicate insight into the chosen topic both to his/her colleagues and to the faculty.

4. to enable each student to benefit <u>not only</u> from his/her personal research, integration, and synthesis, but <u>also</u> from the presentations and papers produced by his/her colleagues.

5. to add to the body of course material conveyed by the course instructor.

6. to make each student a full partner of the course instructor by contributing to the subject matter of the course.

Form

Number of Deliverables: either THREE, FOUR, or FIVE

1) ALL PROJECTS: *In-Class Oral Presentation* (with slides).

2) ALL PROJECTS: *Paper* that describes what you have done/found/learned.

3) ALL PROJECTS: Five short-answer questions, candidates for the final examination.

4) GROUP PROJECTS: Work-Breakdown Statement that clearly delineates what contribution was made by each member of the group.

5) [PROGRAMMING PROJECTS ONLY: Thoroughly-Commented Source Code]

Stages of the Term Project (not necessarily in order)

1. Formation of Group

2. Selection of Topic

3. Acquisition/Assemblage of Information

4. Thought, Analysis, SELECTION, and Organization

5. if a programming project: Design, Implementation, and Testing of program

6. Write-Up of paper, and Design of presentation

7. Submission to instructor of hard- and soft-copies both of slides and of paper

8. Presentation to class

Criteria for Selection of Topic

1. **Relevance to Subject Matter of Course**
   - **— NOTE: Instructor approval required IN ADVANCE for any topic not on the pre-approved topic list.**

2. **Absence of Topic Duplication within a single course section**
   - **— Sign-up list OR E-mail sign-up (instructions on sign-up given out in class)**

Contents of Paper (in order)

1. REQUIRED: A separate <u>Title Page</u>

2. Optional: <u>Abstract or Summary</u>

3. REQUIRED: <u>Table of Contents</u>

4. REQUIRED: Main body of <u>Text</u>

5. Optional: <u>Figures and Tables</u> (author's/authors' judgment)

6. REQUIRED: <u>Bibliography</u>

7. Optional: <u>Index</u>

8. Optional: <u>Glossary</u>

9. Optional: <u>Appendices</u>

Format Requirements for Paper

1. Single-Spacing; Size of Type Font (S): $12\text{-pt} \geq S \geq 10\text{-pt}$

2. Length of Document (L): $L \leq 12$ pages letter-sized (8-1/2" x 11")
    a) Document Length Limitation refers to main body of text ONLY.
    b) Document Length Limitation is critical.
    c) Document Length Limitation includes Figures.
    d) HOWEVER, Document Length Limitation EXCLUDES:
        1) Title page.
        2) Table of Contents.
        3) Abstract/Summary.
        4) Bibliography.
        5) Index and Glossary.
        6) Appendices.

3. Anything you feel you MUST include, but does not fit the *Document Length Limitation,* you may append to the document as an Appendix.
        NOTE, however, that the contents of appendices do NOT count towards your grade. Also, your instructor is NOT committed to reading non-required materials.

Further Details on Requirements for Term Paper

1. *Cover Page* must contain:
   a) descriptive title of the paper
   b) course number AND section number, and course name
      (e.g., *CS-960-3: Computer Ontogeny*)
   c) semester (e.g., *Fall 1776*)
   d) names of all group members/participants (spelled correctly)

2. *Table of Contents*:
   a) should show thorough, logical organization of material.
   b) must include page number for each entry.

3. *Pages* in main body of text must be *numbered* (Arabic numbers).

4. *Figures and Tables*:
   a) NOT required; should be provided if and <u>only</u> if they improve the quality of the exposition.
   b) if present, should be placed at the <u>logically most appropriate</u> position in the body of the paper.
   c) Black-and-White only, NO figures in color.

Further Details on Requirements for Term Paper (continued)

5. A brief <u>*Introduction*</u> must appear at the beginning of the text, including a declaration of purpose: What are you trying to accomplish?

6. Careful and thorough organization of your material.

7. Appropriate use of <u>**section headers**</u>, of <u>**spacing**</u>, and of <u>**paragraph formatting**</u> to clarify the organization of the paper to the reader. Section Headers should conform to the headings in your Table of Contents.

8. <u>*Checking of spelling and grammar*</u>: absolute perfection is not necessary, but errors should be <u>neither</u> numerous <u>nor</u> egregious.

9. <u>*Summary*</u> or <u>*statement of conclusion*</u> required at the end: Don't just stop.

Further Details on Requirements for Term Paper (continued)

10. HARDCOPY <u>and</u> SOFTCOPY of paper are <u>both</u> to be submitted.

11. Electronic submission to incorporate the entire document in the form of a SINGLE file that contains everything:
    a) Title Page
    b) Table of Contents
    c) Text and Figures
    d) Index (if present)
    e) Bibliography
    f) etc.

12. File Type: EITHER *.doc* OR *.txt* OR *.rtf* OR *.pdf* OR *.htm*

13. Hardcopy <u>*stapled*</u> in upper left-hand corner.

14. Binders or covers NOT allowed.

Bibliography: THREE Kinds of Entries

1. Article published in a periodical (usually, a referred journal)

2. Book

3. World-Wide-Web-based publication

Bibliography: Detailed Instructions

1. Don't cite it in your bibliography unless you read it.

2. BEGINNING of a bibliographic entry: Last names, and either initials or first names of all authors (full spelling of first names optional).

3. IMMEDIATELY FOLLOWING authors' names: Year of publication, in parentheses.

4. IMMEDIATELY FOLLOWING year of publication: Title of the work.

5. Additional details for a journal article:
    a) quotation marks enclosing the title.
    b) journal name set in italics.
    c) volume number
    d) inclusive page numbers specified (required)

6. Additional details for a book:
    a) title set in italics
    b) city and name of publisher
    c) International Standard Book Number (ISBN) and Library of Congress card and catalog numbers, and Dewey Decimal call number: very useful, but OPTIONAL

Examples of Bibliographic Items

- **JOURNAL ARTICLE:**

    Abzug, C., Maeda, M., Peterson, B.W., & Wilson, V.J. (1974). "Cervical Branching of Lumbar Vestibulospinal Axons." *J. Physiol.,* **243,** 499-522.

- **BOOK:**

    Kahn, David (1967). *The Codebreakers: The Story of Secret Writing.* New York, NY: MacMillan Publishing Company. Z103.K28 1967; 63-16109; 001.54/36; ISBN 0-02-560460-0.

- **URL for Internet Source:**

    Koops, Bert-Jaap (2001). "Crypto Law Survey." URL: http://cwis.kub.nl/~frw/people/koops/lawsurvy.htm

- **Key points on bibliography (collation of references appearing after end of text):**
    - 1) Indent second and subsequent lines of each citation.
    - 2) Set off title field both from previous field (author) and from subsequent field.

Citation of a Reference within the Text of the Paper

- Citation of reference from text of paper: author(s) and publication year, e.g.:

    1) One author: (Kahn, 1967)

    2) Two authors: (Smith & Jones, 2073)

    3) Three or more authors: (Abzug *et al.*, 1974)

Advice on Term <u>Paper</u>

1. Try to understand the differences between <u>spoken</u> English and <u>written</u> English: Spoken can be informal, while written is relatively formal. Informal phraseology possibly acceptable in oral presentation, but out of place in paper.

2. A term paper in Computer Science is in the category of a scientific or technical report. Wording must be <u>precise</u> and <u>quantitative</u>.

    EXAMPLE 1:   A processor should be described <u>not</u> as having a "huge number" of registers, but rather as containing "between 64 and 256".

3. Your term paper should <u>not</u> read like a newspaper article.
    a) Its tone should be formal, rather than chatty.
    b) Quotations, if present at all, should be <u>sparse</u>, and every one <u>must</u> be referenced (e.g., Throckmorton, 1967, page 247).

Requirements for In-Class Presentation

1. Slides generated in PowerPoint (required).

2. Slides EXCLUSIVELY in black-and-white.
    – NO colored text.
    – NO colored or patterned backgrounds.
    – Permissible exception: colored photograph

3. NO visual or audio stunts or gimmicks.
    – NO slide transitions.
    – NO audio effects.
    – NO text lines making grand entry from right, left, top, or bottom.

4. First slide (i.e., the Title Slide) to include names of all perpetrators.

5. Submit both HARDCOPY and SOFTCOPY.
    – hardcopy as "handouts", 6 slides per page
    – softcopy in EITHER *.ppt* OR *.pps* format

Guidelines on CONTENT of Presentation

1. Don't swallow the whole animal.   Cut it up into bite-sized pieces, pick a few of those, and chew on them.

2. Talk _only_ about what you understand.   DON'T try to snow your audience with a bunch of jargon, or with technical terms whose meaning you do not know.

3. Be very wary of manufacturers' claims;   stick to <u>objective</u> facts
   GOOD: "Manufacturer claims that the processor has a performance measured at 48.2 Dhrystones."
   BETTER: "tested by _Consumers' Union_ and certified by them as having a performance of 7,182 GFLOPS"
   AWFUL: "outperforms competitor's products under all conditions."   We know it's true – the manufacturer told us so, and he wouldn't lie, would he?)

4. Be selective!   A significant portion of your grade is based upon the quality of your selectivity: Did you appropriately choose the important issues to discuss, AND also omit the trivial and less relevant?

Guidelines on Slides

1. Title of presentation and names of all perpetrators REQUIRED on first slide.

2. Font: large enough to be _CLEARLY_ readable from back of room, but not much larger. This allows maximum amount of material on one slide.

3. SIMPLE diagrams _only_.   If you have a complex message to get across, don't try to squeeze it all onto one slide;   divide it up among several slides.

4. Several simple diagrams much more communicative than one that is monstrously detailed.

5. Summary of slide restrictions:
   – Black-&-White slides ONLY (except for photographs).
   – Colored backgrounds, designs, watermarks: STRICTLY FORBIDDEN
   – Slide transitions, whether visual or audio: STRICTLY FORBIDDEN.
   – Animations: STRICTLY FORBIDDEN.
   – Musical backgrounds: STRICTLY FORBIDDEN.
   – All other stunts or gimmicks: STRICTLY FORBIDDEN.

Guidelines on Slides (continued)

6. Slide presentation, too:
   — an Introduction (at the beginning)
   — <u>either</u> a Summary <u>or</u> a Statement of Conclusions (at the end).

7. The BOTTOM LINE (summary):
   a) Nothing permitted that would distract the viewer from the content of your material
   b) To impress your audience (including the faculty):
      i. Do a great job of collecting and organizing information pertaining to your area of coverage.
      ii. Select judiciously what to <u>include</u> in your paper and presentation and what to <u>leave out</u>.
      iii. Communicate well and effectively.

Guidelines on Slides (continued)

8. A summary table can be a very effective way to present data.

Guidelines on Slides (continued)

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EXAMPLE:

Table 2. POWER3's Low Execution Latencies

Instruction	Number of Cycles	
	32 bit	64 bit
Integer Multiply	3-4	3-9
Integer Divide	21	37
FP Multiply or Add	3-4	3-4
FP Multiply-Add	3-4	3-4
FP Divide	14-21	18-25
FP Square Root	14-23	22-31

Guidelines on Slides (continued)

9.   What is the "right" number of slides?

　　　ANSWER: There is no simple answer, but a <u>rough</u> guideline is one slide per minute.

Preparing and Giving Your Presentation

1. Practice to stay within the allotted time.

2. Speak up; <u>don't</u> mumble, and <u>don't</u> swallow your words.

3. Face the audience, not the screen.

4. Use notes if you must, but <u>*don't*</u> read your presentation.

5. Try to project enthusiasm for your subject.

Common Substantive Errors Made by Students

1. *Cramming too much* material into the presentation.

   – Grading based principally on QUALITY, <u>not</u> on quantity.

   – Quality boils down to:
      a) your development of insight into your subject matter.
      b) your communication of that insight to your audience in an effective manner.
      c) judicious selection of the most interesting/valuable points to present, together with rejection of the trivial or less important.

      NOTES regarding use of time:
      (1) Assume that you WILL have questions.
      (2) Do NOT fill up your complete time slot with material, as this will make you thus run over time when you get questions.
      (3) You may NOT fill up all the allotted time with your presentation, and thus preclude questions and discussion.

Common Substantive Errors Made by Students (continued)

2. _Attempting to BS their way through_ the presentation or the paper without really understanding what they are talking about.

    a) Remember that the purpose of this project is to serve as a learning vehicle:

        i. for you.

        ii. for your fellow-students in the audience.

        iii. for the faculty, as well.

    b) If all you accomplished was to learn a bunch of buzzwords, then your effort was misguided.

    c) Your instructor frequently asks questions during student presentations. You run a serious risk if you put in any material that you cannot adequately explain.

Common Substantive Errors Made by Students (continued)

3. <u>Using a disproportionate amount</u> of *time* in the oral presentation, and of *space* in the paper, to discuss matters of only marginal importance

    –   For example:

        In a paper on violins written for a course in the music department, it would be grossly improper to go on at great length about the <u>appearance</u> of the varnish.

        A BRIEF mention of the appearance MIGHT be in order in a music course.

        On the other hand, an <u>extensive</u> discussion of the effect of the varnish on the quality of the instrument's sound might be perfectly appropriate.

        If the paper were written in a course in the art department on the aesthetics of the design and construction of violins, then the effect on appearance would be very important, while the effect on sound would not.

Common Substantive Errors Made by Students (continued)

4. *Improper use of acronyms*:

    a) Some acronyms are pronounceable. Be careful, though, since Computer Science culture has standardized on the pronunciation of many. EXAMPLE: DRAM is pronounced *Dee'-Ram* (*"Dee"* rhymes with *"Pea"*, and *"Ram"* like a sheep of masculine persuasion). If you pronounce it *dram* (rhymes with *cram*), then you project non-professionalism.

    b) The first time an acronym is used, its expansion should be spelled out, and the acronym itself provided in parentheses, as: <u>S</u>ociety for the <u>E</u>limination of <u>E</u>xcess <u>A</u>cronyms (SEEA) Thereafter, the acronym can be used alone and unexpanded throughout the text with no further explanation.

    c) The above rule applies BOTH to a slide presentation AND to the textual paper. Each should separately demonstrate the acronym expansion.

    d) If you use more than three acronyms, then you should provide an alphabetic list in tabular format the end of your paper, with the expansion of each acronym.

Common Substantive Errors Made by Students (continued)

5. Failure to make use of simple techniques for organizing and presenting material:
    e.g., summary tables

Processor	Year	Transistor Count	Clock Rate (MHz)	Trace Width	Instruction Rate (per sec)	Register Width	Datapath Width
4004	1969	2,300				4-bet	4-bit
8008	1972	3,500		10μm	60,000	8-bit	8-bit
8086	1978	29,000	4.77/10	3μm	750,000	8-bit	16-bit
80286	1982	134,000	6/8/20	1.5-μm		16-bit	16-bit
80386	1985	275,000	16/20/25/33			32-bit	16/32-bit

Summary of Deliverables

1. An oral presentation in class of the highlights of your report.
2. A hardcopy printout of your presentation slides, in "handout" format, <u>6 slides per page</u>.
3. A PowerPoint file, in <u>either</u> *.ppt* or *.pps* format, E-mailed to your instructor (subject line: *CS-xyz-section#-Term Project*).
4. File Naming Convention for presentation slides:
   NameOfSystem-by-John-Smith-Jane-Jones-Elmer-Fudd-2002-Fall.*ppt*

5. A hardcopy printout of your paper, together with all accessory components, on 8-1/2" x 11" paper.
6. A single file containing all sections of the paper (including title page, Table of Contents, main text and all figures, and bibliography), in <u>either</u> *.doc, .txt, .rtf, .pdf* or *.htm* format, E-mailed to your instructor (enclosed in same E-mail as PowerPoint file).
7. File Naming Convention for paper:
   NameOfSystem-by-John-Smith-Jane-Jones-Elmer-Fudd-2002-Fall.*fileExtension*

8. Multiple-Choice Questions (included in the main body of your E-mail)

9. A Work-Breakdown Statement detailing what contribution to the project was made by each participant, and signed by all participants.
10. NOTE that <u>*both your paper and your slides*</u> will be posted on the course web page, so be sure to produce something of which you are proud.

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End