CSE5700
Project Guidelines

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These slides are available online at:

http://www.cse.wustl.edu/~jain/cse5700-25/

Student Questions

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Overview

- Outline: Preparation Process, Mind Maps
- Writing: Organization, List of Acronyms, References
- HTML Style Guidelines
- Draft Submission
- Final Submission

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HTML Style Guidelines

- See papers from previous classes on my website for details
- Use plain text editors with simple html
- No Java, flash, animation
- Do not use HTML generated by MS Word. It will not pass any HTML validation test. Save the Word file as plain text and add HTML tags.
- Learn to use special characters in text and reference URLs. See
  - http://www.w3schools.com/tags/ref_urlencode.asp
  - https://perishablepress.com/stop-using-unsafe-characters-in-urls/
- HTML5 only

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Header

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<title> </title>
<meta name=“author"
<meta name="robots"
 <meta http-equiv="content-type" content="text/html; charset=utf-
    8">
<meta name=“keywords"
<meta name=“description"
</head>
```

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Body

```
<body>
<h1>Title</h1>
<B>Author</B>, Permanent-Email
<hr>
<h2>Abstract:</h2>
...
<hr>
```

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Body (Cont)

```
<h2><a id="toc"></a>Table of Contents:</h2>
<ul>
<li><a href="#sec2">2. 10-Gigabit Ethernet Overview</a></li>
<ul>
<li><a href="#sec21">2.1 Benefits of 10-Gigabit
    Ethernet</a></li>
...
</ul>
</ul>
<hr>
```

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Body (cont)

```
<h2><a id="intro"></a>Introduction</h2>
...
<p>[<a href="#grow99">Grow99</a>]
<p>
...
<br>
```

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Project Homework 2

- Prepare a short webpage (written manually) using most of the tags indicated in this handout
- Include one image/photo and a table on the page
- Validate the page using a trial version of CSEHTML from: https://www.htmlvalidator.com/
- Check the Google-friendliness of the page: https://varvy.com/
- Submit the html source file printout, web page printout, and the URL, screenshot of the validation
- Remember:
  - To add all meta tags specified in the handout
  - Validate the page. Capture a screenshot and attach it.
  - Load it in an ad-free area

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WUSTL Engineering Student Webpages

- To access your web space and copy files:

ssh your_wustl_key@shell.cec.wustl.edu

your_wustl_key is the left part of your wustl email before the @ sign

Enter your password and complete the authentication as asked.

- Prepare and name your html file index.html (all lowercase) and upload it
- Set permissions by typing chmod 644 index.html
- Upload other files as needed and chmod
- Visit https://students.engineering.wustl.edu/cse5007_sp25/your_wustl_key
  - If you get a "403 forbidden" error, run the chmod command again
  - If you get a "404 Not found" error, check that your html file is named index.html and check that it is all in lowercase.

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Submission Instructions

1. Prepare the page in your computer in a separate directory.
2. The main file should be called index.html
3. Use no other subdirectory in this directory. All supporting files, such as CSS, figures, etc., should be in the same directory.
4. Validate the page for correctness using CSE HTML Validator.
5. One way to produce the validation report is to:
   - Validate again using Tool-> Batch wizard.
   - Validate.
   - It will open a browser page with the report.
   - Click on the file name to see the detailed report for the page.
   - Print/save this report with the name validation.pdf in the same directory
6. Do not worry if there are some warnings and comments, such as spelling mistakes or keyword meta tags.
5. Zip the directory and upload the zip file to Canvas.

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Common Mistakes in Project Homework 2

- Not using parameters for meta tags
- Not validating
- Not uploading the image file

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End of Part 1

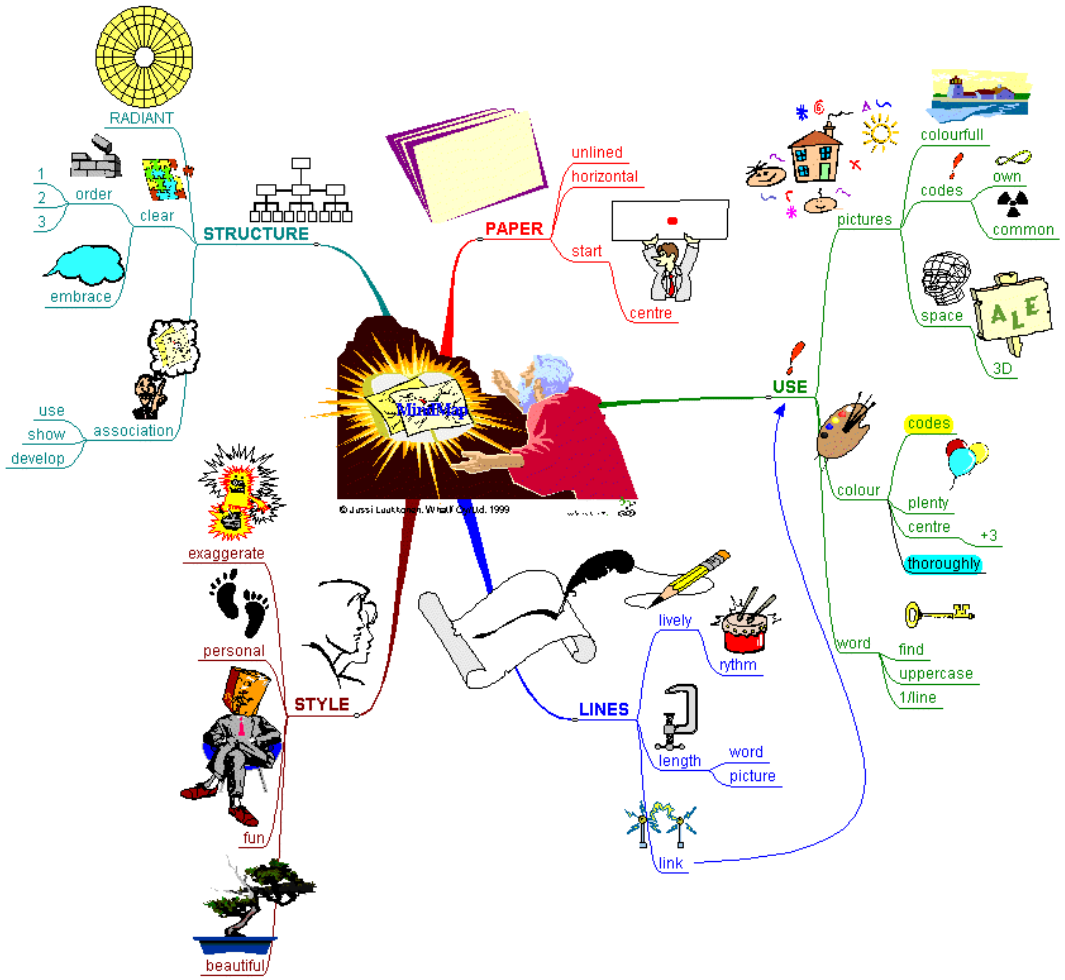
Outline Preparation Process

- Read the abstract and stop if irrelevant
- Underline the key points in the paper
- Write the key summary on the first page of the paper
- Prepare a text document with the key ideas
- Keep adding to this text document from different papers with [refs, page, paragraph]
- Import the text document in PowerPoint
- Add figures and clean up the outline
- Like getting ready to make a presentation to the class

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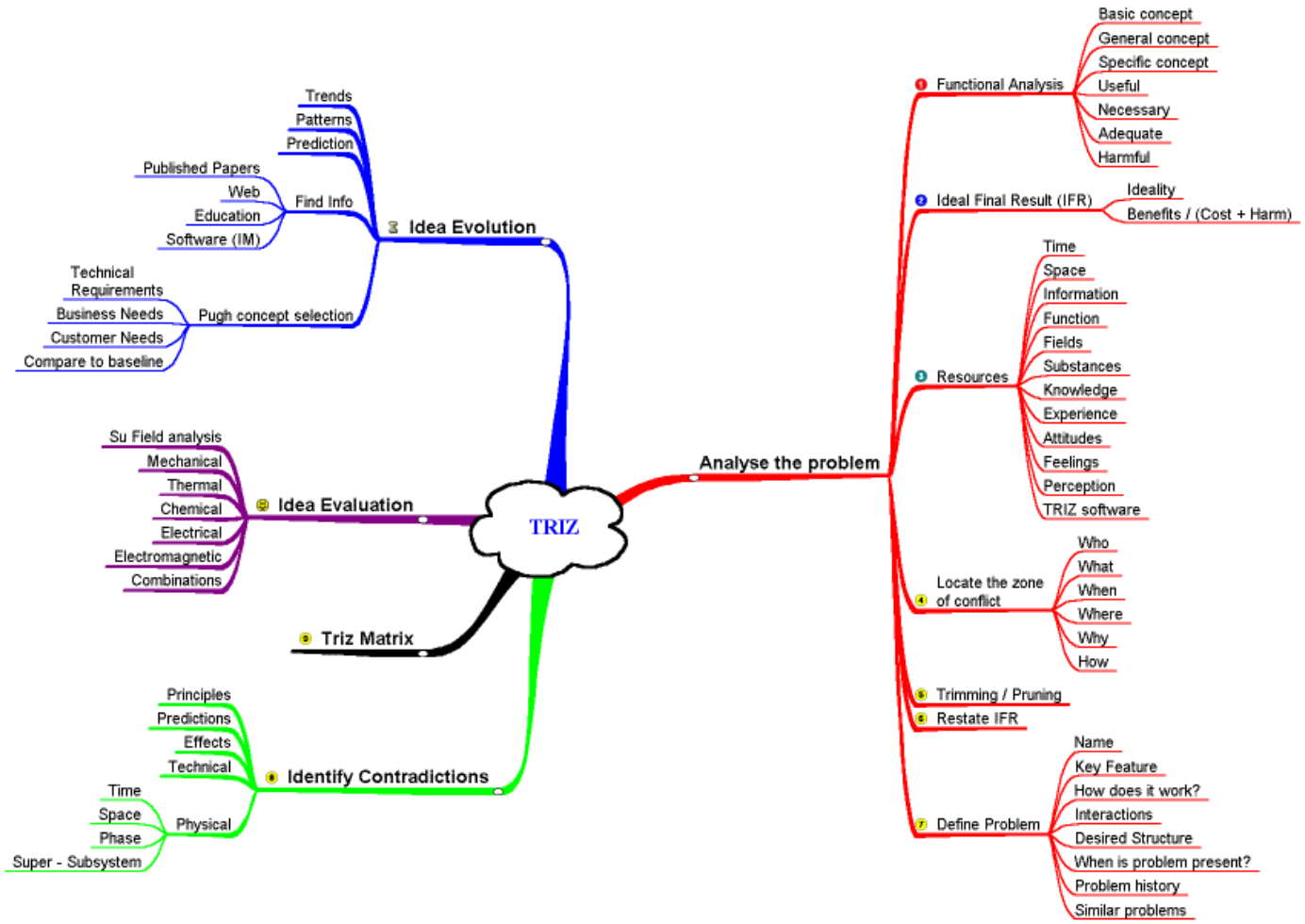
Mind Maps



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Mind Maps (cont)



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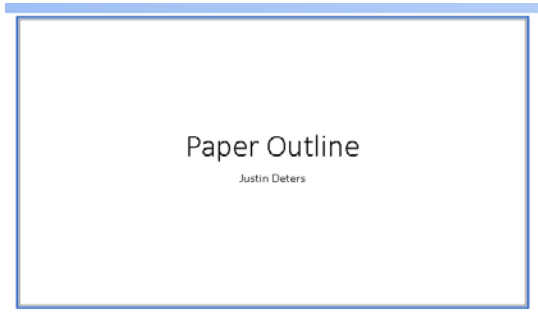
Project Homework 4: Outline

- Read papers
- Collect ideas
- Organize them in a linear list
- Present them in a PowerPoint Presentation

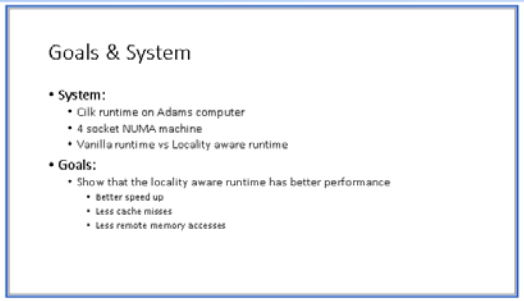
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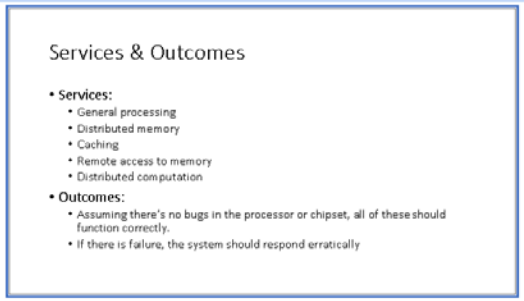
Sample Outline



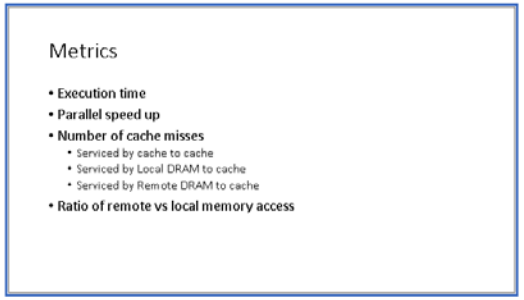
1



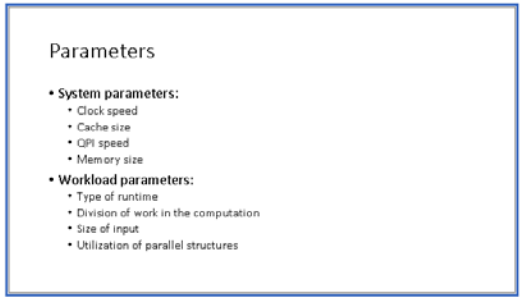
2



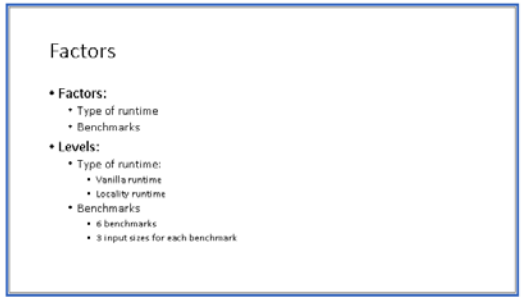
3



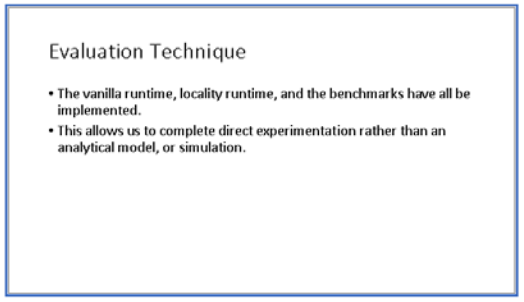
4



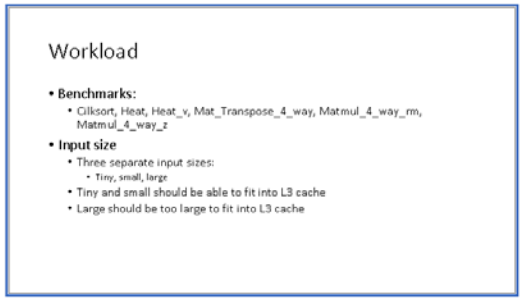
5



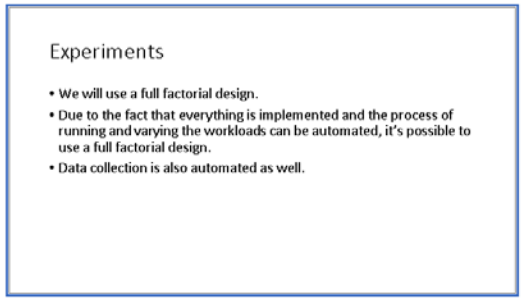
6



7



8



9

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Sample Outline (Cont)

Analysis

- Perform confidence interval tests to determine if the locality runtime is statistically better than the vanilla runtime.

10

Literature Review

11

Main memory and cache performance of intel sandy bridge and AMD bulldozer

- Summarizes the layout of the Sandy Bridge EP.
  - This includes the cache hierarchy
  - Also shows where the memory controller and QPI interact with L3
- Includes their own approach to measuring latency between different types of cache accesses both local and remote

12

The implementation of the Cilk-5 multithreaded language

- Defines the structure of the Cilk runtime
- Explains the basics of work-stealing
- Gives theoretical bounds on the computation

13

NUMA (Non-Uniform Memory Access): An Overview

- Summarizes the NUMA architecture
- Details the different types of memory policies one can use in a NUMA machine
- Details how Linux handles NUMA machines

14

"(Mis)understanding the NUMA memory system performance of multithreaded workloads

- Clarifies misunderstandings of NUMA systems
- Provides experimental demonstrations of how programs interact with NUMA
- Explains the strategy of locality aware computation on NUMA machines

15

Scalable Task Parallelism for NUMA

- An implementation of a locality aware NUMA runtime
- Defines task parallel computations on NUMA machines
- Proposes a locality aware memory allocation protocal

16

Topology-Aware and Dependence-Aware Scheduling and Memory Allocation for Task-Parallel Languages

- Proposes a solution to the NUMA locality problem by focusing on scheduling dependent tasks on the same nodes
- Proposes that memory should be allocated on nodes by grouping tasks together that will all depend on the same memory

17

Parallel Work Inflation, Memory Effects, and their Empirical Analysis

- Defines the concept of "work inflation"
- Work inflation is the cost incurred going from a single core operation to a multicore operation
- Provides a theoretical framework for work inflation
- Offers guidelines on how to optimize to reduce work inflation

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Sample Outline (Cont)

Roofline

- Provides an analysis framework for performance on multicore systems
- Proposes the roofline model
  - Allows one to visualize system performance over operational intensity
  - The roofline shows where the performance levels out once the system has been saturated
- Allows programmers to better optimize their programs to avoid hitting the roofline

19

Likwid

- A performance monitoring suite
- Allows easy access to the Intel hardware performance monitoring counters
- Gives programmers an easy way to define specific performance monitoring situations and evaluate their programs

20

Intel 64 and IA-32 Architectures Software Developer's Manual

- A detailed manual on the different features and performance monitoring abilities of Intel processors
- Specifically outlines the bit masks used to define which feature you are monitoring.

21

Intel Xeon Processor E5 Product Family Specification Update

- This document outlines all the bugs within the Sandy Bridge EP architecture that need to be accounted for during performance monitoring

22

Using Intel Vtune Amplifier XE on Xeon E5 Family 1.0

- A presentation by Intel that outlines various suggestions on performance monitoring
- Specifically includes the measurement formula of "back end stall" or cycles spent on servicing cache misses

23

LIKWID: A Lightweight Performance-Oriented Tool Suite for x86 Multicore Environments

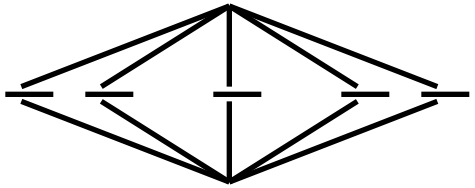
- The academic paper that outlines the Likwid suite

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Diamond Writing Style



- Each paper should start with an Introduction and end with a summary.
- Each section should start with a short introduction and end with a summary with a lead into the next section. The same applies to subsections.
- All subsections should be of comparable length.
- Add an appendix with all abbreviations
- Add a list or discussion of related products

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Writing Style

- Readers want to get to the information fast. Keep the nonessential stuff at the end.
- Check thoroughly for grammar and spelling.
- Avoid excessive use of abbreviations.
- Be consistent in case and usage: MOBILE, Mobile, mobile

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Organization

- Every paper should have an introduction and a summary.
- Divide the paper into sections.
- Every section should have a lead-in paragraph.
- Header level should correspond to the level in the table of contents.

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Organization (Cont)

- Title
- Author
- Abstract
- Keywords
- Table of Contents
- Introduction
- Other Sections
- Summary
- List of Acronyms
- References
- Date Last Modified:

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Organization (Cont)

- Table of Contents
  - Sections and subsections
  - Numbering n.n
  - 3-7 subsections per section
  - 3-7 sections per paper
  - Include one first and 2nd level headers n. and n.n
  - Do not include 3rd and higher levels, e.g., n.n.n

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Title/Keywords/Abstract

- Title
  - Based on the Table of contents
  - Searchable
- Abstract
  - Based on Table of Contents
  - 3-7 sentences
  - Emphasize what part of the course was used in the paper
- Key Search words
  - Based on the Table of contents
  - Acronyms and full names
- Description:
  - One line based on ToC and Abstract

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Organization (Cont)

- Introduction
  - Explain what the topic is about.

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Other Sections

- Each section is less than three pages.
- Each section needs at least one introductory paragraph. Do not start with a subsection.
- Each subsection has at least 1 paragraph.
- All sections/subsections should be numbered n. n.n
- If you borrowed several sentences from some source, italicize the text and indicate the source.

Never write a sentence with the original source in front of you. This will block you from writing it in your own words. Write ideas from sources, merge ideas from different sources, and then write the ideas in your own words.

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Other Sections (Cont)

- Always include citations for sources of ideas, even if the expression is yours.
- Redraw the line drawings. Avoid copy and paste as much as possible (e.g., for photographs).
- If there is no author, e.g., a web page, use the site name followed by a number, e.g., [wikipedia02] in the body of the text, with full title and URL in the reference list.
- If multiple papers in the same year from the same last name, use [lastnameyya] [lastnameyyb],… in the text.

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Summary

- One or more sentences about each issue.
- Based on Table of Contents
- Key lessons

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References

- Style of References
  - Author, "Title," publisher, year, ISBN for books
  - "Title," URL [One line description] for web pages
  - Author, "Title," source, year, pp., URL for technical/magazine articles
- All authors: First-initial. Last-Name or
  First-Name Last-Name.
  Do not use Last-Name, First-Name, or First-Initial.
- All URLs should show up as well as have a link.
  - This allows URLs to show in the printed version.
- In the text, point to the end
  In the end, point to the actual URL. Provide URL.

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References (Cont)

- Find URLs for published papers
- Do not include useless references.
- In the text, use [Authoryy] notation, e.g., [Jain99]
  Exceptions: Standards, company documents, RFCs.
- Shorten IEEExplore URLs to include only *arnumber*, e.g., http://ieeexplore.ieee.org/xpl/articleDetails.jsp?arnumber=4301304
- All references should consistently use the same style

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List of Acronyms

- Search the text
- Define on first use
- Avoid acronym use if used less than five times.
- Exception: Commonly used acronyms, e.g., CPU, I/O, IP, …

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Figures/Tables

- All figures should be numbered 1, 2, ...
- All tables should be numbered 1, 2, ...
- All figures should have a title below the figure
- All tables should have a title above the table
- All figures/tables should be referenced in the text and explained.
- Should be placed close to their references.
- To prepare figures in Windows, use blank slides in PowerPoint using the font sizes used in the paper. Group the figure as one object. Copy and use paste special as "Enhanced Windows Metafile (EMF)" for best quality.
- Do not rescale figures in Word. Rescaling the fonts reduces their quality.
- All Figures and Tables should have a max width of 6.5" (to allow printing on a letter size paper)
- Use only .jpg, .png, and .gif files for figures. No fig?.pdf

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Draft Submission

- Submit a Word file on Canvas. Before uploading, remove all private information from the file. Word stores authors' names as hidden data. Use File → Info → Check for Issues → Inspect Document → Inspect → Remove ALL
- In the draft:
  - For review purposes, the author's name and email should be removed. Substitute the last three digits of your student ID.
  - Add keywords after the abstract
- Spell check using MS Word
- Grammar Check: https://app.grammarly.com/
- Plagiarism check: http://www.scanmyessay.com or https://app.grammarly.com/
- Canvas also checks for plagiarism. Note your similarity score.

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Editorial

- Check all acronyms. All acronyms should be defined on first use.
- Check capitalization. No unnecessary capitalization. Headers are usually capitalized.
- Spell-check the entire document.
- K=1024, k=1000. Disk storage is measured in KB, and network link speeds are measured in kbps not Kbps or kb.
- Leave a space between numbers and units, e.g., 15 km, not 15km.

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Editorial (Cont)

- Look for special characters
- American English: Signaling, Synchronization
- Check for continuity
- Break long paragraphs.
- Single space between paragraphs.
- The paper should be 10-15 pages long
- If you copy any figures, give reference and credit
- Use the meta tags as discussed

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Common Mistakes

- No Figures
- Figure/equations fonts too large
- Figures with no title or number, or reference
- Figures/tables overflowing the margins
- References with no annotation
- References not cited
- Key pieces of information w/o references
- Tables w/o references
- Papers too short

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Common Mistakes (Cont)

- No comparison of different alternatives
- No Acronyms
- No summary
- Incorrect reference style
- No keywords

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HTML Guidelines (Cont)

- File name: index.html, fig1.gif, fig2.gif, ..., fig.ppt
- Keep PowerPoint figure source files in the same directory, although these may not be referenced in the paper
- Keep all references relative.
  Absolute:
  http://www.cse.wustl.edu/~jain/papers/comcom17.htm
  Relative: papers/comcom17.htm
  or comcom17.htm
- Keep the whole paper in one file, "index.html," with figures in fig*n*.gif in the same directory. No Subdirectories.

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HTML Guidelines (Cont)

- All filenames and extensions should be lowercase and contain no spaces. No .JPG
- Author (at) wustl.edu
- Ensure there is a link attached to every line in the Table of contents
- Spread references throughout the document. Use mnemonic references with links attached to them, e.g., [Cisco99]
- Keep all internal anchor names and IDs starting with the alphabet, lowercase without spaces, dots, or special characters, e.g., cisco99. No sec2.1
- Use only ID (not name):
  ok: <A id="xx">
  Not ok: <A name="xx">
- All images should have alt, height, and width.
- Width and height should match the image size.

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HTML Guidelines (Cont)

- Do not resize images in html. Resize them before using them. Prepare figures so that there is no rescaling required. Use 12-point fonts in PowerPoint.
- Center all figures, tables, and equations
- Serially number all figures as 1, 2, … not 1.1, 2.1, etc.
- Serially number all tables as 1, 2, …
- No font tags
- Check that keyword tags in the header are appropriate and exhaustive.
- Check that the description in the header is appropriate.

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Check for Plagiarism

- Viper – The anti-plagiarism scanner
  http://www.scanmyessay.com/
  Requires Windows but best free checker

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Final Submission

- Validate your page using a trial version of the CSEHTML validator downloaded from: https://www.htmlvalidator.com/
- I use CSE HTML Validator Pro
- Check URLs. Check local anchors.
- Remember to submit copies of unusual references (not available in the library or the Internet) with the final paper.

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Final Submission (Cont)

- No WinWord-generated HTML
- You can use WinWord for spell-checking the text
- Use plain text editor to insert HTML tags.
- Submit the final HTML version as a single zip file
- No Tar/tgz files (please submit only one zip file with all files)
- Upload the file to Canvas.

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Common Mistakes in HTML

- Used WinWord generated HTML file.
- Used dots in IDs
- No height or width in images
- Did not validate HTML.
- Incorrect title.
- Images resized in HTML. The height and Width attributes in the images do not match those of the actual image.
- Used HTML4
- WUSTL proxy in URLs
- Figures not scaled properly
- Table rows not aligned on top

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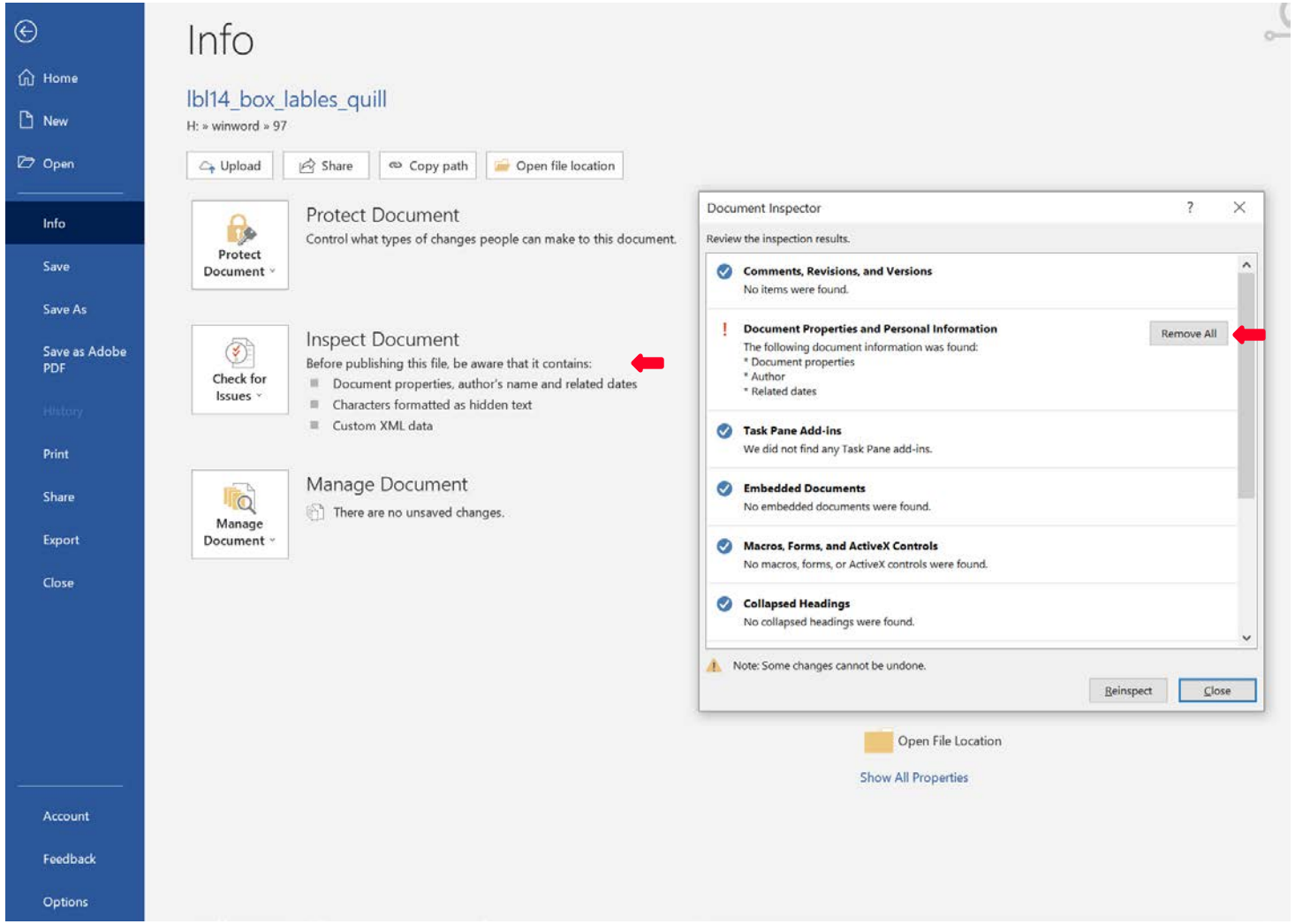
Checklist

	T	F	
1.	⭘	⭘	Are Keywords appropriate?
2.	⭘	⭘	Is the title satisfactory?
3.	⭘	⭘	Does the abstract clearly summarize the topic discussed?
4.	⭘	⭘	Table of Contents logically organized?
5.	⭘	⭘	Does introduction entice you to read the rest of the paper?
6.	⭘	⭘	Major ideas and topics received enough attention?
7.	⭘	⭘	Are individual sections and subsections of uniform length?
8.	⭘	⭘	Are references correctly formatted and spread throughout?
9.	⭘	⭘	Include author, title, dates, pages, and URL.
10.	⭘	⭘	Did the author follow the diamond explanation principle?
11.	⭘	⭘	Acronyms used properly and listed?
12.	⭘	⭘	Figures and Tables (Clearly labeled and professional looking, referenced in the text and explained)
13.	⭘	⭘	Are paragraphs of the correct length (not too long or too short)?
14.	⭘	⭘	Do the subheadings clarify the sections of the text?
15.	⭘	⭘	Was the material ordered in a way that was logical, clear, and easy to follow?
16.	⭘	⭘	Is there any portion of the text that could be omitted?
17.	⭘	⭘	Does the summary point out the key results?
18.	⭘	⭘	Copyright violations in text, figures, or tables?
19.	⭘	⭘	Text checked for Grammar, Spelling, and Punctuation errors
20.	⭘	⭘	Is the quality good enough for publication in IEEE Magazine?

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Removing Hidden WinWord Info



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http://rajjain.com

http://www.cse.wustl.edu/~jain/cse5700-25/m_00prj.htm

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Related Modules



CSE567M: Computer Systems Analysis (Spring 2013),
https://www.youtube.com/playlist?list=PLjGG94etKypJEKjNAa1n_1X0bWWNyZcof

CSE473S: Introduction to Computer Networks (Fall 2011),



https://www.youtube.com/playlist?list=PLjGG94etKypJWOSPMh8Azcgy5e_10TiDw



Wireless and Mobile Networking (Spring 2016),
https://www.youtube.com/playlist?list=PLjGG94etKypKeb0nzyN9tSs_HCd5c4wXF

CSE571S: Network Security (Fall 2011),



https://www.youtube.com/playlist?list=PLjGG94etKypKvzfVtutHcPFJXumyyg93u



Video Podcasts of Prof. Raj Jain's Lectures,
https://www.youtube.com/user/ProfRajJain/playlists

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