CSCE 181
Introduction to Computing
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Reminders
- Check the course website often for class meeting
  - http://courses.cs.tamu.edu/choe/12spring/181
- Short report #1 on computing past and future is due by Monday 1/30.
- Short report #2 will be due by Monday 2/13.
- Submit the reports on the e-learning website, no hard copies, no csnet, no emails!

Short Report: Content
- Required content:
  - Cover page: see assignment.
  - Topic: In your own words, describe the topic of the lecture (1 paragraph)
  - Summary: In your own words, provide the major points of what was covered in the lecture (at least 2 paragraphs)
  - Personal View: summarize your personal view of the lecture (1 to 2 paragraphs)

Report #1-Specific
- Since this report is not about a lecture, use the following guideline:
  - Topic: Talk about the sub-area of computing technology that you want to talk about.
  - Summary: Summarize known facts about the area (about the past).
  - Personal view: Write about your assessment of the past (impact) and how you think it will fan out in the future (plus impact).
## Short Report: Rubric

<table>
<thead>
<tr>
<th>Aspect</th>
<th>High (Exceeds expectations)</th>
<th>Medium (Meets Expectations)</th>
<th>Low (Below Expectations)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spelling</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Grammar/Punctuation</td>
<td>3</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Completeness</td>
<td>3</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Style</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>10</td>
<td>5</td>
<td>0</td>
</tr>
</tbody>
</table>

### Spelling:

- **High**: No spelling errors
- **Medium**: One or two spelling errors, but not the type to make meaning obscure, and not of basic or common words
- **Low**: Major misspelling of important or common words, or a number of minor errors that interfere with reading or comprehension.

### Grammar and Punctuation:

- **High**: Punctuation and grammar are appropriate to the audience and genre and enhance the style. The grammar and punctuation conform to the conventions for edited American English. There are no punctuation or grammar errors.
- **Medium**: Punctuation and grammar are appropriate to the audience and genre. They conform to the conventions for edited American English. Errors may occur but are few and do not markedly distract the reader.
- **Low**: Errors occur frequently and mar the writer's intent and the reader's comprehension. Reading is frequently interrupted by error. The writer has not proofread.

### Completeness:

- **High**: All sections are included and the content is consistent with the lecture/assignment.
- **Medium**: One section is missing and/or the content is not consistent with the lecture/assignment.
- **Low**: More than one section is missing and the content is not consistent with the lecture/assignment.

### Style:

- **High**: The writing sounds mature and professional and reads clearly. The style is concise and to the point.
- **Medium**: The writing is comprehensible but at times a bit unclear or wordy.
- **Low**: The writing seems inappropriate for the professional or educated reader, is difficult to read, wordy, or unclear.

If you do not get at least a 7 (after late penalty if submitted late) on a report, you will be given the opportunity to revise it or make it up with a report on another presentation, if it appears a good-faith effort was made. In total, you need to complete six short reports with a score of at least 7.

### Stat. from Past Semester

- 120/132 students submitted the report
- 41 of the reports got a 10
- 33 of the reports got a 9
- 26 of the reports got a 8
- 12 of the reports got a 7
- 4 of the reports got a 6
- 1 of the reports got a 5
- 2 of the reports got a 4

- About 50% of reports did not have a cover page (1 point deduction)
- About 20% of reports were biographies of professors instead of about their research (2 points deduction)
- About 10% of reports were submitted in the text box instead of as an attachment (1 point deduction)
- About 5% of reports contained extremely poor grammar/spelling. These made up all but 1 of the reports that received less than a 7.
Style

- Text should be concise and to the point
  - Much information is in textual format. This unstructured style of data, in contrast to the old structured record format data, cannot be managed properly by the traditional database models. Furthermore, since so much information is available, storage and indexing are not the only problems. We need to ensure that relevant information can be obtained upon querying the database. (O)

- Much information is in **textual** format. This unstructured style of data, in contrast to the old structured record format data, **cannot be managed properly** by the traditional database models. Furthermore, since so much information is available, storage and indexing are not the only problems. We need to ensure that relevant information can be obtained upon querying the database. (X)
Style

• Important to use an active voice
  – The following theorem now can be proved.

Style

• Important to use active voice
  – (X) The following theorem now can be proved.
  – (O) We can now prove the following theorem.

Style

• Avoiding the artificial use of verbs like “perform”, “utilize”, “achieved”, “carried out”, “conducted”, “occurred”, and “effected”.
  – Tree structures can be utilized for dynamic storage of terms.

Style

• Avoiding the artificial use of verbs like “perform”, “utilize”, “achieved”, “carried out”, “conducted”, “occurred”, and “effected”.
  – (X) Tree structures can be utilized for dynamic storage of terms.
  – (O) Terms can be stored in dynamic tree structures.
Do not misuse “we”
− When we conducted the experiment it showed that our conjecture was correct

Best to introduce new information at the end of a sentence
− The color pink is obtained by combining red and white paints.

− (X) When we conducted the experiment it showed that our conjecture was correct
− (O) The experiment showed that our conjecture was correct.

− (X) The color pink is obtained by combining red and white paints.
− (O) Combining red and white paints produces the color pink.
Technical writing should be objective and accurate
- Have one idea per paragraph
- Have a simple, logical organization
- Use short words
- Keep paragraphs short
- Avoid buzzwords and slang
- Omit any unnecessary material
- Be specific, not vague or abstract

The results show that, for the given data, less memory is likely to be required by the new structure, depending on the magnitude of the numbers to be stored and the access pattern.

Avoid the style of popular science writing

As each value is passed to the server, the “heart” of the system, it is checked to see whether it is in the appropriate range.

The results show that, for the given data, less memory is likely to be required by the new structure, depending on the magnitude of the numbers to be stored and the access pattern.

The results show that less memory was required by the new structure. Whether this result holds for other data sets will depend on the magnitude of the numbers and the access pattern, but we expect that the new structure will usually require less memory than the old.
Tone

● Avoid the style of popular science writing
● (X) As each value is passed to the server, the “heart” of the system, it is checked to see whether it is in the appropriate range.

(O) Each value passed to the central server is checked to see whether it is in the appropriate range.

Examples

● Use an example whenever it adds clarification

● In a semi-static model, each symbol has an associated probability representing its likelihood of occurrence.

For example, if the symbols are characters in text, then a common character such as “e” might have an associated probability of 12%.
Examples

- Examples can be
  - blocks of text with a heading such as “Example 3.5”
  - detailed discussions of specific instances where a technique can be used
  - an informative example with a few words

Examples

Algorithms that involve bit manipulation cannot be efficiently implemented in these languages. For example, Huffman coding is impractical because it involves a stream one bit at a time.

Special cases, such as the empty set, need to handled separately.

Motivation

- Tell the reader what you are going to say, then say it, and then tell the reader that you have said it.
- Each section should have a clear story to tell.
- Each paragraph should have a clear topic or issue to explain.
- The connection between one paragraph and the next should be obvious

Motivation

- Tell the reader what you are going to say, then say it, and then tell the reader that you have said it.
- A well written section might start with

  “In this section, we describe a simple but robust vision algorithm to extract the locations of the retro-reflective markers from two synchronized video cameras. We then describe the subject calibration process that makes the vision-based interface robust to users of different sizes and to variations in marker placement.”
<table>
<thead>
<tr>
<th>Motivation</th>
<th>Be Specific</th>
</tr>
</thead>
</table>
| ● Tell the reader what you are going to say, then say it, and then tell the reader that you have said it. | ● Avoid using vague terms  
− For the case when the weight is large, one has to…  
− For the case when the weight is larger than one ton, one has to… |
| ● A well written section might conclude with | |
| “Together these results show that the hypothesis holds for linear coefficients. The difficulties presented by non-linear coefficients are considered in the next section.” | |

<table>
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<th>Straw Men</th>
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| ● Avoid using vague terms  
− For the case when the weight is large, one has to…  
− For the case when the weight is larger than one ton, one has to… | ● A straw man attempts to win an argument through presentation rather than reasoning  
− It can be argued that databases do not require indexes. |
Straw Men

- A straw man is an indefensible hypothesis that an author describes for the sole purpose of criticizing it.
- Examples: Something everyone is critical about already (no need to criticize). Contrasting proposed method with impossibly bad alternative or out-of-date (it's unfair).

Straw Men

- A straw man attempts to win an argument through presentation rather than reasoning
  - Most users prefer the graphical style of interface.
  - (X) Most users prefer the graphical style of interface.
  - (O) We believe that most users prefer the graphical style of interface.

- Another possibility would be a disk-based method, but this approach is unlikely to be successful.
Straw Men

- A straw man attempts to win an argument through presentation rather than reasoning
  - (X) Another possibility would be a disk-based method, but this approach is unlikely to be successful.
  - (O) Another possibility would be a disk-based method, but our experience suggests that this approach is unlikely to be successful.

Title and Headings

- They should be concise and informative, have specific rather than general terms, and accurately describe the content.
  - A New Signature File Scheme Based on Multiple-Block Descriptor Files for Indexing Very Large Data Bases
  - (X) A New Signature File Scheme Based on Multiple-Block Descriptor Files for Indexing Very Large Data Bases
  - (O) Signature File Indexes Based on Multiple-Block Descriptor Files
Title and Headings

• They should be concise and informative, have specific rather than general terms, and accurately describe the content.
  – An Investigation of the Effectiveness of Extensions to Standard Ranking Techniques for Large Text Collections

Title and Headings

• Titles and section headings do not have to be complete sentences.
  – Duplication of Data Leads to Reduction in Network Traffic

Title and Headings

• They should be concise and informative, have specific rather than general terms, and accurately describe the content.
  – (X) An Investigation of the Effectiveness of Extensions to Standard Ranking Techniques for Large Text Collections
  – (O) Extensions to Ranking Techniques for Large Text Collections

Title and Headings

• Titles and section headings do not have to be complete sentences.
  – (X) Duplication of Data Leads to Reduction in Network Traffic
  – (O) Duplicating Data to Reduce Network Traffic
Abstract

- Summarize the paper in a paragraph or two
- Include: contributions, approach, results, advantages.
- As short as possible, but not shorter
- Goal: encourage readers to read the paper
- First sentence: summarize the paper
  – Don’t make me read an essay before saying what you do.
  – “In this paper, we introduce a new algorithm for computing the bounding box of a penguin.”
- Rest of the paper should stand alone without abstract.

This paper introduces an approach to performance animation that employs video cameras and a small set of retro-reflective markers to create a low-cost, easy-to-use system that might someday be practical for home use. The low-dimensional control signals from the user's performance are supplemented by a database of pre-recorded human motion. At run time, the system automatically learns a series of local models from a set of motion capture examples that are a close match to the marker locations captured by the cameras. These local models are then used to reconstruct the motion of the user as a full-body animation. We demonstrate the power of this approach with real-time control of six different behaviors using two video cameras and a small set of retro-reflective markers. We compare the resulting animation to animation from commercial motion capture equipment with a full set of markers.

Introduction

- An extended abstract
- Goal: provide context and encourage reader to read the paper
- The introduction has several parts:
  - Background and motivation (1 paragraph)
  - Overview of the paper and contributions (1-2 paragraphs)
  - More details and summary of the approach
  - Summary of the results and conclusions

Technical Documents/Papers

- Title
- Abstract
- Introduction
- Background or related work
- Algorithm/system description
- Experiments or results
- Conclusion and/or discussion
- References
# First Paragraph: Motivation

- First paragraph should clearly identify:
  - Topic
  - Why the topic is important
  - Summary of your content

- Currently, all computer systems include computer chips that have two or four processors. The ability to use all of the processors simultaneously is necessary to reduce execution time. In this paper, we focus on identifying three techniques to be used to use all processors simultaneously for database applications.

# Common Errors

- Spelling and punctuation.
- Part of speech: using n. where a v. or an adj. is more appropriate, etc.
- Number agreement: Singular n. – Singular v. Plural n. - Plural v.
- Anaphora: Pronouns, etc. that refer to other things in the text. (See ambiguity.)

# Paragraphs

- Consists of a discussion on a single topic or issue.
- Outline or argument is typically captured in the first sentence of a paragraph.
- Every sentence in a paragraph should be on the topic announced in the opening.
- The last sentence has a higher impact than those in the body; pay attention to sentence order

# Common Errors

- Tense:
  - Other people's work in the literature– past tense.
  - Don't write everything in the present tense.
- Missing subject or verb in a sentence.
  - Unclear who did what, what was done, etc.
- Too many concepts crammed into one sentence.
Common Errors

- Parallel constructs not having an equivalent form.
  - (X) X did Y while P was done by Q.
  - (O) X did Y while Q did P.

- Ambiguity in interpretation
  - (X) I saw an elephant in pajamas.
  - (O) While still in my pajamas, I saw an elephant.

Common Errors

- Ambiguity in interpretation -> bring together separated constructs
  - (X) I killed the elephant wearing farmer's overalls with a pitch fork.
  - (O) In farmer's overalls, I killed with a pitch fork the elephant.
  - (O) I killed the elephant that was wearing farmer's overalls and holding a pitch fork.
  - No animal was hurt during the authoring of this slide!