

3: Writing Reports

MENG311 English V:
Technical Writing Practice I

Topics to be discussed

- ▶ Approaches to writing
 - *Top-down approach*
 - *Evolutionary approach*
- ▶ Order of writing
- ▶ Data Presentation
- ▶ Citing References
- ▶ Comparison Essay (for Ch. 2 of ISI report)
- ▶ Lead paragraph and lead (topic) sentence

Considerations

- ▶ **What is the purpose of the report?**
 - Is it to fulfill the requirements of your course?
 - Is it to disseminate your ideas and results to others?
 - Is it to provide a thorough literature review of the field?
 - Is it to inspire others and to persuade them to get involved with your research?
- ▶ **Who is going to read it?**
 - What do they already know?
 - What do you want them to gain from your report?



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Approaches to writing

- Approaches to writing
- Order of writing
- Data Presentation
- Citing References
- Comparison Essay
- Lead paragraph

- ▶ *Top-down approach*
- ▶ *Evolutionary delivery*

- are not mutually exclusive and you may well find yourself adopting both of them to one extent or another as you develop your report



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Top-down Approach

- Approaches to writing
- Order of writing
- Data Presentation
- Citing References
- Comparison Essay
- Lead paragraph

- ▶ The top-down approach is used to identify the structure of your report with a chapter breakdown structure –
 - how many chapters it will have,
 - what each chapter will contain
 - how each chapter will break down into sub-sections.
- ▶ With sub-headings identified, you can then go on to complete these sections at an appropriate point in your project when results are obtained and information is acquired.

Top down Approach – Chapters of Final Year Project

- Approaches to writing
- Order of writing
- Data Presentation
- Citing References
- Comparison Essay
- Lead paragraph

ABSTRACT

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Top down Approach – Chapters of COMP321 – ISI Report

Chapter 1. Introduction

Section 1.1 Overview
Section 1.2 Objectives

Chapter 2. Background and Related Work

Section 2.1 Background
Section 2.2 Related work

Chapter 3. System Design

Section 3.1 Data modeling
Section 3.2 Dynamic modeling

Chapter 4. System Implementation

Section 4.1 Architecture
Section 4.2 Module design

Chapter 5. Results and Discussion

Section 5.1 Project Outcome
Section 5.2 Testing

Chapter 6. Conclusion and Further Work

Appendix.

References
Project plans (Gantt Chart, Work-Breakdown Structure, etc.)
Peer assessment form

- Approaches to writing
- Order of writing
- Data Presentation
- Citing References
- Comparison Essay
- Lead paragraph

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Evolution Approach

- ▶ In this approach you begin to write parts of your report and rewrite these parts as your project progresses (drafting and redrafting).
- ▶ Each part thus evolves and matures over a period of time as new ideas emerge and your understanding increases.
- ▶ Thus, you do not sit down at the end of your project and write your report as a one-off.
- ▶ You write it over a much longer period of time throughout your project.

- Approaches to writing
- Order of writing
- Data Presentation
- Citing References
- Comparison Essay
- Lead paragraph

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Evolution Approach

- Approaches to writing
- Order of writing
- Data Presentation
- Citing References
- Comparison Essay
- Lead paragraph

- ▶ The evolutionary delivery leads to a number of drafts of the report on which you may require feedback from your supervisor.
- ▶ It would be inappropriate to overwhelm your supervisor with draft after draft to read through – each one containing only minor changes to the previous version.



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Order of Writing

- Approaches to writing
- Order of writing
- Data Presentation
- Citing References
- Comparison Essay
- Lead paragraph

- ▶ **Identify structure.**
This relates to the content of your report, using a report breakdown structure. ([slide 6](#))
- ▶ **Identify presentational style.**
You should also try to set standards at this stage on the presentational aspects of your report, for example, its layout, font, numbering conventions, etc.



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Order of Writing

- Approaches to writing
- **Order of writing**
- Data Presentation
- Citing References
- Comparison Essay
- Lead paragraph

► Draft the introduction.

- The introduction gives the reader an idea of the report's content so it should also help you to clarify your own ideas.
- At this stage, however, your introduction will only be a first draft as your ideas are bound to evolve and your emphasis change by the time you have completed your report.

► Develop the main body.

- The main body of your report is the next part you should work on.
- You might include chapters such as background and related work, design approach/ methodology, implementation.
- You may find that you write parts of the main body of your report as your project progresses and you will not necessarily write each chapter or section in order.

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Order of Writing

- Approaches to writing
- **Order of writing**
- Data Presentation
- Citing References
- Comparison Essay
- Lead paragraph

► Articulate conclusions and make recommendations.

- Quite clearly, your conclusions and recommendations should be one of the last things that you complete.
- Only when your project is complete will you fully understand what you have achieved and be able to present your final ideas and recommendations.

► Complete the introduction.

- As part of the evolutionary approach to writing, you may well find that your introduction needs some reworking after you have completed the rest of your project's report.
- You may want to include some text alluding to your final results or introduce more background on a topic you have since focused on in more detail within your report.

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Order of Writing

- Approaches to writing
- **Order of writing**
- Data Presentation
- Citing References
- Comparison Essay
- Lead paragraph

▶ Write the abstract.

- You cannot really write a clear abstract for your report until you know what has been included in it.
- The abstract should summarize the entire report.

▶ Add references and appendices.

- Although you will be collating references and appendix material as your project progresses, you should not complete their presentation until the rest of the report has been written. References may be added or deleted and you may decide to include or exclude material from the appendices.

▶ (slide 6)



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Order of Writing

- Approaches to writing
- **Order of writing**
- Data Presentation
- Citing References
- Comparison Essay
- Lead paragraph

▶ Proofread, check and correct.

- It is vitally important to proofread your report after it is completed.
- Checking spelling and grammatical errors
- Formatting, Figures, Tables, references.



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Data Presentation

- Approaches to writing
- Order of writing
- **Data Presentation**
- Citing References
- Comparison Essay
- Lead paragraph

- ▶ All figures and tables that you include within your report should be clearly and uniquely labelled with a number and a short description.
- ▶ It is common to label a table and a figure with the same number; for example, Table 8.1 and Figure 8.1 refer to two different items within a report.
- ▶ When labelling a figure, it is usual to put the caption beneath the figure.
- ▶ When labelling a table, it is often better to place the caption above the table.

Data Presentation – Example

- Approaches to writing
- Order of writing
- **Data Presentation**
- Citing References
- Comparison Essay
- Lead paragraph

- ▶ Table 8.1 (Figure 8.3) presents the final degree classifications of 100 students who completed their Computer Science course in 2009.

Table 8.1 Degree classification of 100 students

1st	2:1	2:2	3rd	Pass	Fail
7	23	38	17	10	5

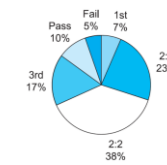


Figure 8.6 Pie chart showing degree classification of 100 students

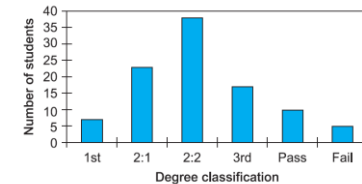


Figure 8.3 Bar chart showing degree classification of 100 students

Data Presentation

- Approaches to writing
- Order of writing
- **Data Presentation**
- Citing References
- Comparison Essay
- Lead paragraph

- ▶ Use figures and tables within your report only when they can add something of value.
- ▶ Which figure you use would depend on what you were trying to emphasise or explain within your report.
- ▶ You would use a pie chart to discuss proportions and a bar chart to discuss distributions.



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Exercise – What kind of chart?

- Approaches to writing
- Order of writing
- **Data Presentation**
- Citing References
- Comparison Essay
- Lead paragraph

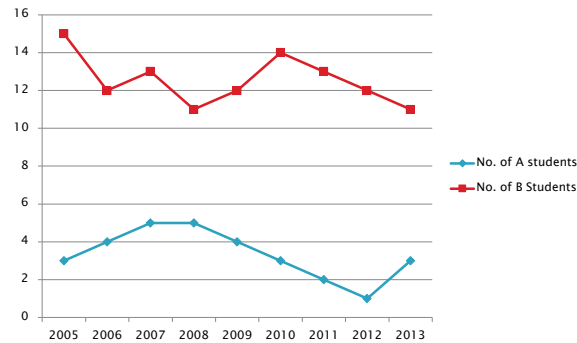
	No. of A students	No. of B Students
2005	3	15
2006	4	12
2007	5	13
2008	5	11
2009	4	12
2010	3	14
2011	2	13
2012	1	12
2013	3	11



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Line Chart

- Approaches to writing
- Order of writing
- **Data Presentation**
- Citing References
- Comparison Essay
- Lead paragraph



What is missing in this figure?

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Bibliography (References)

- Approaches to writing
- Order of writing
- Data Presentation
- **Citing References**
- Comparison Essay
- Lead paragraph

- ▶ If you need to write a research paper, chances are you'll also be required to include a **bibliography**.
- ▶ These are all just different names for the same thing: [a list of sources](#) — such as books, articles, or even websites — that you used to research and write your paper.
- ▶ A bibliography makes it easy for someone else to see where you found your information.

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Bibliography (References) Examples

- Approaches to writing
- Order of writing
- Data Presentation
- **Citing References**
- Comparison Essay
- Lead paragraph

Reference examples:

- ▶ [1] Harold Abelson, Gerald Jay Sussman, and Julie Sussman. Structure and Interpretation of Computer Programs. MIT Press, Cambridge, Massachusetts, 1985.
- ▶ [2] Ronald J. Brachman and James G. Schmolze. An overview of the KL-ONE knowledge representation system. Cognitive Science, 9(2):171–216, April–June 1985.
- ▶ [3] Matlab documentation.
http://www.mathworks.com/help/?s_tid=hp_ff_s_doc [Mar. 6, 2014].

Reference Style

- Approaches to writing
- Order of writing
- Data Presentation
- **Citing References**
- Comparison Essay
- Lead paragraph

- ▶ Different academic disciplines use their own styles guides, such as **MLA**, **APA**, and **Chicago**.
 - the *Harvard System*
 - *The Numeric System (also called the Vancouver System)*.
 - *Chicago is a form similar* to Harvard;
 - *MLA-style and CBE-style* are forms based on the numeric system).
 - "unsrt style" in the Final Year Project

UNSRT style

- Approaches to writing
- Order of writing
- Data Presentation
- **Citing References**
- Comparison Essay
- Lead paragraph

- ▶ In LaTeX, one can use a number of different bibliography styles.
- ▶ The unsrt (unsorted) BibTeX style is one of the four standard bibliography styles in BibTeX.
- ▶ This style defines the layout of the pointers in the body text (e.g. "[1]"), as well as the layout of the reference list.

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Listing References

- Approaches to writing
- Order of writing
- Data Presentation
- **Citing References**
- Comparison Essay
- Lead paragraph

References are in the following format:

Author, "Title of the Work," Forum where it Appeared (journal, conference, web, ...), Year.

- ▶ Book:
Author, Title of the book, name of publisher, city /state of publisher, Year.
- ▶ Paper in a Journal:
Author, "title of the paper", *name of Journal*, volume and number, page number, month, year
- ▶ Paper in a conference
Author, "title of the paper", *name of conference*, city of the conference, month, year
- ▶ Website
Title of the website, website URL, [date of access]

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- Approaches to writing
- Order of writing
- Data Presentation
- **Citing References**
- Comparison Essay
- Lead Paragraph

Why is Referencing necessary?

- ▶ **Avoid plagiarism.**
 - To give credit to people with their ideas.
- ▶ **Identify context.**
 - This will strengthen your report by showing how it builds and extends the work of others and how it resides within a recognised academic field of study.
- ▶ **Support and validate.**
 - To support your own arguments and validate any statements that you make.
- ▶ **Identify sources.**
 - By identifying sources clearly, people reading your report will be able to locate the articles you have used.

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Citations

- Approaches to writing
- Order of writing
- Data Presentation
- **Citing References**
- Comparison Essay
- Lead paragraph

- ▶ Whenever you use information from one of your sources, you'll need to give credit—or **cite** them.
- ▶ This is known as making a citation.
- ▶ Include citations whenever you use information from a source or when you quote a source directly.

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Citations

- Approaches to writing
- Order of writing
- Data Presentation
- **Citing References**
- Comparison Essay
- Lead paragraph

- ▶ Make sure to cite all the sources you use and provide full citations even for the webpage URL.
- ▶ Citations within the text should be numbered consecutively.
- ▶ The corresponding number is to appear enclosed in square brackets, such as [1] or [2]–[5].
- ▶ The corresponding references are to be listed in the same order at the end of the paper, in the References section.



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Citations Example

- Approaches to writing
- Order of writing
- Data Presentation
- **Citing References**
- Comparison Essay
- Lead paragraph

▶ Citing in the body of the text

- When you cite a piece of work you use a number which will correspond with the full details of the book, journal article etc which will be written in your reference list.
- The report [1] emphasises that the research was ...

▶ References

- [1] Harold Abelson, Gerald Jay Sussman, and Julie Sussman. Structure and Interpretation of Computer Programs. MIT Press, Cambridge, Massachusetts, 1985.
- ▶ <http://www.mackichan.com/products/shells/is-unsrt.pdf>



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Class exercise

- Suppose you want cite the conference paper. Write the reference in unsrt style. Try now.

- Approaches to writing
- Order of writing
- Data Presentation
- Citing References
- Comparison Essay
- Lead paragraph

15th European Signal Processing Conference (EUSIPCO 2007), Poznan, Poland, September 3-7, 2007, copyright by EURASIP

INTRODUCTION TO SINGLE CARRIER FDMA

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ABSTRACT

Single carrier frequency division multiple access (SC-FDMA) which utilizes single carrier modulation at the transmitter and frequency domain equalization at the receiver is a technique that has similar performance and essentially the same overall structure as those of an OFDMA system. One prominent advantage over OFDMA is that the SC-FDMA signal has lower peak-to-average power ratio (PAPR). SC-FDMA has drawn great attention as an attractive alternative to OFDMA, especially in the uplink communications where lower PAPR greatly benefits the mobile terminal in terms of transmit power efficiency. SC-FDMA is currently a working assumption for the uplink multiple access scheme in 3GPP Long Term Evolution (LTE).



<https://ieeexplore.ieee.org/document/7099187>

https://www.researchgate.net/publication/228583513_Introduction_to_single_carrier_FDMA

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Online Shopping Mall Comparison of two e-commerce websites

Comparison Essay

- Approaches to writing
- Order of writing
- Data Presentation
- Citing References
- **Comparison Essay**
- Lead paragraph

- ▶ A **comparison** essay notes either *similarities*, or *similarities and differences*.
- ▶ A **contrast** essay notes only *differences*.
- ▶ The comparison or contrast should **make a point** or **serve a purpose**. Often such essays do one of the following:
 - **Clarify** something unknown or not well understood.
 - Lead to a fresh **insight** or new way of viewing something.
 - Bring one or both of the subjects into sharper **focus**.
 - Show that one subject is **better** than the other.

Comparison Essay


- Approaches to writing
- Order of writing
- Data Presentation
- Citing References
- **Comparison Essay**
- Lead paragraph

- ▶ Compare and contrast is high on Bloom's Taxonomy of critical reasoning.
- ▶ Compare and contrast is associated with a complexity level where students break down ideas into simpler parts in order to see how the parts relate.
- ▶ For example, students may need to categorize, classify, dissect, differentiate, distinguish, list, and simplify.
- ▶ Two common methods are **point-by-point**, and **block** method.

- Approaches to writing
- Order of writing
- Data Presentation
- Citing References
- **Comparison Essay**
- Lead paragraph

Point-by-point method

Point by Point Format: AA, BB, CC


- ▶ In the point by point format, the students can compare and/or contrast the subjects using the same characteristics within each body paragraph.
 - ▶ This format helps to concentrate on the characteristic(s) which may result in a more equitable comparison or contrast of the subjects within each body paragraph(s).
 - ▶ The final concluding paragraph should give a general summary of the most important similarities and differences.
- 

- Introduction
- Body
- Conclusion

Point by Point Example

Comparing PC and Mac, in terms of software, compatibility, and cost.

- ▶ Introduction: PC vs. Mac
 - Begin with a sentence that will catch the reader's interest. Then name the two subjects and say they are very similar, very different or have many important (or interesting) similarities and differences.

There are certain two-sided debates that are just destined to be eternal. Chocolate vs. vanilla. Snowboarding vs. skiing. And if we skip over politics, the biggest ongoing discussion has to be the one that's dominated the technological world for well over two decades: the Mac vs. PC debate....*
- 

- Introduction
- **Body**
- Conclusion

Point by Point Example (1)

- ▶ Body:
 - Software
 - Compatibility
 - Cost
- Each paragraph should have a topic sentence.
- Each paragraph should contain some comparisons.
- Each paragraph should then have contrast that proves the point of the topic sentence – software, compatibility, cost.



- Introduction
- **Body**
- Conclusion

Point by Point Example (2)

- ▶ *Software*
 - *First of all, in comparing software, for the most part, the two are neck and neck. Microsoft has even released Microsoft Office specifically for Mac, proving Apple and Microsoft can get along. All and all, Macs are more software compatible as PCs only support Windows friendly software. Both systems support most open-source software. Software for both systems is user friendly and easy to learn.*



- Introduction
- **Body**
- Conclusion

Point by Point Example (3)

► *Compatibility*

- *Unlike a PC, a Mac can also run Windows. If you want to have a combination of Mac and PC, a Mac is your best option.*



- Introduction
- **Body**
- Conclusion

Point by Point Example (4)

► *Cost*

- *The final Mac vs. PC comparison comes down to cost. For many users, cost is the key. You want to get the absolute most for your money. In the past years, PCs dominated the budget-friendly market, with Macs ranging anywhere from \$100 to \$500 more than a comparable PC. Now this price gap has lessened significantly. However, you will notice a few key features that Macs tend to lack in order to provide a lower price: memory and hard drive space.*



- Introduction
- Body
- Conclusion

Point by Point Example (5)

- ▶ Conclusion: Summary. Restating the significance of the discussion

In the end, the choice comes down to personal preference. Due to price and availability, PCs tend to be the winner, while Macs remain the choice for the more elite or anti-Microsoft computer users.

- ▶ <http://www.intel.com/content/www/us/en/tech-tips-and-tricks/pc-vs-mac-the-big-debate.html>
- ▶ <https://www.tactechcool.com/2020/01/30/should-i-buy-a-mac-or-a-pc/#:~:text=Microsoft%20has%20even%20released%20Microsoft,friently%20and%20easy%20to%20learn.>
- ▶ <https://medium.com/@tryinghisbest/mac-vs-pc-48cc79fac0d6>

Block methods

Block Format Essay: A, B, C points vs A, B, C points.

- ▶ The body paragraph(s) after the introduction describe characteristic(s) of the first subject. The evidence and examples that prove the similarities and/or differences exist should be provided.
- ▶ Do not mention the second subject.
- ▶ Each point could be a body paragraph.
- ▶ The benefit of this format is that it allows the writer to concentrate on one characteristic at a time.
- ▶ The drawback of this format is that there may be some imbalance in treating the subjects to the same rigor of comparing or contrasting.
- ▶ The conclusion is in the final paragraph, the student should provide a general summary of the most important similarities and differences.

Block Method Example (1)

Comparing PC and Mac, in terms of software, compatibility, and cost.

- ▶ Introduction and Conclusion: same as point by point
- ▶ Body:
 - PC: Software, compatibility, and cost
 - Transition (On the other hand)
 - Mac: Software, compatibility, and cost
- ▶ Conclusion:

PC is preferred over Mac. (This is crucial in clarifying the comparison and contrast)



Block Method Example (2)

- ▶ A **PC** generally refers to a computer that runs on the Windows operating system. It is also defined as an IBM-compatible computer, thereby meaning that its architecture is based on the IBM microprocessor. A number of different operating systems are compatible with PCs; the most popular of which is Microsoft Windows. Some others are the UNIX variants, such as Linux, FreeBSD, and Solaris.
- ▶ On the other hand **Macintosh**, commonly known as **Mac**, is a brand name which covers several lines of personal computers designed, developed, and marketed by Apple Inc. The Mac is the only computer in the world that can run all the major operating systems, including Mac OS, Windows. With software like Parallels Desktop or VMware Fusion they can be run; side by side.



Writing – Chapter 2 (ISI report)

- ▶ **Chapter 2. Background and Related Work**
 - *Lead paragraph*
 - *Section 2.1 Background*
Describe the general features of e-commerce platforms, with attention to those that you plan to implement in the project.
 - *Section 2.2 Related work*
Compare your planned system with two or more existing web sites or e-commerce packages. Describe reference systems that will be used in the modelling and design.
 - **Note that you should include proper citations and references as well.**

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Purpose of Ch.2 of ISI Report

- ▶ Involves a thorough study of a particular area:
 - improve your understanding of that area;
 - identify strengths and weaknesses within the area;
 - discuss how the field has evolved, and acknowledging areas suitable for further development and investigation;
 - provide the reader with an understanding of the area in which your project lies and an idea of where and how your project fits into this field;
 - set your project into an overall *context* and will show that it is bound within a recognized field – not an idea that you've had that makes no sense and has no recognizable foundation.

The idea is similar to that of a literature review.

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How to write a literature review

- ▶ Watch this video until 9:48 and answer the following questions:
<https://www.youtube.com/watch?v=Iw8HPXJP1VA&feature=youtu.be>
 - Why is literature review needed?
 - What is a good way to figure out if a resource is relevant?



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Lead Paragraph

- ▶ A **lead** paragraph is the opening paragraph of an article, essay, news story or book chapter.
- ▶ It precedes the main body of the article, and it gives the reader the main idea of the story.



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Lead Paragraph – Example

Electronic commerce (e-commerce) is a type of industry where the buying and selling of products or services are conducted over the Internet or other computer networks. This chapter describes the background and related work of the project. The general features of e-commerce websites are reviewed in the background section. In addition, the comparison between Amazon and our works are discussed in the related work section.

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Lead Sentence (1)

- ▶ The lead (topic) sentence is the sentence that leads the rest of the paragraph.
- ▶ Keep your topic sentences at the beginning of the paragraph.
- ▶ The average reader will only read the rest of your paper if the first sentence (and title!) interests him.

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Lead Sentence (2)

- ▶ Every paper has a beginning sentence, a lead sentence. This is the most crucial sentence in the whole paper.
- ▶ Your first sentence is so important that you really should write several and choose the best.



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Lead Sentence (3)

- ▶ If writing a personal essay, consider what is the most interesting aspect of your topic and draw the reader's curiosity with a question or statement.

Example: *Am I inside the belly of a dinosaur?*



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Lead Sentence (4)

► Types:

- Create a feeling of suspense.
- Share an interesting fact.
- Share a belief.
- Capture a moment in time.
- Ask an interesting question.
- Use a quotation or piece of dialogue.



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Lead Sentence – Examples

- When I woke up, I was inside the dinosaur's belly.
- Today, I am going to do the dive that haunts me.
- During my birthday party last year, my brother ruined my life.
- A 310 feet drop?! 93 miles per hour?! Could I really handle this?



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Class Exercise A

▸ Passage A: Patience

For example, recently I began taking my two-year-old dog to obedience school. After four weeks of lessons and practice, she has learned to follow only three commands--sit, stand, and lie down--and even those she often gets confused. Frustrating (and costly) as this is, I continue to work with her every day. After dog school, my grandmother and I sometimes go grocery shopping. Inching along those aisles, elbowed by hundreds of fellow customers, backtracking to pick up forgotten items, and standing in the endless line at the checkout, I could easily grow frustrated and cranky. But through years of trying times I have learned to keep my temper in check.

Give a topic sentence

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Class Exercise B

▸ Passage B: Love of Reading

When I was a young girl, I would make a tent out of my blankets and read Nancy Drew mysteries late into the night. I still read cereal boxes at the breakfast table, newspapers while I am stopped at red lights, and gossip magazines while waiting in line at the supermarket. In fact, I'm a very talented reader. For example, I've mastered the art of talking on the phone while simultaneously reading Dean Koontz or Stephen King. But *what* I read doesn't matter all that much. In a pinch, I'll read junk mail, an old warranty, a furniture tag ("DO NOT REMOVE UNDER PENALTY OF LAW"), or even, if I'm extremely desperate, a chapter or two in a textbook.

Give a topic sentence

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References

- ▶ Christian W. Dawson (2015), Projects in Computing and Information Systems, A Student's Guide, Third Edition, Pearson Education Limited.
- ▶ <http://writingcenter.unc.edu/handouts/verb-tenses/>

