

# **Lecture 4: Report Content and Supporting Sections**



# Report Contents and Supporting Sections

**In this chapter we will discuss the following:**

- **Part 1: Report Introduction Section**
- **Part 2: Report Main Text Section**
- **Part 3: Report Concluding Section**
- **Part 4: Report Supporting Sections**
  - **Summary**
  - **Abstract**
  - **Title**
  - **Appendixes**
  - **References**

# **Part 1: Report Introduction Section**



# Introduction

- The Introduction in all forms of exposition(عرض) is important because:
  1. It prepares the reader to receive, with greatest economy of effort, what the writer intends to present.
  2. The Introduction permits you to launch immediately into the task of relating your readers to the subject matter of the report.

# Introduction

3. Specifically the Introduction makes clear the following:
- The precise subject to be considered.
  - Indicates the reasons for considering the subject.
  - Lays out the organization and scope of the report.

# Introduction

**This is where you tell the reader:**

- **What you plan to tell**
- **Why you tell it**
- **How you will tell it.**

# Introduction

The Introduction should:

focus your readers' attention on the subject to be treated.

“It should enable them to approach the body of the report naturally and intelligently”.

# Introduction

- Writers should always keep in their minds that their readers should never be:
  1. Confused
  2. Unpleasantly surprised
  3. Disappointed with what they are told throughout the report.



## INTRODUCTION

Currently many companies are using mechanical data recorders to define the shipping environment. Other companies are not using data recorders at all. This paper explains why companies should consider utilizing electronic shock and vibration data recorders.

In order to show why the electronic data recorders are better than mechanical data recorders this paper will discuss these items:

- differences in the two types of recorders' accuracy and functionality,
- the ability to create better test plans using an electronic data recorder,
- ways in which electronic data recorders reduce costs by defining the distribution environment and refuting damage claims,
- and the ease of downloading and analyzing data by means of an electronic data recorder.

## Introduction

More and more people turn to the Internet as their primary source of information and ideas. It is important for professionals to be able to find information on the Web to supplement their jobs, but it is also important that consumers be able to find information. For example, the food guide pyramid is a nutrition information graphic that people see mentioned in many places-on food labels, in television news programs, and in magazine articles.

In order to do my job more effectively as a dietitian, I need to know whether there is credible and current information on the Internet for my clients and patients to access. The purpose of this project is to evaluate whether or not the Internet is a valuable source for finding information on the food guide pyramid for consumers.

# Why bother writing a good introduction?

1. You never get a second chance to make a first impression. The opening paragraph of your report will provide your readers with their initial impressions of your **argument**, your **writing style** and the **overall quality** of your work.

A **vague**, **disorganized**, or **boring** introduction will probably create a negative impression. But a concise and well written introduction will start your readers off thinking highly of your writing and your report.

# Why bother writing a good introduction?

2. your introduction will make your readers want to read your report. The introduction should capture your readers interest, making them want to read the rest of your report.

# Why bother writing a good introduction?

3. your introduction is an important road map for the rest of your report. The introduction makes clear how the body of the report will develop.

# Why bother writing a good introduction?

**For example, Your Introduction should answer the following questions: -**

- 1. Were data produced and analyzed and the results summarized?**
- 2. Were conclusions drawn?**
- 3. Was there an initial theoretical model?**
- 4. Was there a subsequent analytical model?**
- 5. Did the data create a new understanding?**
- 6. Is the report only an analysis?**
- 7. Are comparisons made?**

# Why bother writing a good introduction?

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The style , order of thinking and logical arrangement in the Introduction should be consistent with those in the main body of the report.

## **Suggestions for writing a good introduction :**

- 1. Pay special attention to your first sentence (free of errors and vagueness).**
- 2. Be straightforward and confident  
avoid statements like:**

**“ in this report , I will argue that frank valued education”.**

**Because although this statement points toward main argument but it is not interesting.**



# Suggestions for writing a good introduction :

**It is more convincing to tell that:**

**“ Frank valued education “**

**than to tell us that you are going to say that he did.**

- 3. Assert (state) your main argument confidently, you can't expect your reader to believe it if it doesn't sound like you believe it.**

## Suggestions for writing a good introduction :

4. Don't be afraid to write a tentative ( مؤقت ) Introduction first and then change it later.
5. Don't spend a lot of time into the introduction telling the reader what you did not do. Be clear about what you did do.
6. Include in your introduction the problem, proposed solution , background and related works.

# Functions of the introduction

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**Functions of the Introduction can be divided into two categories as follows: -**

- **Primary Functions**
- **Secondary Functions**

# Primary Functions

**Primary functions can be listed as follows:**

- **Statement of subject**
- **Statement of purpose**
- **Statement of organization and scope**

# Primary Functions

## Statement of subject

- The first function of the Introduction is to **identify immediately and unmistakably the exact subject of the report.**

**“ WHAT is going to be considered in the report?”**

- It is necessary to define and bound the subject in order to guard against misunderstanding.

# Primary Functions

## Statement of purpose

A second, and equally important, function of the Introduction is to **state clearly the reasons for discussing the particular subject.**

**“ WHY was the report written?”**

It should indicate: -

- The importance of the subject to the reader.
- Make clear your objective.
- Relate the report to previous and similar work.

# Primary Functions

- The extent to which background is given depends largely on the type of your technical report being written.
- Often a few key references are available to tie the new work to what preceded it and to the new studies that it touches immediately and directly. But a paper that starts a new field demands a broad perspective in relating the new field to other fields

# Primary Functions

## Note:

*The purpose that you express in the introduction must be shaped by consideration of your readers like: -*

- *Why should they read the report*
- *What good will it do to them*



# Primary Functions

## *Statement of organization and scope*

- A third primary function of the Introduction is to lay out the organization that will be followed in the report.

“HOW is your problem going to be discussed”?

- Give your readers a look at what lies ahead; furnish them an itinerary (schedule).

# Primary Functions

- Your readers should know at the outset (start) the scope and limitations of your work.
- For example, does your project describe special theories, new or unusual procedures, unique ideas, anything that contributes to the uniqueness of the subject? So that your readers can orient the report to their special interests and needs.

# Secondary Functions

- The place or places where the research was conducted.
- The introduction should mention unusual aspects of a report such as:-
  - A film
  - A videotape
  - A microfiche
  - A computer program supplement

# Secondary Functions

- Use of dates is generally necessary only when: -
  - A long delay in reporting is encountered.
  - Where publication is in a highly competitive field of research and a scoop or patent is involved.

# Style and Length

## Style:

- The introduction may vary in style within certain bounds
- The limits imposed are that the language be clear, direct, and accurate.

# Style and Length

- The task is rendered (made) fairly easy in that the Introduction is not highly formalized.

*For example, the Introduction three primary functions should not be reeled off in 1-2-3 order, “the subject is..,” “the purpose is..,” “the organization and scope are ..,” Instead they should be built into a few paragraphs of expository writing in a style that will be both pleasant to read and unmistakably clear.*

# Style and Length

- One outstanding rule for the style of the Introduction is to construct the first, or theme, sentence so that attention is decisively (حاسم), and immediately focused on the precise subject to be treated and, if possible, on the method of approach.

# Style and Length

## Length

- A page, more or less, is the usual length of an Introduction.

*“But in reality the length of the report depends on how much background must be given, and that depends on the kind of report”.*



# Example: Which is better?

- **Introduction (A)**

The purpose of this project is to introduce our group's two conceptual designs. We have included the following sketches for each car: 3 dimensional view, elevation, plan, front, rear and interior view. Also, we have included a discussion of how the designs meet the criteria given in the project outline. The cars could be suitable for short trips in busy areas.

- **1. Introduction (B)**

With the rise in global warming and increasing pollution levels, it is becoming essential to find a viable alternative to the internal combustion engine petrol powered car. The aim of this project was to create two designs for a fuel cell powered car, the main criteria being environmental friendliness in terms of both emissions and materials. This report presents the designs for two such cars, each of which includes the following components: engine, fuel, wheels, accessories, safety features and materials. Car A is aimed at the upper end of the market, while Car B is a mid-range vehicle suitable for family use.

A description of the design and an analysis of operational efficiency for each car are followed by a comparison of the two designs. Finally, the most cost efficient design is recommended.

# Example: Which is better?

- **Introduction (A)**

The purpose of this project is to introduce our group's two conceptual designs. We have included the following sketches for each car: 3 dimensional view, elevation, plan, front, rear and interior view. Also, we have included a discussion of how the designs meet the criteria given in the project outline. The cars could be suitable for short trips in busy areas.

- **1. Introduction (B)**

With the rise in global warming and increasing pollution levels, it is becoming essential to find a viable alternative to the internal combustion engine petrol powered car. The aim of this project was to create two designs for a fuel cell powered car, the main criteria being environmental friendliness in terms of both emissions and materials. This report presents the designs for two such cars, each of which includes the following components: engine, fuel, wheels, accessories, safety features and materials. Car A is aimed at the upper end of the market, while Car B is a mid-range vehicle suitable for family use.

A description of the design and an analysis of operational efficiency for each car are followed by a comparison of the two designs. Finally, the most cost efficient design is recommended.

subject

Purpose

Scope

organization

# Answer: Introduction B is better

- Introduction A is weak.
  - 1-There is no background information to set the topic in context.
  - 2-The topic itself is not clearly stated.
  - 3-The design criteria and key features of the designs are not mentioned.
  - 4- No structure outline is given.
  - 5- The section number is not given in the heading.

# Introduction-Example

## **The Effects of Increased Atmosphere Carbon Dioxide**

### **Introduction**

Before the year 2010 , the climate of the earth may be warmer than any time in the past thousand years. This change , which is incredibly fast by geological time scales, will be brought about by increased levels of carbon dioxide in the earth's atmosphere. The most important source of excessive CO<sub>2</sub> is the burning of carbon –based fossil fuels for energy production.

The fact that changes in CO<sub>2</sub> concentrations in the atmosphere could cause changes in the earth's climate has been known for over one hundred years. However ,only in the last 5 to 10 years has significant research been done in this field .the most ominous of the effects of a warmer climate will be shifting of local weather patterns. It is obvious that the continued introduction of co<sub>2</sub> into the atmosphere will have consequences far worse than producing slightly balmy climate.

The purpose of this report is to examine the climatic changes caused by increased carbon dioxide in the atmosphere and their implications for society. Also discussed will be mechanisms of green house effect , the sources and reservoirs of carbon dioxide and some possible methods to reduce the magnitude of the problem.

# Introduction-Example

## The Effects of Increased Atmosphere Carbon Dioxide

### Background

Before the year 2010 , the climate of the earth may be warmer than any time in the past thousand years. This change , which is incredibly fast by geological time scales, will be brought about by increased levels of carbon dioxide in the earth's atmosphere. The most important source of excessive CO<sub>2</sub> in the burning of carbon –based fossil fuels for energy production.

### Statement of Subject

The fact that changes in CO<sub>2</sub> concentrations in the atmosphere could cause changes in the earth's climate has been known for over one hundred years. However ,only in the last 5 to 10 years has significant research been done in this field .the most ominous of the effects of a warmer climate will be shifting of local weather patterns. It is obvious that the continued introduction of co<sub>2</sub> into the atmosphere will have consequences far worse than producing slightly balmier climate.

### purpose

The purpose of this report is to examine the climatic changes caused by increased carbon dioxide in the atmosphere and their implications for society. Also discussed will be mechanisms of green house effect , the sources and reservoirs of carbon dioxide and some possible methods to reduce the magnitude of the problem.

### Scope

# What is not in the Introduction?

In the Previous example :

1. There is no Secondary Functions .
2. No Statement of organization

# DVD Introduction -Solution

## Subject

Digital Versatile Disc, or DVD is a collection of new optical disc technologies that have the potential to significantly improve the quality of a number of consumer electronics and personal computer products. These discs are capable of holding up to 17 gigabytes (GB) of data storage, with current research offering a potential for 15 times more storage. This technology is made available through advances in laser technology and advances in manufacturing processes for optical discs. A Digital Versatile Disc is basically a double density, double sided, compact disc. In addition, the laser used to read a DVD utilizes a shorter wavelength, allowing the storage surface of each of these layers to be more compact.

# DVD Introduction -Solution

The purpose of this report is to present the format, creation, current applications, and economic forecasts for DVD technology. **Purpose**



# DVD Introduction -Solution

## Scope

To emphasize the advances afforded using this technology, a side by side comparison with current Compact Disc technology will be used. Motorola's Research and Development is currently investigating the possibilities for implementation of a DVD Group to interact with current research and product groups.

# DVD Introduction -Solution

## Organization

This report will give the introduction and background necessary to determine the feasibility of DVD integration into current marketing and research products. This report will provide a simplified explanation of the construction methods required for DVD replication, solely for the purpose of presenting the difference in construction needed to manufacture a DVD.

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The four parts of this report will discuss (1) a technological overview of DVD, utilizing a comparison of CD vs. DVD technologies, (2) the construction of a DVD, (3) current applications utilizing DVD, and (4) projected sales and revenues of DVD devices. The technological overview section will use a comparison of current CD specifications vs. DVD specifications to convey the advances made possible using DVD. The construction section explains the manufacture of a DVD to show the physical advantages of DVD for data storage and retrieval. The section covering current applications examines the five current formats for DVD specifications and how they are currently being used today. Finally, the sales and revenues section includes forecasts of DVD sales and distribution, based upon current sales and technology release.

# DVD Introduction -Solution

**Note : There is no Secondary functions in this introduction**

## **Part 2: Report Main Text Section**



# Main Text

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- Test Procedure Section
- Format of Analysis Description
- Symbols Section
- Errors and precision

# Main Text

## 1. Test Procedure Section

- 1- Begin with an introductory paragraph that describes the kind of data obtained in the program.
- 2- Describe clearly the conditions studied in a few sentences and state your reasons for selecting these particular conditions.

# Main Text

- 3- Your test procedures should be described in enough detailed that your readers can *judge* the value of the results and could *repeat* the experiment.
- 4- If the procedures are described in detail in other publications, reference them and only briefly describe the major steps.

# Main Text

- 5- You have to include **enough description** to give an overall picture of the operation. A unique operation will require more detail.
- 6- Make sure if your **calculations** performed based on conventional or no conventional methods.



# Main Text

- If the calculations performed are conventional , reference the type of analysis made and include the final equations used.
- Non conventional methods are described in detail (if they are complex and lengthy use an appendix)

# Main Text

## 2. Format of Analysis Description

- Presenting results based on a theoretical analysis required you to replace the experimental description section by a section that might be entitled “Analysis Section”.

The Analysis section in the main text then includes: -

- A statement of the **problem**.
- The **assumptions** and **limitations** of the analysis.
- A brief description of the **general analytical method**. (Refer your readers to the appendix for details.)

# Main Text

The following notes should be taken seriously in preparing an Analysis section:

- **Equations** must be centered between margins and set off from the text by spacing.
- **The introductory material** should be presented in correct grammatical form and may be followed by a colon, a comma, or no mark of punctuation.

# Main Text

- Good attention should be paid to the Equations in terms of:
  - Their numbering
  - Their identification
  - A brace may be used to connect a group of equations with same number.
  - Equations in appendixes are usually numbered according to the appendix in which they appear.(A1,A2)
  - When a numbered equation is repeated, it must retain two things:
    - Its original number.
    - Its exact form.

# Examples

The relationship of the speed of propagation and the volumetric tissue fraction is given by:

$$v = \frac{1}{\sqrt{((1-h)K_t^{-1} + hK_f^{-1})((1-h)\rho_t + h\rho_f)}} \quad (1)$$

We can see from Eq. (1) that...

# Examples

$$H_{2J2J} = \begin{vmatrix} H_J & H_J \\ H_J & -H_J \end{vmatrix} \dots\dots\dots (2)$$

# Examples

$$\begin{aligned} \text{New}\delta_{pk} &= (1 + e^{\frac{(Y_{pk} - O_{pk})^2}{\sum w_{ij} x_i}}) \cdot f'(\sum w_{ij} x_i) \\ &, \text{ if } (Y - O) > \text{zero}. \end{aligned} \quad (3.2a)$$

$$\begin{aligned} \text{New}\delta_{pk} &= -(1 + e^{\frac{(Y_{pk} - O_{pk})^2}{\sum w_{ij} x_i}}) \cdot f'(\sum w_{ij} x_i) \\ &, \text{ if } (Y - O) < \text{zero}. \end{aligned} \quad (3.2b)$$

$$\begin{aligned} \text{New}\delta_{pk} &= 0 \\ &, \text{ if } (Y - O) = \text{zero}. \end{aligned} \quad (3.2c)$$

## Examples

$$A = \begin{pmatrix} a & b \\ c & d \end{pmatrix} = \begin{pmatrix} r \cos \theta & -s \sin \phi \\ r \sin \theta & s \cos \phi \end{pmatrix} \dots (2)$$



## Examples

$$\delta^o_{pk} = (Y_{pk} - O_{pk}) \bullet f^{o'}_k(\text{net}^o_{pk}) \quad (2.5)$$

# Example: Discussion: Subdivided

The discussion contains an analysis of the technical issues important to the report. It supports the main issues of the report by providing evidence and explanations. It should be subdivided into topics, each with a subheading as follows:

- **ABSTRACT**
- **INTRODUCTION**
- **TECHNICAL ANALYSIS**
  - Frequency Domain Analysis of Nonlinear Feedback Systems in Continuous Time.
  - The Effects of Sampling in Feedback Loop.
- **SYSTEM IMPLEMENTATION**
  - The System
  - System Analysis
- **RESULTS**
- **CONCLUSIONS**
- **RECOMMENDATIONS**
- **APPENDIX A – DESCRIBING FUNCTIONS**
- **APPENDIX B – FEEDBACK PROGRAMM**

# Main Text

## 3. Symbols Section

- Use consistent mathematical notation throughout a report.
- If only a few symbols are used, define each in the text as it first occurs.
- If many symbols are used, group their definitions in a separate section entitled “Symbols”.

# Main Text

- This section directly follows the introduction or is either the first or the last appendix.
- Make a symbols list an appendix when it contains more than 30 symbols.
- Symbols should be listed in alphabetical order with English symbols preceding Greek symbols, capital symbols precede corresponding lowercase ones, and these are followed by subscripts and then superscripts.

# Example: Greek symbols

Capital	Low-case	Greek Name
A	$\alpha$	Alpha
B	$\beta$	Beta
$\Gamma$	$\gamma$	Gamma
$\Delta$	$\delta$	Delta
E	$\varepsilon$	Epsilon
Z	$\zeta$	Zeta
H	$\eta$	Eta
$\Theta$	$\theta$	Theta

# Subscript and superscript

subscript — A subscript (as in  $\text{H}_2\text{O}$ , the molecular formula for water)

superscript — A superscript (as in  $x^2$ , the mathematical notation for  $x$  multiplied by itself)

# Main Text

- Acronyms , initialisms, abbreviations , and the symbols for chemical elements and compounds should be defined at their first occurrence in the Summary and again in the main text because they are not defined in the symbols section.
- Abbreviate units after numbers (5 m), but write them out otherwise.( meters)

# Examples

- **Acronyms :**

CIS : Computer Information System

- **Abbreviation :**

Mr. :Mister

Dr. : Doctor

- **Initials :**

Ahmed M. RADI : MOHAMMED



# Examples

- **Chemical Element :**

Ag , Na , Ca

- **Chemical Compound :**

NaCl , CO<sub>2</sub> , NH<sub>3</sub>

# Main Text

## ***4. Errors and Precision***

**Reports which are concerned with numerical values then**

- **Accuracy**
- **Precision**
- **Reproducibility**

**Of the data presented must be clearly stated, and discrepancies (تناقض) within the data should be explained.**

# Main Text

- Accuracy usually denotes the absolute correctness of the determination. ( الدقة المتناهية في القياس )
- Precision generally denotes the extent to which a result is free from random accidental errors.

Note: A result can be very precise (i.e., all measurements agree) but also inaccurate because of inherent errors in measurements.

- Reproducibility denotes the agreement, or lack thereof, between values obtained in like determinations at different times during the test program. Poor reproducibility may be the result of either the precision or the accuracy.

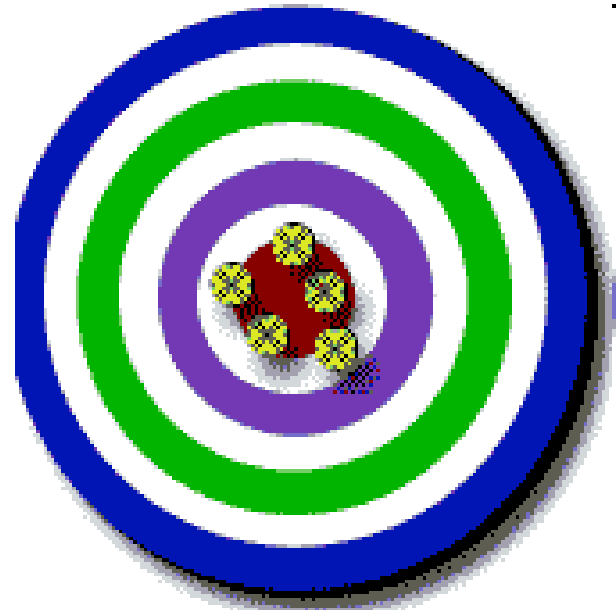
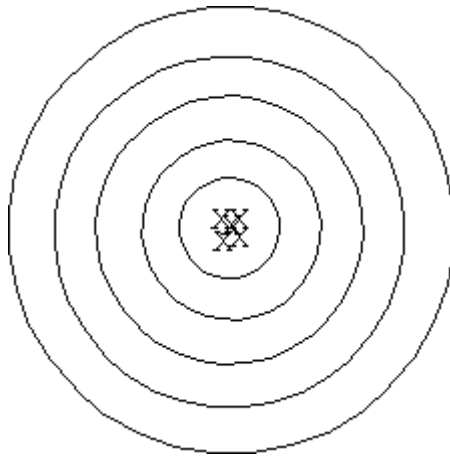
## Accuracy :

How close a measurement to the accepted value

## Precision:

How close together or how repeatable the results are (Range , Standard Deviation)

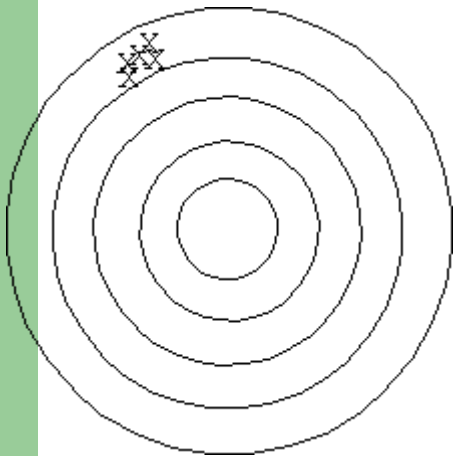
# Good accuracy good precision



## An example of a sensor with GOOD accuracy and GOOD precision

- Suppose a lab refrigerator holds a constant temperature of 38.0 F. A temperature sensor is tested 10 times in the refrigerator. The temperatures from the test yield the temperatures of: 38.0, 38.0, 37.8, 38.1, 38.0, 37.9, 38.0, 38.2, 38.0, 37.9. This distribution does show a tendency toward a particular value (high precision) and is very near the actual temperature each time (high accuracy).

# Poor accuracy good precision

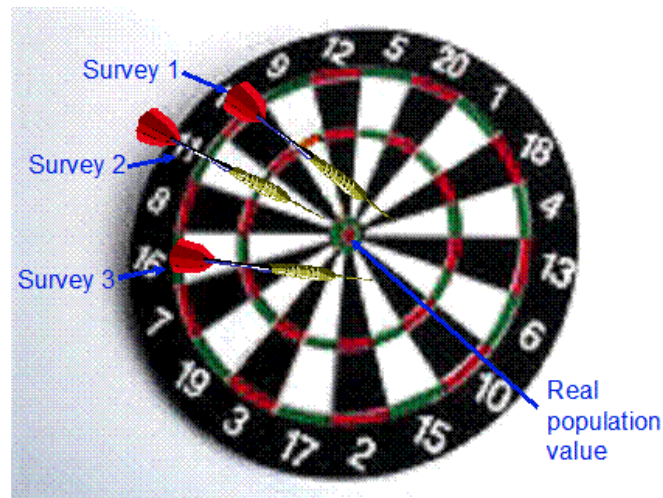
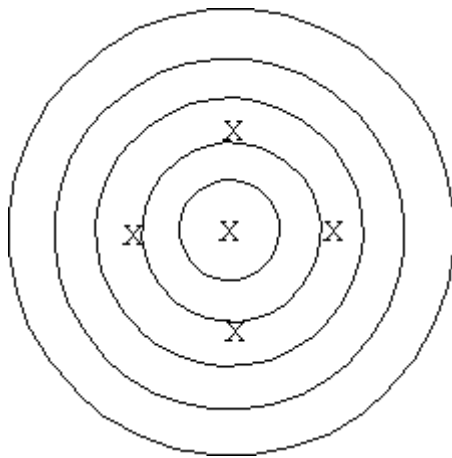


## An example of a sensor with BAD accuracy and GOOD precision:

- Suppose a lab refrigerator holds a constant temperature of 38.0 F. A temperature sensor is tested 10 times in the refrigerator. The temperatures from the test yield the temperatures of : 39.2, 39.3, 39.1, 39.0, 39.1, 39.3, 39.2, 39.1, 39.2, 39.2. This distribution does show a tendency toward a particular value (high precision) but every measurement is well off from the actual temperature (low accuracy).



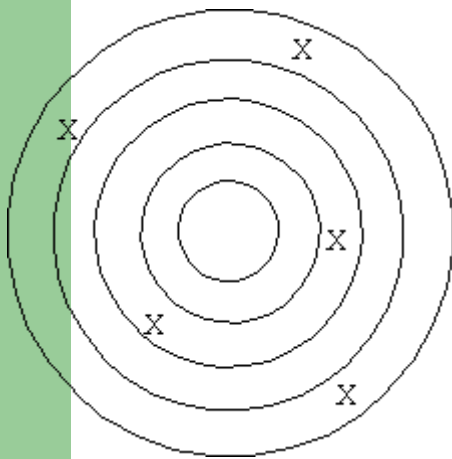
# High accuracy poor precision



## An example of a sensor with GOOD accuracy and BAD precision:

**Suppose a lab refrigerator holds a constant temperature of 38.0 F. A temperature sensor is tested 10 times in the refrigerator. The temperatures from the test yield the temperatures of: 37.8, 38.3, 38.1, 38.0, 37.6, 38.2, 38.0, 38.0, 37.4, 38.3. This distribution shows no impressive tendency toward a particular value (lack of precision) but each value does come close to the actual temperature (high accuracy).**

# Poor accuracy poor precision



## example of a sensor with BAD accuracy and BAD precision:

**Suppose a lab refrigerator holds a constant temperature of 38.0 F. A temperature sensor is tested 10 times in the refrigerator. The temperatures from the test yield the temperatures of: 39.4, 38.1, 39.3, 37.5, 38.3, 39.1, 37.1, 37.8, 38.8, 39.0. This distribution shows no tendency toward a particular value (lack of precision) and does not acceptably match the actual temperature (lack of accuracy).**

# Main Text

- A discussion of accuracy should contain an analysis of possible errors involved in individual measurements and how these errors are reflected in the final results. This generally expressed as the “maximum probable error”.
- A discussion of precision usually involves comparisons of duplicate results, and the precision is generally expressed in terms of a “deviation”.

# Main Text

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**Use standard methods of computing probable errors and deviations whenever possible, and indicate for your reader the method used.**

# Main Text

- Practical example:

## Case Study

The following is a part of your input data. You are required to calculate the following measures: -

The Range

The Mean (Average)

The Standard Deviation

After calculation you should discuss your results in relation to the Accuracy and Precision.

Data: - (32, 71, 64, 50, 48, 63, 38, 41, 47, 52).

## **Solution**

**Range = The largest value – the smallest one**

$$= 71 - 32 = 39$$

**Mean (Average) = Sum of the values / the values number**

$$X = 506 / 10 = 50.6$$



## **Part 3: Report Concluding Section**



# Concluding Section

- The **concluding** section is where you tell your readers what you have told them.
- The **Summary** and **Abstract** are concise recapitulations (summarize) of the report content.
- The **Title** is the punch line and is most effective when short and informative.
- Each of these parts is important because of its potential to reach a different group of readers. Each should be written clearly and concisely.

# Concluding Section

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**It is common practice in technical report writing to end the main text with a concluding section.**

# Concluding Section

- In spite of skillful writing ,the readers may become confused or overwhelmed by :

*the larger number of details in a complicated report.*

Clearly the writer needs to bring out the most important facts and discuss their significance.

# Concluding Section

- Many busy people read the concluding section of a report first.
- On the strength of this reading they may become interested in the details, or they may discard the entire report.

# Concluding Section

- Therefore, the concluding section must be:
  - 1) self-contained
  - 2) independent of the main body of the report.
  - 3) Preferably it should be so worded that a person not completely familiar with that particular branch of science can understand what was learned from the investigation

# Concluding Section

A few ground rules should be observed in writing the concluding section:

- 1) Do not use undefined symbols.
- 2) Do not cite equations, tables, figures, references, and appendixes.
- 3) Do not introduce new material.

# Concluding Section

- The common subsections for this section are:
  - Summary of Results
  - Conclusions
  - Concluding Remarks
- These subsections connote (mean ,imply) somewhat different contents distinguished by the degree of generality and certainty of the material included in them.



# Concluding Section

- Since statements made in this section are often quoted by other investigators, each statement should be critically evaluated for accuracy and clarity.
- A useful stage-setting approach to the concluding section is to briefly state the purpose and scope of your work.

# Concluding Section

## 1. *Summary* of Results

The summary of results is the most straightforward concluding section:

- It simply restates the major findings of the investigation.
- All of the material presented must have appeared in the main body of the report.
- A frequently used method is to itemize the main factual results, usually in single sentences.
- The facts given are supplied from experimentation or theory ----- but not from any reasoning (i.e. they are not deduced).

# Concluding Section

## 2. *Conclusions*

- The usual form of **reasoning** in reports is to draw a conclusion from a series of facts.
- Conclusions should be general. They should not depend on the particular conditions of the report.
- If more than one conclusion is drawn, present them in order of importance.
- After the conclusions are written, examine every word and sentences critically to ensure that it means what you intended it to mean.
- Do not conclude already known facts and also do not confuse conclusions with results.

# Concluding Section

## 3. *Concluding Remarks*

- When it is not possible to draw adequate clear-cut conclusions, a concluding remark sub-section may be used.

# Concluding Section

## *Concluding Remarks*

- With this approach (using Concluding Remarks) you are :
  - 1- not constrained by the connotations of the heading “Summary of Results”, and “Conclusions”.
  - 2- free to give opinions, to evaluate and recommend. Of course the views you express should be based on the information provided by your investigations.

# Concluding Section

- Sometimes both a Conclusion Remarks and Summary of Results sub-sections are used.
- Dual concluding sections allow a concise summary of the major results as well as speculations or recommendations.
- When both sections are used, the summary of results usually precede the concluding remarks as a “further discussion” of the results.

# Examples

## Example 1:

### Aim

The aim of this project is to design a mobile phone tower.

### Conclusions

In this report, a design for a mobile phone tower has been presented. The key features of the tower are...  
It was found that...

# Examples

## Example 2:

### Aim

The aim of this investigation is to analyse the bus delays at the intersection of the bus loop and Wellington Road at Monash University.

### Conclusions

In this report, bus delays were analysed. It was found that... Based on these findings, it is recommended that...



# Example1:Conclusion

## Conclusion

From the foregoing discussion of the results it can be concluded that with proper adjustment of the parameters so far mentioned, a high level of conversion of hydrogen sulfide to elemental sulphur can be obtained. One set of parameters which gave more than 99.9% conversion of hydrogen sulfide is given for each gas mixture employed in the laboratory scale operation. These conditions may not represent the optimum set of commercial operation. However, they demonstrated that by combination of the parameters, high conversion levels could be obtained.

## Example2: Conclusions and Recommendations

### Conclusion

Outdoor Equipment Ltd is not in a very secure financial position. Improvements in every area of the company are needed if the company is, in the first instance, to survive and then grow. The key areas of reform are the liquidity of the company and the quantity and quality of working capital, profitability, and financial stability. Management must address these areas simultaneously if the company is to overcome its present poor record.

Conclusion

General  
recommendations

# **Part 4: Report Supporting Sections**



# Report Supporting Sections

- In this part of the chapter we will discuss the following report supporting sections:
  - Summary
  - Abstract
  - Title
  - Appendixes
  - References

# Supporting Sections

## *Summary Section*

- The summary is the first main section in a report. (Although this section appears first, it is usually written last.)
- The summary is limited to 200 words.
- The concluding section ground rules also apply to the Summary, which must be written so that it can be read independently of the report. It should be a concise recapitulation of the report content.
- No specific format is prescribed (given) for the summary.

# Supporting Sections

## *Summary Section*

**Include in the summary:**

- **Purpose and scope of your work. ( whether it is experimental, theoretical, or both.)**
- **Range of variables.**
- **Limitations**
- **Major findings.**

**Obviously results and conclusions given in the Summary should be consistent with those in the concluding section.**

# Example: Summary

This report deals with the testing and comparison of three data compression techniques on an internal IBM software system.

A description of each of the three data compression techniques used is provided with the testing protocol and results.

It was concluded that, although all three of the techniques resulted in substantial data compression , the increase in CPU time used to execute the compression functions was not acceptable and therefore , none of the three compression functions would be implemented in the system at this time.

It is recommended that more exhaustive literature search be done to find other compression techniques and that development takes place to create and test new techniques.

# Supporting Sections

## *Abstract Section*

- The abstract must be:
  - 1- understandable independently of the text.
  - 2- It should be no longer than 200 words. But if you can tell your story in less than that do it.
- The abstract should briefly state the main features of the report such as:
  - The purpose.
  - The scope
  - The major findings.



# Supporting Sections

## *Abstract Section*

- It is a condensed form of the Summary. Because the Abstract and Summary are used for different purposes, repetition in these two sections is acceptable.
- Many readers are first informed of your report through abstracting services (library). In fact, the Abstract usually receives wider circulation than the report. Therefore take the time to word the Abstract carefully so that the true nature and content of your report are described.

## ABSTRACT

In an interactive environment the opportunity exists for the on-line execution of an algorithm represented as a sequence of ordered commands. In particular, when the sequence of commands defines a normal Markov algorithm, the on-line environment provides a practical testing ground for one of the basic theories of computation. In order to develop and run a Markov algorithm a specification is required which will be capable of execution by a computer. One possibility is to represent the Markov algorithm and its data as a sequence of LISP S-expressions and to process the S-expressions using an extended LISP interpreter. In this paper the translation of Markov algorithms to LISP S-expressions is discussed along with a minimum set of commands for a Markov processor. Some of the difficulties in constructing more complicated algorithms are also discussed and several enhancements are suggested which would make the resultant Markov processor more practical and easier to use.

# Supporting Sections

## *Title*

- Webster dictionary defines the title :  
“The distinguished name of a written, printed, or filmed production”.
- Clearly this statement is appropriate to titles of technical publications. Much abstracting and indexing is based on the title. An improperly titled paper may be virtually lost and never reach the audience for which it was intended. For this reason alone the title must be carefully thought out and worded to convey the most information in the fewest words (maximum length, 120 characters including spaces).

# Supporting Sections

## *Title*

- Title should identify the basic area of effort and, if possible, convey either explicitly or implicitly whether the work covered was primarily experimental or theoretical.
- But avoid starting your title with, for example,  
“Study of-----“  
“Research on -----.”
- Do not use part numbers in titles (e.g., I, II, etc.) unless at least the first two parts can be published concurrently or nearly so.

# Supporting Sections

## *Title*

- **If a report has been published in some other forms, include that information on your rough draft. Depending on the type of publication, this information will be presented as a footnote on page 1. For example,**

\*Published in part 1 in OR Journal, vol.40, no.10, Octo.1990, and presented at the September 1989 Meeting of the Jordanian OR Society.

# Supporting Sections

## *Title*

- Judicious use of footnotes may be made in the text, but remember that footnotes are:
    - disruptive (upsetting) to readers
    - decrease their comprehension (understanding).
- Bibliographic references must not be given as footnotes.

# Supporting Sections

## *Title*

- Prepare a list of several tentative (مؤقت) titles as you write the report, but make the selection only after all writing has been completed. By that time, you will have had to ponder (think over) all aspects of your work and will be in the strongest position to choose a representative title.

# Which Title is better?

## [Option A]

ALTERNATIVE DESIGNS REPORT

THE FUEL CELL CAR

## [Option B]

TWO ALTERNATIVE CONCEPTUAL DESIGNS

Answer: option B



# Supporting Sections

## Acknowledgments

- Significant contribution directly related to the substantive ( جوهر ) content should be suitably acknowledged.
- When acknowledgment of contribution is wanted, it is included in a paragraph on the back of the title page.

# Example:

## Acknowledgment

**MASK Engineering would like to thank Dr. Schaff of the Music Department and Ms. Cleveland from the Theater Department for their expertise and input for the Arts Center. We would also like to thank Dr. Tom for his aid in our research and use of his research materials.**

# Supporting Sections

## *Appendixes*

- An appendix should be regarded as the place for material that is important, but not essential, to the complete development of the report.
- Examine the main parts of your report for unusual long and detailed sections. Frequently, the report can be improved by relocating some material from these sections to an appendix.

# Supporting Sections

## *Appendixes*

- Particularly appropriate for appendixes are:
  - 1- Involved mathematical derivations.
  - 2- An example of an analysis described in the report.
  - 3- Detailed descriptions of techniques, procedures, or equipment not essential to the main purpose of the report.
  - 4- Symbol lists.

# Supporting Sections

## *Appendixes*

- Appendixes must have titles. If there is more than one appendix, identify them by capital letters (A, B, C, etc.) in the order of their mention in the report.
- Each appendix should be referred to at some point in the main body of the report.
- If the symbol list is an appendix, make it either the first or last appendix.

# Supporting Sections

## *Appendixes*

- Numbering of figures and tables mentioned for the first time in the appendixes is a continuation of the numbering in the main text.
- Equations are usually numbered according to the appendix in which they appear (e.g., (A1), (A2), etc.) but may be a continuation of the equation numbers in the main text.

# Supporting Sections

## *Appendixes*

- Authors other than those of the report may write appendixes. Appendixes having independent authors should be mentioned in the Introduction in the following manner:

Appendix C by Jone Mark describes the computer program used in the analysis.

**An author and affiliation line (membership), as applicable, also appears under the appendix title.**

# Supporting Sections

## *References*

- References are citation of work related to points brought out in the report and are given as sources of additional information for the reader.
- The question of whether a reference is needed can only be answered with experience.



# Supporting Sections

## *References*

- A reference may be appropriate to:
  - 1- Show work pertinent to the subject.
  - 2- Acknowledge the work of others in the same field, particularly quotations.
  - 3- Save repetition of lengthy descriptions procedures, development of theories, or other information.
  - 4- Support your assumptions, reasoning, viewpoints, or explanations.
  - 5- Compare previous results with those of your report.

# Supporting Sections

## *References*

- Reports, books, papers, and other publications referred to in reports are listed in the References section at the end of the text, after the concluding section, before any appendixes at the back of the report.

# Supporting Sections

## References: *Reference format*

### 1) Format1:

- References are generally put into established style and listed by number in the order of mention in the text, tables, and figures consecutively.
- But the style and format of the reference list may follow accepted practice in the discipline of the report.

# Example: References

Example1:

Few other examples of steganography can be found in [1, 2, 3]. An important technique was the use of sympathetic inks. Ovid in his "Art of Love" suggests using milk to write invisibly.

## References

- [1] A.Papoulis, "Probability, Random Variables and Stochastic Processes", McGraw Hill Inc., 3rd Edn.,1991.
- [2] R.C.Gonzalez and R.E.Woods, "Digital Image Processing", Addison-Wesley Publishing company, Inc.,1993.
- [3] A.K.Jain, "Fundamentals of Digital Image Processing", Prentice-Hall of India Pvt. Ltd., 1995.

# Supporting Sections

## References: *Reference format*

### Format2:

- You may use the author last name (date) style of citation

(e.g. Jones (1997, 1999); Hindi (2000)).

- This style allows to revise your manuscript (document) without searching for and changing all references numbers.

# Example: References

## Example2

It is the process that embeds data called a watermark into a multimedia object (cover work) such that the watermark can be detected or extracted later to make an assertion about the object. The object may be an image, audio, video or text (Mohanty, 1999).

## Reference

(Mohanty, 1999). Mohanty P.Saraju, "**Digital Watermarking: A Tutorial Review**", informing science special issue on multimedia informing technologies-part 1,vol 2, 1999..

# Supporting Sections

## References: *Reference format*

- This type of reference list alphabetized by the last name of the first author.
- Multiple publications by the same author (or authors) are listed in the chronological order from oldest to most recent.
- Documents by the same author in the same year are cited by author last name, year, and letter (e.g., Robinson (1970a,b)).
- Documents having no personal author may be cited in the text by using an abbreviated title.

# Supporting Sections

## References: *Reference format*

- If a bibliography is presented in addition to or in place of the References section, the publications in it are:
  - neither numbered nor cited in the text
  - either listed alphabetically according to author, listed chronologically, or grouped according to subject.



# Example: References

## **Journal article, one author:**

Ruebarbe, L. M. (1995). Cleaning up the psychological house. *Ethics in behavioral therapy*, 66, 334-352.

## **Journal article, two authors:**

Tenn, I. Q., & Peller, R. (1989). Violence in entertainment media. *Perspectives in Psychology*, 3, 919.

## **Magazine article:**

Feemish, J. A. (1994, November 30). The mind's eye. *Tomorrow's Science Today*, 24, 37-42.

# Example: References

## **Book**

DuCarbeaux, M. A., & Lustiger, I. V. (1969). *Mentorship among older and younger college students*. Berkeley, University of California.

## **Encyclopedia or dictionary**

Malin, R. & Collie, C. (Eds.). *Encyclopedic Dictionary of Human Behaviors*, (4th ed., Vols. 1-4). New London, Whaley.

# Example: References

## Websites

Limb, P. (1992, May). Relationships between lab-or & African nationalist/liberation movements in southern Africa [Online]. Available: [http://www.neal.ctstateu.edu/history/world\\_history/archives/limb-l.html](http://www.neal.ctstateu.edu/history/world_history/archives/limb-l.html) [1997, April 20]. (Note that the first date is the one on the web document (if there is one), and the date at the end of the citation is when the site was accessed as a reference.)

# Example: References

## Example1

It is the process that embeds data called a watermark into a multimedia object (cover work) such that the watermark can be detected or extracted later to make an assertion about the object. The object may be an image, audio, video or text (Mohanty, 1999).

## Reference

(Mohanty, 1999). Mohanty P.Saraju, "**Digital Watermarking: A Tutorial Review**", informing science special issue on multimedia informing technologies-part 1,vol 2, 1999..

# Example: References

Example2:

Few other examples of steganography can be found in [1, 2, 3]. An important technique was the use of sympathetic inks. Ovid in his "Art of Love" suggests using milk to write invisibly.

## References

- [1] A.Papoulis, "Probability, Random Variables and Stochastic Processes", McGraw Hill Inc., 3rd Edn.,1991.
- [2] R.C.Gonzalez and R.E.Woods, "Digital Image Processing", Addison-Wesley Publishing company, Inc.,1993.
- [3] A.K.Jain, "Fundamentals of Digital Image Processing", Prentice-Hall of India Pvt. Ltd., 1995.

# Table of contents

A Table of Contents includes all the headings and subheadings in your report and the page numbers where each of these begins. When you create a Table of Contents, one of the most important decisions you have to make involves design. A good Table of Contents distinguishes headings from subheadings and aligns these with the appropriate page numbers. This also means you should pay attention to capitalization, spacing, and indentation.

# Example: Which is better? A

## Contents

### Summary

1.0 Introduction	1
2.0 Car A	1
2.1 Design features	1
2.2 Materials selection	2
2.3 Fuel efficiency	2
3.0 Car B	3
3.1 Design features	3
3.2 Materials selection	4
3.3 Fuel efficiency	4
4.0 Comparison of designs	5
5.0 Conclusions	8
6.0 References	9

### Appendices:

Appendix A Design diagrams

Appendix B Contribution of each group member

# Example: Which is better? B

Summary	1
1.0 Background	1
2.0 Car A design	2
3.0 Car B design	4
4.0 The materials we selected	5
5.0 What are the safety features?	7
5.1 Car A	7
5.2 Car B	7
6.0 Discussion	8
7.0 Conclusion	9
8.0 References	9
9.0 Appendix	10
Appendix	11



# Answer: Contents A is better

Contents B has the following problems:

- The page should be titled 'Contents'.
- Background information should be included in the Introduction, perhaps as a subsection if there is a considerable amount.
- Section headings should be in parallel grammatical form; for example, Materials and Safety Features, and these should be sub-sections of Sections 2 and 3. Subsections should be clearly indented.
- The Discussion could more informatively be entitled: Comparison of Designs
- The Conclusions section needs an 's'.
- Appendices to a report should not have section or page numbers and, where there is more than one, should be titled Appendices. They also need titles.
- Dotted lines between section headings and page numbers would improve readability.