

# **Writing Technical Reports**

**420-122-VA**

**Dr. M. Talla**



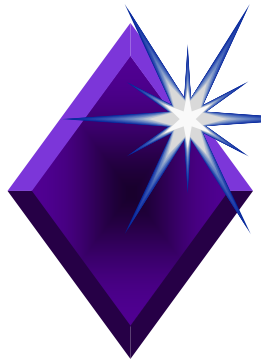
# Report Writing

Report Writing



# Contents

- Brainstorm, jot-down, and synthesise the content for report
- Collecting the data
- Analyzing the data
- Creating a structure of report
- Writing the report
- Revising as many times to make it better
- Final version of the report



# *Brainstorm, jot-down, and synthesise the content for report*

- Understand the purpose of report
- Understand the needs of audience
- Well structured; Right size in terms of pages, Contents, Presentation of information
- Details well brainstormed
- Contents well synthesized
- Informative Report
- A Good Report for the purpose



# Purpose

- Report should provide the reader with useful information and answer the question
  - Is this inventory order quantity justified?
  - Should this drug be licensed?
  - Is the analysis in the report appropriate?
  - Do the conclusions follow the analysis?
- Report is successful if it effectively communicates the information to the intended audience; otherwise the report is useless.



# Successful Report

- To be useful: the report should be
  - Clear
    - Well structured, clear, concise, suitable for the intended audience
  - Professional
    - statistically correct, correctly spelled, produced with a decent word processor
  - Well illustrated
    - illustrations that aid understanding, integrated with text



# Audience

- Different types of audiences
  - Executives: The casual reader/big boss who wants the **main message** as painlessly as possible
  - Managers and Designers: The interested reader who wants **detail to reasonable extent** but doesn't want all technical details
  - Technical Staff: The guru who wants the **whole story**
  - Customer: User details like installation, maintenance and usage



# Jot-down a structure

- To address all audiences effectively,
  - Include an abstract or summary for executives / big bosses
  - A main body for the interested non-specialist
  - A technical appendix for the guru
- A structure emerges that can be expanded





# Report Structure

- Good structure enhances the clarity
- A good report has the following parts
  - Title
  - Table of Contents
  - Abstract/executive summary
  - Introduction
  - Main sections
  - Conclusions
  - References
  - Technical appendix



# Title

- Should be informative, punchy, includes some puns
- Good Titles
  - A Novel Truck Transportation Method (*punchy*)
  - Diagnosing diabetes mellitus: how to test, who to test, when to test (*dramatic, informative*)
- Bad Titles
  - Some bounds on the distribution of certain quadratic forms in normal random variables (*boring, vague*)
  - Performing roundoff analyses of statistical algorithms (*boring, vague*)



# Table of contents

- Shows the **structure of the document** and lets the reader navigate through the **sections**
- Include **page numbers** for each section and subsections



# Executive Summary

- Describes the **issue or problem and the solution** in a few sentences. That's all a big boss can read!
  
- Remember
  - Keep it **short** and simple text
  - State problem *and* solution
  - Can include graphical presentation of Results
  - Just in one page



# Introduction

- State the question, background of the problem
- Describe similar work if any with references
- Outline the approach
- Describe the contents of the rest of the report
  - in Section 2 we ...
  - in Section 3 we ...



# Rest of sections as appropriate

- Analysis section detailing all data analysis
- Methodology section to describe an appropriate method of finding a solution
- Results section detailing the results
- Discussion section to debate upon the results and recommendations
- Conclusions and Further work



# Appendix

- Technical details
- Be as technical as you like
- Include the data sets used
- Details like flow charts, tables, etc.



# Bibliography or References

- Numbered reference documents with page numbers
- Always cite (i.e. state the reference number) where some information is stated or re-stated.
- Never state others work as your own ➔ Plagiarism.





# Clarity in text

- Write full and short sentences.
- Avoid complex sentences
- Each paragraph should focus on one theme or idea
- Text in a section shouldn't repeat exactly in other sections.
- If there are equations: write only one per line.



# Figures and Tables

- Use informative figures with an appropriate caption
- Contents in figure and tables should be visible without needing magnifying glasses
- Divide a big figure or table into multiple parts if needed



# Review the report

- Once the report takes a shape, read and re-read to revise the text to communicate the subject matters.
- Every iteration should improve.
- Make sure to keep older versions of the report just in case
- Once the report reaches a certain quality, finalize the report.



# Final report

- One final time, review all contents and pages to identify any obvious mistakes anywhere
- Seek feedback from colleagues who can help
- Finalize the report



# Conclusions

- ❑ Executive summary is very important.
- ❑ Well structured document or report
- ❑ Always spellcheck and grammar check
- ❑ Make sure that any online resources are still available at the completion of report