

Kingdom of Saudi Arabia  
Ministry of Higher Education  
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# Project Documentation

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IS 497 – Graduation Project 1

# Outlines

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- Acknowledgment
- Abstract
- Keywords
- List of abbreviation
- Table of Contents
- Table of Figures
- Table of Tables
- Chapter One: Introduction
- Chapter Two: Background
- Chapter Three: Analysis and Methodology
- Chapter Four: Design and Implementation
- Chapter Five: Testing
- Chapter Six: Conclusion and Future Work
- References
- Appendix

*Each Chapter must contain  
an introduction and summary*

# Chapter One

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## Introduction

# Chapter One: Introduction

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- You might give brief introduction to the project's field of study, some definition of the common terms to be used in the project, or provide historical image of the project's field study...(Project Overview)
- Explain your initial problem that you want to address; you might use references to support the need of study...(Problem Statement)
- What the project will achieve and, if necessary, what it will not achieve...(Project Scope)
- Qualitative description about how the project will solve problems in the problem domain...(Project Objectives)

# How to Write a Problem Statement

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- Well constructed problem statements will convince your audience that the problem is real and worth having you investigate/solve.

# How to Write a Problem Statement

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- A persuasive problem statement consists of three parts:
  1. The ideal,
  2. The reality, and
  3. The consequences for the reader of the feasibility report.
- Your strategy is one of contrast:
  - by situating the ideal scenario next to the situation as it exists, you can not only persuade the reader that a problem exists, but then go on to emphasize the consequences of ignoring or addressing the problem.
- Remember, your problem statement is the backbone of the proposal and the feasibility report.

# How to Write a Problem Statement

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- STATEMENT 1 (DESCRIPTION OF THE IDEAL SCENARIO)
- Describe the goals, desired state, or the values that your audience considers important and that are relevant to the problem.
- (BUT)
- Connect statements 1 and 2 using a term such as "but," "however," "Unfortunately," or "in spite of";
- STATEMENT 2 (THE REALITY OF THE SITUATION)
- Describe a condition that prevents the goal, state, or value discussed in statement 1 from being achieved or realized at the present time.

# How to Write a Problem Statement

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- STATEMENT 3 (THE CONSEQUENCES FOR THE AUDIENCE)
- Using specific details, show how the situation in statement 2 contains little promise of improvement unless something is done. Then emphasize the benefits of research by projecting the consequences of possible solutions as well.

# EXAMPLE

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- STATEMENT 1

- In order to provide excellent patient care at a minimal cost, Middletown Hospital needs diagnostic procedures that are safe, efficient, and accurate. In addition, the procedures should not be overly painful for the patient.

- STATEMENT 2

- Right now, Middletown Hospital's main diagnostic tools are CAT scans and myelograms (spinal taps). The CAT scan fails to make clear diagnoses 60% of the time. When the CAT scan fails, doctors must resort to the myelogram. While the myelograms are accurate, this procedure is very painful and sometimes dangerous for the patient.

- STATEMENT 3

- If Middletown Hospital continues to do the two procedures, they will not only be wasting time and money, which jeopardizes their overall efficiency and earning potential. Also, undue suffering could lead patients to choose another hospital with more advanced facilities.

# How to Write Project Scope

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- A **scope statement** is one of the most critical pieces of a project, and writing one can be a difficult task for a project manager.
- But, an effectively written scope statement can help the rest of the project flow along with minimal problems
- **Scope has some necessary components:**
  - Project justification
  - Project deliverables & product
  - Any non-goals

# How to Write Project Scope

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- Project justification

- It identifies the reason for the project
- It is usually a statement or two identifying why the project is being created.
- It helps to give overall direction to the project as well as emphasizing the final goal.
- The project justification should be clear and precise manner so that it identifies a quantifiable measure of success for the end of the project.

# How to Write Project Scope

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- **Project justification** (Following)

- An effective justification might read like the following:

“This project is to create a successful marketing plan for the month of August 2008, in order to increase sales of Widget X by 15% in the Chicago metropolitan area.”

This is a good example of an effective justification because it is quantifiable and qualitative. Distinct boundaries are set as to what is the expected result of the project so there is no ambiguity.

# How to Write Project Scope

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- **Project Deliverables & Product**

- Deliverables may be a final product to be provided to the stakeholders.
- Work required to resolve the problem and achieve the benefits. (e.g. main functions provided)

- **Any non-goals**

- Work/Items that fall outside of the scope of the project
- Non-goals are items that are specifically not going to be addressed by the project, which helps to eliminate the scope creep.
- By clearly identifying these as non-goals, the scope cannot include them later on without going through a change management process.

# How to Write Objective

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- Objectives

- The purpose of a particular work/project is defined in this section.
- Reading the objective should provide an overview of the tasks to be completed in the process of completion of the project.
- A concise and precise objective statement is needed to present the reader with an idea about the work in the project.

# Chapter Two

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## Background

# Chapter Two: Background

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- Discussion: it should not be an extensive review although it must be a comprehensive and well written.
  - Provides a conceptual framework for the research
  - Provides an integrated overview of the field of study
  - Helps establish a need for the research
  - May help clarify the problem
  - Helps to demonstrate project's similarities and differences between other application
  - Helps to compare your project's idea with other applications and demonstrate what will your project take advantage from other applications and what will it improve

# How to Write a Literature Review

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- Skills involved in producing a literature review:
  - Surveying a comprehensive range of existing material and sources in the general areas of your study
  - Selecting those that will be most relevant and significant for your particular project
  - Understanding and analyzing the central findings and arguments
  - Synthesizing the findings and integrating them into the research proposal
  - **A good literature review generally contains an *argument***

# How to Write a Literature Review

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- Indicate the ways in which the authors you are reviewing will be relevant to your research (information, theory, methodology)
- Demonstrate that you understand the similarities and differences between these works and paradigms (Where do they stand in relation to each other? Where does your research stand in relation to them?)
- If the study is cross-disciplinary or comparative you need to describe how the different areas of research can be drawn together in a meaningful way

# How to Write a Literature Review

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- Goals of a Literature Review
  - To demonstrate familiarity with a body of knowledge and to establish credibility.
  - To show the path of prior research and how a current project is linked to it.
  - To integrate and summarize what is known in an area.
  - To learn from others and stimulate new ideas.

# How to Write a Literature Review

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- Practical Advice

- Keep up to date with the field as your project progresses however, know when to stop reading.
- Review the literature don't reproduce it!
- Identify two articles that really impressed you and use these as models.
- Plan the literature review:
  - Outline what you plan to argue.
  - Structure the evidence around your main argument(s).
  - Emphasize the relatedness of the literature to the problem you are discussing.
  - Interpret, don't just give summaries.

# How to Write a Literature Review

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- Introduction
- The Body
- Conclusion

# How to Write a Literature Review

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## ■ Introduction:

- Gives a quick idea of the general area of concern and topic of the literature review
- Establish the writer's reason for review of literature
- State why certain literature is or not included (scope)

# How to Write a Literature Review

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## ■ The Body:

- Contains your discussion of review idea's sources including the various projects and citations relevant to that idea.
- It is organized either chronologically, thematically, or methodologically (see UNC Lit. Review Reference for more information on each).

## ■ Conclusion:

- Evaluate the current state of the art of the knowledge reviewed,
- Discuss what you have drawn from reviewing literature so far?
- Where might the discussion proceed? and
- Introduce your work.

# How useful are the following sources?

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- ❑ **Journal articles:** these are good especially for up-to-date information. Bear in mind, though, that it can take up to two years to publish articles. They are frequently used in literature reviews because they offer a relatively concise, up-to-date format for research, and because all reputable journals are refereed (i.e. editors publish only the most relevant and reliable research).
- ❑ **Books:** books tend to be less up-to-date as it takes longer for a book to be published than for a journal article. Text books are unlikely to be useful for including in your literature review as they are intended for teaching, not for research, but they do offer a good starting point from which to find more detailed sources.

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- **Conference proceedings:** these can be useful in providing the latest research, or research that has not been published. They are also helpful in providing information on which people are currently involved in which research areas, and so can be helpful in tracking down other work by the same researchers.
  - **Newspapers:** since newspapers are generally intended for a general (not specialized) audience, the information they provide will be of very limited use for your literature review. Often newspapers are more helpful as providers of information about recent trends, discoveries or changes, e.g. announcing changes in government policy, but you should then search for more detailed information in other sources.

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- **Theses and dissertations:** these can be useful sources of information. However there are disadvantages:
    - 1) They can be difficult to obtain since they are not published, but are generally only available from the library shelf or through interlibrary loan
    - 2) The student who carried out the research may not be an experienced researcher and therefore you might have to treat their findings with more caution than published research.
  - **Internet:** the fastest-growing source of information is on the Internet. It is impossible to characterize the information available but here are some hints about using electronic sources:
    - 1) bear in mind that anyone can post information on the Internet so the quality may not be reliable
    - 2) the information you find may be intended for a general audience

# Chapter Three

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## Analysis and Methodology

# Chapter Three: Analysis and Methodology

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- Explain the project overall methodology that you are going to use and justify your selection
- Make a complete analysis for the project

# What is a methodology

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*A methodology is*

- The research methodology is a science that studying how research is done scientifically.
- It is the way to systematically solve the research problem by logically adopting various steps.
- Also it defines the way in which the data are collected in a research project.
- In other words, it shows your reader how you obtained your results.

## But why do you need to explain how you obtained your results

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- Often there are different methods that we can use to investigate a research problem.
- The proposed methods must be appropriate to the type of research
- Your methodology should make clear the reasons why you chose a particular method or procedure.

## But why do you need to explain how you obtained your results

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- The research methods must be appropriate to the objectives of the study.
  - If you perform a case study of one commuter in order to investigate users' perceptions of the efficiency of public transport in city X, your method is obviously unsuited to your objectives.

# General Tips (It is Your Decision!)

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- In Analysis, you may need the following:
  - Techniques
  - Results and Discussion
  - Requirements Definition
  - Your Analysis Diagrams

# Chapter Four

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## Design and Implementation

# Chapter Four: Design and Implementation

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- Give a complete description about your project design and implementation

# General Tips (It is Your Decision!)

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- In Design section, you may add the following:
  - Your Design Diagrams
  - Interfaces Design
  - Hardware and Software Specifications
  - Snapshots of the System

# Chapter Five

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## Testing

# Chapter Five: Testing

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- Make a complete test for your project

# Chapter Six

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## Conclusion and Future Work

# Chapter Six: Conclusion and Future Work

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- Summarize the main results that you have achieved in response to the problem you have identified earlier and how did the system solve the problem identified... (Result and Achievement)
- Discuss any further improvement or extension that you suggest or plan to do on your system...(Future Work)

# General Tips (It is Your Choice!)

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- You may add the following:
  - Obstacles

# Academic Writing Tips

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- Do not use first person point of view: ***I, me, we, our, us,*** etc.
- NEVER use second person point of view: ***you, your,*** etc.
- Do not use phrases such as ***I think that, I believe that, I feel that, in my opinion,*** etc.

# Academic Writing Tips

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- In general, it is inappropriate simply to write as you would speak. In conversation, the listener can ask for clarification or elaboration easily, and thus the speaker can use imprecise language, ramble from topic to topic freely, and so on.
- Formal writing must instead stand on its own, conveying the author's thesis clearly through words alone. As a result, formal writing requires substantial effort to construct meaningful sentences, paragraphs, and arguments relevant to a well-defined thesis.
- The best formal writing will be difficult to write but very easy to read.
- The author's time and effort spent on writing will be repaid with the time and effort saved by the (many) readers.