**CHAPTER 1**

**INTRODUCTION**

* 1. **Introduction**

The introduction describes briefly about the project and related issues. Writing the introduction is as important as any of the chapters, as it sets out for the reader what you intend to cover in the thesis. One of the main purposes of the background/introduction section is to ease the reader into the topic. You may start with stating the general topic and give some background, provide a review of the literature related to the topic, define the terms and scope of the topic and outline the current situation.

* + 1. **1.2 Problem Statement**

A problem statement is a statement of a current issue or problem that requires timely action to improve the situation. A statement of problem refers to the critical issue that your project/research seeks to address. To make this easier, it's recommended that you ask who, what, when, where and why to create the structure for your problem statement. There are a few key elements that you can use when crafting a problem statement:

* *Describe how things should work.*
* *Explain the problem and state why it matters/importants.*
* *Back up your claim (cite your sources)*
* *Propose a solution.*
* *Explain the benefits of your proposed solution(s).*
* *Conclude by summarizing the problem and solution.*
  + 1. **1.3 Objective**

Objectives are the specific action that are intended to be achieved which is associated with the goal of the project. Objectives should be reflecting SMART concept. The SMART acronym outlines a strategy for reaching any objective. SMART goals are Specific, Measurable, Achievable, Realistic and anchored within a Time FrameThe Objective should be written in a list form (i,ii,iii,...) and should use active statements. Example of the objective statement:

*The objective of this project are:*

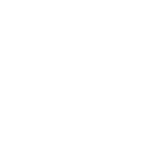
1. *To study.....*
2. *To develop....*
3. *To evaluate....*
   * 1. **1.4 Scope**

The scope discusses the boundary of the project and users. The scope of a study explains the extent to which the project/research area will be explored in the work and specifies the parameters within the study will be operating. The scope should be written in a list form *(i, ii, iii…)* and their priority should be considered according to the objectives.

* + 1. **1.5 Thesis Organization**

It is the summary of each chapter in the thesis. Below is an example:

*This thesis consists of five chapters. Chapter 1 shall discuss on the introduction to the project. Chapter 2 generally explain and discuss about……*

**CHAPTER 2**

**LITERATURE REVIEW**

* + 1. **2.1 Introduction**

This chapter contains information about the study of the project in general. It is describes the existing problem or solution done by previous work. This chapter explain in details technique/method/hardware or technologies which are suitable to be adapted into the project. The studies should answer: What, Why, How and the comparison can be shown using table. Sources of references should be stated clearly either from book, journal, conference, proceeding, thesis or website. All references should be recorded in order to identify the copyright and originality of the thesis. Format or references (citation and bibliography) – Follow UMP Thesis Guideline – APA style. Literature review should cover all the related content such as analysis of comparison on previous system/method, comparing at least THREE existing systems that relevant to the propose solution, comparing hardware/technology/tools, Should highlight on features/strength/ weakness/ advantage/ disadvantage (project based), comparing and analysing related works on the research domains. Technique methods/framework etc.(research based). 

* + 1. **2.2 Existing Systems/Works**

**2.2.1 System A**

*(detail explanation with supporting diagram/ UI of the system)*

**2.2.2 System B**

*(detail explanation with supporting diagram/ UI of the system)*

**2.2.3 System C**

*(detail explanation with supporting diagram/ UI of the system)*

* + 1. **2.3 Analysis/ Comparison of Existing System**

**2.3.2**  **Analysis of comparison on existing system.**

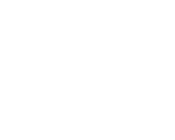
Describe about the existing work/solution that have been done by other work. Explain in detail the technique, method, tools or technology that can be adapted into the proposed project. The study should answer “WHAT, WHY, HOW” and the comparison can be shown using table. Compare THREE of existing systems and review of the comparison (advantages and disadvantages)

* 1. **2.3.3 Relevance of comparison with project title**

Describe and discuss how relevant/significant/impact your analysis of comparison to your project title.

**2.4 Summary**

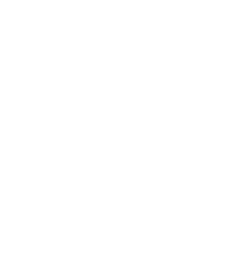
Summarize the key findings from chapter 2

**CHAPTER 3**

**METHODOLOGY**

**3.1 Introduction**

This chapter discuss about the overall approach or framework of Undergraduate Project. It should cover method/technique or approach to be used whereas a student should discuss the methodology in details to accomplish the project/research. The content for this chapter can contains: Introduction, Project Management Framework, Project/User Requirement, Propose Design, Data Design, Proof of Initial Concept, Testing Plan and Potential use of proposed solution.

**3.2 Project Management Framework/Methodology**

A project management framework maps out the methods, processes, tasks, resources and tools needed to take the project from beginning to end. In this section, student need to discuss and justify the method that has been selected including the phases involved. The student also need to discuss and justify on method/techniques/tools/instruments/framework/model which have been used in the report. should describe on applied / used project management framework in the project. For project based: SDLC (Agile, RAD etc), Research Based: Research Framework. Discuss the selected development methodology throughout project. Cover the phases of SDLC / Methodology. The student must clearly describe the activities in each phase of SDLC/Methodology that related to the project/research.

**3.3 Project Requirement**

In this section, student should discuss about the requirement needed to complete the project/research. Project Based: Functional and Non-Functional Requirement, Constraints and limitations. User requirements can be obtained from interview, survey, feedbacks from the clients/potential users, or observations of the particular process in manual system. Research Based: Input, Output, Process description, Constraints and limitations, Case Study

**3.4 Propose Design**

In this section, student should describe and come out with the proposed design that related to project requirement. Project Based: Flowchart, Context Diagram, Use Case Diagram & description, Activity diagram, Storyboard. Research Based: Pseudocode/ Algorithm/Flowchart/Model or related design depend on type of research.

**3.5 Data Design**

In this section, student should describe the data/assets involved that related to the project/research conducted. For Project Based: ERD, Database Dictionary (PK, FK)/assets etc (depends on the types of data of the project)- Explain the process of creating the database. For Research Based: Dataset description- student should be able to explain/discuss about the dataset that will be used and justify the selection.

**3.6 Proof of Initial Concept**

For PSM 1 level, student should at least come out with the proof of concept (POC). The main goal of a proof of concept is to test the general assumptions inherent in the idea and verify that it can be executed from a technical point of view. Therefore, a POC can take the form of a working part of the final product, developed with specific technology, to prove that the software can solve a particular problem. For this section, Project Based: student need to provide the design of the proof of concept with explanation. For Research Based: student need to provide an evidence of early work/experiment/preliminary findings.

**3.7 Testing/Validation Plan**

The testing or validation process should be plan properly and clearly. Therefore, student must provide the suitable activities. Some examples of activities are selecting data for testing, the way of testing is implemented, and the measurement/evaluation use such as user acceptance and comparison testing. For project based, the student can describe on the testing strategy/approach that will be used to test the proposed solution while research based can cover the simple set of input, processes and output and comparison of result.

**3.8 Potential Use of Proposed Solution**

Explanation of potential use of proposed solution in real time situation or potential for commercialization. This part also may discuss about the benefits/significant of the project/research in daily life. Your proposed solution should relate the current situation to a desired result and describe the benefits that will accrue when the desired result is achieved. So, begin your proposed solution by briefly describing this desired result.

**3.9 Gantt Chart**

Shows project phases from starting till the project complete. PSM 1 – shows the estimated duration. Shows the project activities according selected development methodology, NOT the chapter of report.

**REFERENCES**

*Reference can come from book, journal, conference proceeding, magazine or website.All references should be recorded in order to identify the copyright and originality of thesis. Format or references (citation and bibliography) – Follow UMP Thesis Guideline – APA style*

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