CAT404 Software Engineering Major Project

System Requirements and Design Outline

School of Computer Sciences

Academic Session: 2023/2024

Templates

Please note that a template is included in the CAT404 Information Kit. This template should be utilized to prepare the CAT404 analysis report.

Cover Page

Use soft yellow card for cover page printing. Indicate that the report is an analysis report, not a final report.

System Requirements and Design Outline

The analysis report should include but not limited to the following sections/chapters:

1. Abstract.
    - Both the Malay and English versions are needed.
2. Introduction.
    - Background – general background of the project.
    - Problem Statements – state the problems within the project.
    - Motivation – reasons why the study is carried out.
    - System Objectives
    - Proposed Solutions
        - Describe your proposed solution
        - Proposed system architecture diagram *(if ready)*
        - Propose overall module diagram *(if ready)*
    - Benefits and Uniqueness of the Proposed Solutions (innovation or novelty).
    - Organization of the Report – A brief overview of the rest of the chapters in the report. It serves as a guide of the overall structure of the report.
3. Background and Related Work.
    - Identify the status of project development (new or continuation/enhancement/review relevant past projects).
    - Summarize relevant projects to provide context, key terms, and concepts so that the readers can understand the study.

- List details of existing algorithms/methods/theories/models.
- Criticize the strengths and weaknesses of existing system/work.
- Provide a brief introduction of the proposed work.

4. System Requirements and Design
    - Identify project scope, system capabilities, and system limitations.
    - Project management:
        - Work breakdown structure (WBS).
        - Work schedule – Gantt chart and milestone timeline. ✦ SWOT analysis.
    - Development methodology – according to the project type and needs (e.g. SDLC, waterfall, agile development, prototyping, spiral development, iterative & incremental development, rapid application development, and etc).
    - Detailed requirement of new system (e.g. information gathering via survey, questionnaire and etc.)
    - Analysis of the new system using **appropriate diagrams**, according to the project type and needs (e.g. UML modeling, flowchart, pseudocode). The UML modeling may include use case diagrams, use case descriptions, class diagrams, system sequence diagrams, and state chart diagrams. Remember to select only the diagrams that are applicable with the development of the project.
    - Detailed description of the proposed system/solution.
        - Describe the purpose and functionality of each module as in the module diagram
        - Include flow chart/process flow of selected module(s) (*if available)*
        - Describe how the system works as in architecture diagram
    - Description of data source for training and test set (*if applicable*)
    - Technology deployed ✦ Hardware.
        - Software – tools, OS (development PC + server), programming languages involved, algorithms (if relevant).
5. Conclusion.
    - State the conclusion of your system requirements and design.
6. References.
    - List down all the references from books, journals, proceedings, websites, manual etc.
    - Recommended reference style: APA or Harvard or IEEE.
7. Appendices.
    - Any other relevant information, e.g. detailed use case specification, detailed sequence diagrams, screen shots, detailed flowcharts, and pseudocodes.