Systems Analysis and Design (CT026-3-1)

INTRODUCTION

For this project, you will be required to put into practice the tasks associated with the Systems Analysis and Design module.

You are required to do this assignment in a group, each comprising of **4 or 5** members. Choose ONE (1) from two (2) case studies given in this paper. You are required to plan, analyse and design Information System (IS) for the chosen case study.

Part-A is a 'Group Component', to be completed in a collaborative manner (70%).
Part-B is an 'Individual Component', to be completed by each member of the group respectively (30%).

It is essential that individual members of the group realise their responsibility to their peers and behave in a professional manner.

OBJECTIVES

The objectives of this assignment are to:
1. Provide knowledge of the basic techniques of systems analysis and design.
2. Provide students with the understanding of the roles and responsibilities of system analyst and project manager within each phase of the systems development lifecycle (SDLC).
3. Introduce the various stages and activities involved in developing a system using through systems development lifecycle (SDLC).
4. Provide students with relevant skills on the application of tools and techniques in planning and gathering information.
5. Provide the knowledge of how an input, output and interface design will determine whether the system will be accepted by the user or not.
6. Instil the importance of teamwork and good management skills.

ASSESSMENT

This assignment contributes to 50% of module assessment

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CASE STUDY 1: Comic Book Shop

Matthew owns a Comic Book Shop on the Flat Street of a busy town. The book shop buys and loans second hand comic books. He also has a small private library of comic books now out of publication which he loans to local people. Before anyone can borrow any comic books they must register with the book shop and pay a membership fee. The fee is repaid when a person wishes to cease membership of the library if all the borrowed books have been returned in good condition.

When someone offers a comic book for sale Will searches his record of books to see if he already has a copy in library. If so, he checks how much he paid for the copy or copies he already has. If he has four copies of the book already he may decline to buy the book, or offer a reduced price. If Will doesn't already have a copy of the book he will offer to buy it, paying a reasonable price depending on its condition and how rare it is. Will has realised that the supply of second hand comic books locally has diminished and has decided to set up a web site where people can offer their books to Matthew to buy.

Matthew has allocated RM 10, 000 for the project and the estimated timeline is 2 months. As the selected company, you have to come out with a Project Planning Report that consists of the following contents.

(Refer to Suggested Report Format, Page 5)

CASE STUDY 2: Street Public Library

Street Public Library is a small library in Pengkalan Balak, Melaka. Currently it has about 100 members. In order to become a member of the library, only a person who is 13 or above can apply for membership. The membership fee is RM 20 per year. There is a form to be filled in which person fills personal details. These forms are kept in store for maintaining members' records and knowing the membership period.

A member can issue a maximum of four books. He/she has four cards to issue books. Against each card a member can issue one book from library. Whenever a member wishes to issue a book and there are spare cards, then the book is issued. Otherwise that request is not entertained. Each book is to be returned on the specified due date. If a member fails to return a book on the specified date, a fine of RM 1 per day after the due return date is charged. If in case a card gets lost, then a duplicate card is issued. Accounts are maintained for the membership fees and money collected from the fines. There are three librarians, for books issue, return and fine transaction. Approximately 5 members come to library daily to issue and return books.

To develop this system RM 8,000 has been allocated and the project need to be completed within 3 months. Your task is to come up with Project Planning Report that consists of the following contents.

(Refer to Suggested Report Format, Page 5)

SUGGESTED REPORT FORMAT:

Both case studies have explained the manual procedures and several problems that faced in managing the daily tasks in the organisations. You are required to study more on the problem statements and propose a solution for the selected case study. You are required to plan, analyse and design an Information System (IS) for the chosen case study. This project is a group effort and should be treated as though you are proposing a system. You are required to establish an identity for your group; the group will be referred as a "Company" after this.

The following is a suggested minimum report format. It is recommended that your report contain at least the following:

Table of Contents
The table of contents should have the topic title and reference page number attached to each topic.

PART- A – GROUP COMPONENT (70%)

1) **Introduction**

   a) Include the introduction of your company (Name, Logo, Vision, and Mission & Motto).

   b) Overview of the business process of the new proposed management system.

2) **Problems and Proposed Solutions**

   a) Identify the problems in the existing systems including the cause and the effects of it.

   b) Identify the aim and objectives of the proposed system.

3) **Project Planning**

   a) Using SDLC as guide, identify and briefly explain the task and activities engaged in the project.

   b) Create a Gantt chart showing your project scheduling.

   c) Include a 'Workload Matrix', showing the percentage of each member's contributions.

4) **Feasibility Study**

   Prepare a Feasibility Report which consists of.

   a) Operational, Technical, Economical and Schedule Feasibility.

   b) Use the PIECES framework to conduct the Operational feasibility of the system.

5) **System Analysis**

a) From the findings of your 'Requirement Gathering' (Individual Component), create a list of Requirements (including functional and non-functional requirements) for the new system.

6) **Design Diagram**

Show the processes and data engaged in the system through these diagrams;

a) Context Diagram

b) Level-0 DFD

c) ERD

7) **Interface Design**

a) Create a throw-away prototype for the proposed system. Include all the main features that you have suggested as solutions for this system. *You are not required to upload the site or create any extra external components such as database, animation, advertisements, etc. The prototype will be used for your presentation.*

b) Discuss the concepts and principals that you have considered / applied into creating the GUI of your system, including input and output interface design.

PART-B – INDIVIDUAL COMPONENT (30%)

8) **Requirement Gathering**

a) For the initial state of the project, identify ONE method of information gathering (investigation or requirement gathering) that you would use for this system. Discuss the benefits and setbacks method chosen. *You are advised to use different methods among group members.*

b) Explain the conduct of the investigation method including how it will be carried-out, target users, location, etc. Create a set of questions that you can use for your investigation. *Display the questions only related the system development project.*

9) **Design**

a) After the construction of DFD (Design Diagram), choose at least TWO different components of DFD and design a Data Dictionary for each. You are advised to use different set of components among group members.

b) After the construction of DFD Level 0, choose ONE of the process in your DFD Level 0 and design DFD Level 1 for the selected process. You are advised to use different process among group members.

10) Presentation (10%)

    a) Each team member / individual should present his / her contribution of the solution for the Assignment. Marks awarded here would depend on Project Knowledge / Professionalism and Contribution of the individual.

DOCUMENTATION STANDARD:

- Your group needs to hand in the assignment on the due date mentioned online, with all the necessary components as suggested above. Clearly separate and indicate the Group component and Individual component in your documentation.
- The maximum of 5000 words is recommended.
- Include the standard report components such as Cover Page, Table of Contents, and Table of Figures, the list of references / bibliography and appendices where necessary.
- Include a 'Workload Matrix', indicating the contribution of each individual for each required component (shown in percentage) and should be signed off by each team member, attached to the APPENDIX part of the final document.
- The presentation will be conducted according to the date & time allocated to each group. Late submissions will not be assessed unless extenuating circumstances are upheld.

PERFORMANCE CRITERIA

Distinction (75% and above)

This grade will be assigned to work where the documentation is complete and describes in detail, with little or no errors, the following components: introduction, project planning, feasibility study, usage of SDLC, system analysis and design in accordance with excellent documentation standards. To obtain this grade, the candidate's individual assignment should show all techniques of process applied with little or no errors. All deliverables of the individual component should be coherent with detailed description to explain the selection and application of investigation techniques, good creation of data dictionary. Overall documentation standards for both the group project as well as the individual assignment should be of excellent quality.

Credit (65% – 74%)

This grade will be assigned to work where the documentation is complete and describes briefly, with some errors, the following components: introduction, project planning, feasibility study, usage of SDLC, system analysis and design in accordance with good documentation standards. To obtain this grade, the candidate's individual assignment

should show all Data dictionary with some errors. All deliverables of the individual component should be coherent with detailed description to explain the selection and application of investigation techniques. Overall documentation standards for both the group project as well as the individual assignment should be of excellent quality.

Pass (50% - 64%)

This grade will be assigned to work where, most of the basic requirements of the documentation listed above, such as introduction, feasibility reports, logical process models, are of adequate standard which is evident in the hardcopy of the documentation. The physical design of the system in terms of the interactive screen design and report maps adequately against the logical design presented in the documentation. The documentation should be of adequate standard in terms of language, layout and flow. Some accurate, relevant and up-to-date referencing was visible. Group presentation of the team should have adequate visual aids with relevant information presented and adequate coordination among group members. Individuals should display an adequate level of professionalism and project knowledge.

Fail (Below 49%)

This grade will be assigned to work where, most of the basic requirements of the documentation listed above, such as introduction, feasibility reports, logical process models, are of poor standard which is evident in the hardcopy of the documentation. The physical design of the system in terms of the interactive screen design and report shows little or no mapping / linking with the logical design presented in the documentation. The documentation is of poor standard in terms of language, layout and flow. Minimal or no referencing was done. Group presentation of the team has poor visual aids with irrelevant information presented and poor coordination among group members. Individuals display on the average a poor level of professionalism and project knowledge.