ASIA PACIFIC UNIVERSITY OF TECHNOLOGY & INNOVATION
Diploma
Systems Analysis and Design (AAPP007-4-2)

Submission Date & Time: Monday, 29 September 2022, 11.59 PM

INTRODUCTION

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

You have been given the task to plan, analyse and design an Information System for the given Case Study. This should be done in groups, each comprising of **FOUR (4)** members. **(amadea) (dalton) (bryan) (ian)**

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%).

Individual members of the group must realise their responsibility to their peers and behave professionally.

OBJECTIVES

The objectives of this assignment are to:

1. Provide knowledge of the basic techniques of systems analysis and design.
2. Explain the roles and responsibilities of system analysts and project managers within each phase of the systems development lifecycle (SDLC).
3. To introduce the various stages and activities involved in developing a system using through systems development lifecycle (SDLC).
4. To provide students with relevant skills on the application of tools and techniques in planning and gathering information.
5. To provide the knowledge of how input, output, and interface design will determine whether the system will be accepted by the user or not.
6. To instill the importance of teamwork and good management skills.

ASSESSMENT

This assignment contributes to 60% of the module assessment

CASE STUDY: BOOKWORM PARADISE

Bookworm Paradise (BWP) is major bookstore in Malaysia that houses a grand collection of books published across different generations and genres. Located at the heart of Kuala Lumpur, the bookstore takes pride at providing the adequate resources seeked by hundreds of customers who walk into their 'paradise' daily! Their primary service is naturally centred to buying and selling any form of reading materials – novel, biography, storybook, academic journal, comics, magazines – to name a few. Recently, BWP has decided to expand their services to include some new features such as book rentals similar to libraries, e-books viewing as well as in-house reading. Extensively, having conquered the local city market, they now wish to venture into the national and eventually international markets. For this, BWP will require a digital platform to showcase their expansive collection and allow customers worldwide to expound their multiple services.

keynote:
1. **Bookworm Paradise (BWP)**
    a. **bookstore in Malaysia, KL**
    b. **provides plentiful resources that are sought after by daily customers**
2. **Business**
    a. **buying & selling readables**
        i. **novel**
        ii. **biography**
        iii. **storybook**
        iv. **academic journal**
        v. **comics**
        vi. **magazine**
    b. **book rentals**
    c. **e-book viewing**
    d. **in-house reading**
3. **Goals**
    a. **expand their business**
    b. **penetrate into the national & international market**
4. **Requirements**
    a. **digital platform to showcase their collection of books**
    b. **connect with customers and allow them to use their services**

The primary operations are expected to be standard purchasing of books/ reading materials from various publishers, housing them and then selling them to prospective buyers. However, customers will now have the option of viewing and buying their desired books online as well. They will only be required to register as a **member** via the online system to **access this privilege**. The books will then be delivered right to their doorstep. Similarly, book rental will be a new service provided for customers who do

wish to hold on to their books forever. In both cases, customers will need to make the due payments upfront and provide relevant details such as delivery address and contact number. For the book rentals, returned books will inspected and fines may be issued for damaged copies. Also, customers will need to pre-specify the duration period for rentals.

keynote:
1. **Customer**
   a. **view and buy books**
   b. **rent books**
2. **Steps to buy books**
   a. **customer register as member**
   b. **customer view books and add to cart**
   c. **customer provide necessary details (name, contact no, emails)**
   d. **select delivery address**
   e. **customer makes payment**
   f. **books delivered to doorstep few days later**
3. **Steps to rent books**
   a. **customer register as member**
   b. **customer view books and add to cart**
   c. **customer select duration of rental**
   d. **customer provide details & select address**
   e. **customer receive books to read**
   f. **customer returns book when they time is up**
   g. **books are checked for damages**
   h. **customers are waive / fined depending on book condition**

Furthermore, customers will now be able to read part of the book online through the new e-book viewing feature. They can then choose to purchase, rent or not obtain the book at all. Similarly, customers who walk into the premises will be allowed to an in-house reading of either part or the entire book. The charges for this services will vary accordingly to the limit and duration of reading.

keynote:
1. **in-house reading**
   a. **customer comes in and specify duration**
   b. **customer selects book and read (can be full-read or partial-read)**
   c. **fees are charged in the end**
2. **online reading**
   a. **only partial-reading allowed**
   b. **no need to register to view**
   c. **must be registered to buy book/rent book later on (if they want)**

To attract more customers, BWP is willing to offer various discounts for all the services aforementioned above. Discount categories will vary across age groups, book genres, nationality and membership type – premium, gold and standard.

keynote:
1. **discount based on**
   a. **age group**
   b. **book genre**
   c. **nationality**
   d. **membership type**
      i. **premium**
      ii. **gold**
      iii. **standard**

All these services and information will be maintained by the bookstores administrator who will then report to BWP's manager. The managers of BWP would also be able to print standards reports such as a list of books sold/rented/read online, membership subscription and revenue gained. The BWP owners have approached you to plan, analyse, design, and develop a **prototype** for their venture that should be able to handle book purchases, sales, rentals and all mentioned services. They have allocated RM 80,000 for the project and the estimated timeline is four (4) months.

keynote:
1. **bookstorm admin**
   a. **manage all information**
2. **Manager**
   a. **print reports such as:**
      i. **list of book sold/rented/read online**
      ii. **membership subscription**
      iii. **revenue gained**
3. **develop a prototype to:**
   a. **handle book purchase**
   b. **sales**
   c. **rentals**
   d. **etc**
4. **resources**
   a. **4 months**
   b. **MYR 80,000**

The following are the possible minimum requirements or functions for the Bookworm Paradise management system:

Customer functions:
1. Register
2. Login
3. Purchase Book
4. Make Payment
5. Receive Receipt and Book

Compulsory!!!

Staff (BWP) functions:
1. Login
2. Add Booking Information (add services?)
3. Process Payment
4. Generate Receipt and Token

Compulsory!!!

Note: You are not only limited to the above requirements. Any other relevant requirements to ease the process of managing the Bookworm Paradise common operations can be added if you think they are viable.

Each groupmate use one requirement gathering technique (2 minimum)

What software is needed? (done by 1 member, using one technique)

(going to be covered soon)

SUGGESTED PRESENTATION FORMAT:

This project is a group effort and should be treated as though you are proposing a system for an organisation. The following is a suggested minimum report format. It is recommended that your report contain at least the following:

Cover Page
Your cover page should contain the following items:
- APU Logo
- Subject Code & Title
- System Name
- Intake Code
- Your name and ID

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

Note:
1. no database needed
2. no validation for login (just fill in, and it should go to home page)
3. presentation date will only involve prototype
4. that's why report should be super detailed
5. Each member is expected to take one SDLC phase
6. **3 mandatory components** (exam, assignment, presentation)

PART- A – GROUP COMPONENT (70%)

1) **Introduction**

   a) This should include the introduction of the company, its business process, an overview of the **proposed system**, and your **project objectives**

2) **Problems and Proposed Solutions**

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

   b) Explain your proposed solutions. You may use diagrams to aid your explanation. **Include the scope and the objectives of the proposed system.**

3) **Project Planning**

   a) Using SDLC as a 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.

   Note: 'Workload Matrix' will be provided by the lecturer.

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

7) **Interface Design**

   a) Create a simple 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 principles** 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 stage 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.

      (Functional/Non-Functional)(Architecture)(Business)(System/Technical)

      (User/stakeholder)(security/interface) (^ optional sub-topics)

   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 to the system development project.

9) **Design**

   a) After the construction of DFD Level 0, choose ONE of the processes in your DFD Level 0 and design DFD Level 1 for the selected process.

      You are advised to use different processes among group members.

   b) After the construction of DFD Level 1, design a Data Dictionary.

10) **Presentation**

   a) Each team member/individual should present his / her contribution to 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 on the cover sheet of the assignment, with all the necessary components as suggested above. Separate and indicate the Group component and Individual component in your documentation.
- Final Documentation has to be word-processed, printed in A4 size paper, and professionally bound. A maximum of 10000 words is recommended.
  - o Note: Exclude the cover page, table of contents, workload matrix, and references pages when you do a word count. Make sure only count words/answers to the questions.

- o Use the templates for the cover page, workload matrix, provided by the lecturer.
- o Writing format – words in paragraphs: Times new roman, 12 font-size, 1.5 spacing, justified alignment.
- o Words in tables: Times new roman, 10-11 font-size, 1.0/single spacing, justified alignment.
- Please consider the environment and don't print unnecessarily. Include all your work (copy) into an optical disk, to be attached to the documentation. This could be used to scan for plagiarism. Any additional/redundant materials could also be included in the optical disk.
- Include the standard report components such as Cover Page, Table of Contents, Table of Figures, the list of references/bibliography, and appendices where necessary. Use the 7th APA referencing style.
- Do not copy any text/contents from external sources to avoid plagiarism issues.
- 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.
- 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 following excellent documentation standards. To obtain this grade, the candidate's assignment should show all techniques of process applied with little or no errors. All deliverables of the individual component should be coherent with detailed descriptions to explain the selection and application of investigation techniques and the good creation of a data dictionary. Overall documentation standards for both the group project as well as the individual assignment should be of excellent quality. To obtain a grade at this level, individuals should be able to address all issues with regards to not only their component of the module but also be those of the other group members. Individual's contribution to the project, at this level, should be more than 75% and overall peer evaluation should indicate excellent standards.

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 following good documentation standards. To obtain this grade, the candidate's assignment should show all Data dictionaries but have some errors. All deliverables of the individual component

should be coherent with detailed descriptions 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. To obtain a grade at this level, individuals should be able to address most issues with regards to not only their component of the module but also be those of the other group members. Individual's contribution to the project, at this level, should be more than 65% and overall peer evaluation should indicate excellent standards.

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 an 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. Peer evaluation of an individual's contribution should be adequate.

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 a 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 average a poor level of professionalism and project knowledge. Peer evaluation of an individual's contribution is poor.