**ASIA PACIFIC UNIVERSITY**

**CT046-3-2 SDM – SYSTEMS DEVELOPMENT METHODS - DEGREE – LEVEL 2**

**IN-COURSE ASSIGNMENT**

**LEARNING OUTCOMES:**

* Construct the different views of a system using tools and techniques.

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| * Demonstrate appropriate analysis, design, and implementation techniques through a simple prototype. |

**CASE STUDY:**

**The Legal101: Law Firm** **System**

Legal101 is a full-service regional law firm that is dedicated to the provision of high-quality legal services with extensive experience with individual and organizational clients. Competition for clients is intense in this industry. Large law firms have very deep pockets, with many services to offer clients. However, Legal101 has been able to cultivate a substantial client base of upper-middle-income clients in Southeast Asia. To maintain a competitive edge with its clients, The Legal101 is in the process of modernizing its online system. The law firm managing partner asked your team to work with him as an IT consultant. He wants you to help The Legal101 develop an information system that will support the law firm’s operations and future growth. At your initial meeting, he provided you with some law firm background information and situation.

The law firm is represented by many lawyers, who handle cases for their clients. Each lawyer may specialise in one or more areas of practice e.g., Employment Law, Banking Finance and Securities Law, Accidents and Personal Injuries, Administrative, and Constitutional Law, etc. When a lawyer specialises in a certain practice, years of experience need to be recorded. To practice law, a lawyer needs to possess at least one valid practicing certificate licensed by a state’s bar association. Some lawyers may possess more than one certificate to allow them to practice in different countries. They need to manage these records in the new system.

There are many lawyers in the firm, and some lawyers do not handle any cases, as they may be performing some administrative or investigative work on behalf of others. However, some lawyers may handle many cases, where each case has been presented by a client. A client may present many cases, and there must be at least one lawyer or many lawyers handling a case. Cases will have many supporting documents. Some cases, but not all, may require hearings in court. These cases would be assigned to a court. The cases would then be scheduled for one or more hearings at the court to which they have been assigned. The administrative staff should be able to manage all case detail records in the system.

A client may request a consultation slot through a new system, where the client must first create an account on the system. Through this method, the client will be issued with an electronic format appointment slip once the request has been successfully made. Furthermore, the other processes such as assigning lawyers to the case, case documents, hearings and court records, consultation records, billing, business reports, etc should be managed through the system.

The Legal101 law firm has allocated RM 80,000 for the project and the estimated timeline is four (4) months. You are required to plan, analyse, design, and develop a prototype for the law firm.

*\*Note: You are not only limited to the above requirements. Any other relevant requirements to ease the process of managing the* *Legal101 law firm operations can be added if you think they are viable.*

**TASKS:**

***Work with 4 - 5 students in a group. Assume that you are a group of software development consultants, hired to advise the Legal101 law firm on efficient development approaches for their project.***

You are required to document the following:

# Project Planning (Group Task) -- 2 of April

* 1. **Introduction** - Provide a brief introduction to Legal101 law firm including its stakeholders, users, current business process, etc.
* Tan Zhong
  1. **Problem Statements** – Discuss the existing business problems of the Legal101 law firm.
* Firdaus
  1. **Suggested System** – Briefly explain the suggested system that you would propose for the above project. Include a conceptual diagram to show your initial idea of the new system (you may use any diagram such as a Rich Picture, Context Diagram, etc).
* Asad and Long Feng
  1. **Scopes, and Objectives –** Definethe Scopes and Objectives for the Legal101 law firm project.
* **Sheng Kit**
  1. **Project Scheduling** - Create a project schedule (such as a Gantt Chart) according to one of the system development methodologies that you have suggested in Part 2.2 below. Clearly show the duration, tasks (and sub-tasks), and predecessor (parallel, sequential, iterative, if any) recommended for the project. – Waterfall methodology
* **Hanson**

1. **Agile Principles and IS Methodologies (Individual Task) – 9 of April**
   1. **Agile Principles** - In the initial stage, your team has decided that Agile Methodscould be beneficial to be applied to the Legal101 law firm project. **Each student** is to discuss in detail **TWO (2) Agile Principles** that you would implement to make your projects more agile. Explain the strategies that you would take to implement them.

* *Group members are to suggest and discuss different Agile Principles* *with each other.*
* *Tan Zhong – 1 and 2*
* *Sheng Kit – 3 and 5*
* *Firdaus – 8 and 9*
* *Long Feng – 4 and 7*
* *Asad – 6 and 11*
* *Hanson – 10 and 12*
  1. **IS Methodologies –** A system development methodology refers to the steps that are used to structure, plan, and control the process of developing an information system. **Each student** is to suggest and discuss in detail **ONE (1) of the IS methodologies**. Explain how you would carry out your Legal101 law firm project according to the methodology.
* *Members are to suggest and discuss different IS methodologies with each other.*
* *Your answers in a group should include methodologies from Structured Methodology, Agile-based Methodology including Process Oriented Methodology, and People-Oriented Methodology.*
* *Tan Zhong – Extreme Programming (XP)*
* *Sheng Kit – RAD*
* *Firdaus – Spiral*
* *Long Feng – Scrum*
* *Asad – V-Model*
* *Hanson – Waterfall*

1. **System Analysis (Group Task)**

Assume that you have collected ample data and information for the Legal101 law firm project during the ‘Requirement Elicitation’ stage. Describe in detail **TWO (2) analysis methods** that you would use to analyse data gathered from your investigations. Justify your selections.

1. **Design** **(Individual Task)**

Design often comprises the modelling of the system. **Each student** is to discuss **ONE (1) modelling technique** that you would adopt for the Legal101 law firm project and is relevant to your selected methodology (in Task 2.2). Then, based on your selected modelling technique, each student is also required to **create ONE (1) diagram** for the Legal101 law firm project.

* *Group members are to discuss different modelling techniques and create different diagrams from each other e.g., Use Case diagram, State Machine Diagram, Class Diagram, etc.*

1. **Implementation and Deployment (Group Task)**
   1. **Construction** – List and explain the **functions and purpose of the major software** (and tools) that you would consider in the construction of the new system for the Legal101 law firm.
   2. **Proof of Concept** - Create a **‘throw-away’ prototype** for the Legal101 law firm system (a simple form of a prototype that is for demonstration purposes).
   3. **Testing** - Discuss in detail any **TWO (2) testing methods** that are suitable for the Legal101 law firm system. Explain how these testing will be carried out for your system.
   4. **System Deployment** – Compare any **TWO (2) types of ‘system change overmethod(s)’** available. Based on your comparison, **choose only ONE (1)** change-overmethod that is best suited for the Legal101 law firm project. Explain in detail how and why the selected method is carried out.

**ASSIGNMENT DELIVERABLES AND CONDITIONS:**

* Final Documentation must be word-processed; submission is done online through Moodle. A maximum of 10,000 words in length is recommended.

Note: Please exclude the cover page, table of contents, workload matrix, and references pages when you do a word count. Make sure to **only count words/answers to the questions**.

* Include a ‘Workload Matrix’ (to be given by the lecturer), 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.
* Citation of facts is mandatory. Obtain your facts from credible sources into references/bibliography. Avoid ‘dumping of data’. Instead, the facts that you discuss should be made relevant to your case/project. Kindly use the **7th Edition of APA referencing style**.
* It is acceptable for the discrete activities of this assignment to be undertaken by individual group members. However, all group members must understand the presentation in its entirety. At the end of the submission, your group might be asked a series of questions to explore your understanding and analysis of the given problem.
* Late submissions will not be assessed unless extenuating circumstances are upheld.

**Submission Date**

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| **Components** | **Submission Date and Time** |
| Project Planning | 16 May 2023  Before 11:59 PM |
| 1. Agile Principles and IS Methodologies |
| 1. System Analysis |
| 1. System Design |
| 1. Implementation and Deployment |

**Marking Criteria**

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| **Components** | **Allocated Marks** |
| Project Planning (Group Task) | 10 |
| Agile Principles and IS Methodologies (Individual Task) | 20 |
| System Analysis (Group Task) | 10 |
| System Design (Individual Task) | 25 |
| Implementation and Deployment (Group Task) | 30 |
| Documentation & Report (Layout, writing, formatting, referencing, etc.) (Group Task) | 5 |
| **Total** | **100** |

# 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, feasibility study, usage of SDLC, selection, and application of investigation techniques, and analysis / logical 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 diagrams. 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 concerning not only their component of the module but also 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 (56% – 69%)

This grade will be assigned to work where the documentation is complete and describes briefly, with some errors, the following components: introduction, feasibility study, selection and application of investigation techniques, and analysis / logical design following good documentation standards. To obtain this grade, the candidate’s assignment should show all techniques of the methodology applied but some errors. All deliverables of the individual component should be coherent with detailed descriptions to explain the diagrams. 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 concerning not only their component of the module but also 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 (40% - 55%)

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, and data dictionary 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-to-peer evaluation of an individual’s contribution should be adequate.

## Fail (Below 40%)

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, and data dictionary 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. The 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-to-peer evaluation of an individual’s contribution is poor.

End