The University of Melbourne
School of Computing and Information Systems
SWEN90016 Software Processes and Management
Semester 1 – 2020

Assignment Two

Learning Outcomes:

The students will demonstrate the ability to:

- Choose an appropriate Software Development Lifecycle (SDLC) model for a given project brief
- Plan the activities involved in the chosen model and develop a Project Management Plan (PMP)
- Execute, monitor and control processes to achieve a desired outcome
- Work effectively in a team

Note: Each member is expected to spend 30-40 hours on this assignment as per handbook. Therefore, the group assignment is projected to take 100-120 hours.

What your team is expected to do:

Your team is required to:

1. Develop a prototype (working software which includes a web user interface and persistent data storage) of the software system described in the case study in Appendix B.

2. Develop a Project Management Plan (template provided in Appendix A), that demonstrates that you have planned the activities required to develop the software system in item 1.

3. Demonstrate that you have executed, monitored and controlled your plan; you must document progress in the relevant sections of the PMP as per specification.

   Note: You may choose any type of SDLC (Formal, Agile); your PMP must justify why you chose the SDLC in Section 5.4 of the PMP

4. When you submit the assignment please clearly state the SDLC in the title
   For example
   T22_06_Agile
   T05_01_Incremental

Important Notes:

- Your team may use any language/technology/framework to develop the web-based system; you can choose a simple web development platforms such as WordPress (https://wordpress.com/create-website/) or more a complex web development framework which requires full-stack development. Please ensure that you adequately research your choice, for instance many teams choose a certain web development platform last semester and discovered halfway through the project that they had to pay for most of the functionality.
- The team (not a single member) must research available frameworks and decide on the framework the team is going to use, before the first submission. The rationale for the choice of the framework must be documented in Section 6.4 of the PMP. If the team has problems choosing a framework (or reaching consensus within the team) before the first submission please ensure that this is documented in the minutes as this is part of the process.
- When choosing the framework please consider the programming skills of the team and the learning outcomes your team wants to get from this project – for example, your team may choose a complex web development framework, which requires technical development skills (which may require you to spend extra time on it), if your team believes that this knowledge is useful for you in the future, hence worth spending the effort although the marks may not justify the time you spend.
- Please remember that the final product is only worth 7% of this assignment i.e. 2/30 marks; >90% of the marks will be for how well you plan, manage and execute the process and how you work as an individual in a team.
- A guideline for word count, 5 points ~ 200-250 words; 10 points ~ 1 page (500 words).

Key Deliverables and Marks:

ID	Artefact	Submission	Date	Marks
1	Project Management Plan (PMP) Version 1.0 Sections 1-6 completed	Canvas – team submission	Friday 18 September 6pm	11
2	Project Management Plan (PMP) Version 1.1 Updates to the PMP (Section 1-6) as needed. Section 7	Canvas – team submission	Monday 26 October 8am	12
3	Individual Reflection Use the Peer Assessment form in Appendix C to assess your team member's contribution. If you do not divide the money equally, you will need to reflect on the contribution by you and your team members (300 words approximately). Please note: **Staff reserve the right to assess students individually based on their contribution to the team.** If the reflection flags non-contributing members, staff has the discretion to award a	Canvas – individual submission as a single report	Monday 26 October 8am	

	reduced mark (to the total of 30 marks for this assessment) to such members.			
4	Final Product – Software System	Group demonstrate to the tutor	Week 12 workshops- Zoom demonstration	2

Submission and Feedback

- Your tutor will create a group for your team on Canvas
- All submissions and feedback will be via Canvas

Penalty for Late Submission

Late submissions without an approved extension will be subject to a penalty of **10% per day**. No assignment will be accepted more than one week late.

Warning about plagiarism

It is University policy that cheating by students in any form is not permitted, and that work submitted for assessment purposes must be the independent work of the student concerned (or, where joint work is permitted, of the students concerned). The University Policy and Procedures for Academic Misconduct can be found at: https://academichonesty.unimelb.edu.au/#policy. Plagiarism, or copying of another's work without proper acknowledgment, is not permitted. Nor is it permissible for anyone to allow another person to copy their work for the purposes of assessment. Assignment aims to evaluate a case study from a risk management perspective.

Team Dispute Resolution

You are expected to resolve disputes within your team as a standard component of team communication. If unresolved concerns over the level of contribution from each team member occur, you should alert your tutor early and submit an individual reflection to flag this. Team marks **may** be reduced for non-contributing team members as explained in the key deliverables.

Appendix A – PMP Template

1. Title Page *<This should include your choice of SDLC>*

2. Executive Summary (10 points)

   <Give your stakeholders a concise preview of the project's plan, purpose and approach. Consolidate the main points of the document to explain why the project is being undertaken, who will be responsible for implementing it, how much it is likely to cost, the desired outcomes and benefits it is likely to produce, and how long it will take to complete. An executive summary should be organised according to the sequence of information presented in the document. Use plain English and ensure all acronyms are fully expanded out the first time they are used. Keep the executive summary as succinct as possible and contained to a single page.>

3. Table of Contents

4. Introduction (5 points)

   4.1 Purpose of document

   4.2 Audience of document

   4.3 Evolution of document <Please ensure that you continually update this section. It will be checked for both your first and second submission>

Version	Individual Responsible	Date created	Comments
		Click here to enter a date.	

5 Project Information

5.1 Key Stakeholders (10 points)

<From the project brief identify the key stakeholders for the project>

Scope

5.2 What is in-scope? (5 points)

<Detail the scope of the project. The execution of the entire project starts with a clear and complete scope definition. Every other element of project planning will relate to scope and to the deliverables listed below. Clearly state what requirements your team is planning to deliver in the project.>

5.3 What is out-of-scope? (5 points)

<It's equally important to list what the project team isn't responsible for delivering. This section provides the project team with the opportunity to clearly indicate what is not in scope of the project where there may be any doubt or confusion.>

5.4 Delivery approach / SDLC - Formal or Agile (15 marks)

☐ Formal ☐ Agile

*<Provide a **justification** as to why the chosen lifecycle is suitable for the case study. This should include a comparison to at least one other SDLC to justify your argument. We will not accept a Hybrid approach.>*

5.5 Business Value (Financial & Non-Financial Benefits) (5 marks)

<Provide a qualitative description of the business value for all the stakeholders, (quantitative dollar amounts not expected). Discuss how your IT project adds value and why it should be done.>

5.6 Constraints (5 marks)

<State any constraint you can identify, if there exists any.>

6 Project Governance

6.1 Roles and Responsibilities (5 marks)

<Identify the roles and responsibilities of the team. Example project roles:
waterfall: Business Owner / Senior User / Project Manager/Technical Subject Matter Expert
agile: Scrum Master / Product Owner / Dev Team Members / Subject Matter Expert>

6.2 Communication Plan (5 marks)

< Include a communication plan for your team, i.e. how your team plans to communicate during this project. Think about what your regular plan is, what is a contingency plan if the regular mode of communication does not work? >

6.3 Risk Management (15 marks)

<Show 5 key risks in the Risk Impact Analysis Table; ordered from highest to lowest priority. Please choose risks that are specific to this project. Generic risks such as time, cost and scope will not be allocated marks.>

Risk ID	Risk Type (Business/Project/Product)	Description	Probability	Impact	Justification *< why your team chose this as a key risk>*

<Show the Risk Register for the risks that are in the control of the team. This risk register is based on the risk table>

Risk ID	Trigger	Owner	Response	Response Strategy type	Resources Required

6.4 Technology (15 marks)

< Summarise your research into the language/technology/framework for the software product, and state what language/technology/framework your team has chosen to use with a justification for the choice. Include at least one other language/technology/framework in your discussion.>

6.5 Project Planning (10 marks)

< If you chose a formal SDLC provide a Project Schedule for the chosen SDLC which shows the work breakdown structure, dependencies, resources required, a project timeline on a Gantt chart, including weekly milestones for at least weeks 9, 10 and 11.

If you chose an agile SDLC, provide a Sprint Plan for the first sprint, by choosing the appropriate feature-level stories, and breaking them into appropriate tasks. Sprint Burn-down chart should have (business value) Story Points on the y-axis. The Sprint Swim-lane board should be populated with tasks which include a link to their User Story with Story Points. Task may be estimated in hours. >

7 Project Execution, Monitoring and Control

7.1 Project Status: Friday Week 9 (10 marks)

< Write a summary of your project status, and how you are tracking with respect to milestones and deliverables, as if the project manager/Product Owner was reporting to the stakeholders. This should be an accurate reflection of how the team progressed, not a generic update. Any changes need to be included to the 'Evolution of the Document' table>

7.1.1 Process Related Artefacts (15 marks)

*< Include all process related artefacts relevant to your process. e.g. agendas, minutes, a timesheet per member (**timesheet per member is required regardless of the chosen lifecycle**), **screenshots of communications* (e.g. whatsapp messages, wechat) or copies of emails;** progress Gantt charts, updated schedules, images of Kanban boards, sprint planning meeting outcomes, sprint review inputs and outcomes, velocity estimations, burndown charts, low level task decompositions, and any other process related artefacts that will demonstrate to your*

markers how well you were executing and managing the process (you may include them in an Appendix with a reference from this section to improve readability of the document).>
**Communications must be in English*

7.1.2 Product Related Artefacts (10 marks)

< Include all products related artefacts such as requirements, use cases, user stories, designs, completed features lists, screen shots to show the status of the product and any other product related artefacts that will demonstrate to your markers how well you were progressing towards achieving the milestones you planned (you may include them in an Appendix with a reference from this section to improve readability of the document).>

<All other artefacts that show progress but cannot be included in the report, including code written by your team (if applicable), must be submitted as a .zip file through the submission link we provide for this purpose>

7.1.3 Risk Monitoring and Control (5 marks)
< Write a brief update on the risk status:
- *Did any of the risks originally identified occur?*
- *If the risks occurred did you mitigate the risk as planned?*
- *Did you identify new risks?*

7.2 Project Status: Friday week 10 (10 marks)
< Refer to 7.1 description.>

7.2.1 Process Related Artefacts (15 marks)
< Refer to 7.1.1 description.>

7.2.2 Product Related Artefacts (10 marks)
< Refer to 7.1.2 description >

7.2.3 Risk Monitoring and Control (5 marks)
< Refer to 7.1.3 description >

7.3 Project Status: Friday week 11 (10 marks)
< Refer to 7.1 description.>>

7.3.1 Process Related Artefacts (15 marks)
<Refer to 7.1.1 description.>

7.3.2 Product Related Artefacts (10 marks)
< Refer to 7.1.2 description.>

7.3.3 Risk Monitoring and Control (5 marks)
< Refer to 7.1.3 description.>

Appendix B – Case Study[1]

Business Case Background:

Beth is an owner of a small business in Brunswick, Melbourne. She is a hairdresser who goes to aged care residences and provides beauty treatments to elderly men and women. These include haircuts and hair colouring. To grow her business, she also sells some products such as shampoos and conditioning treatments. She has many patients in aged care residences as well as older people that live independently. She also has a few clients that are not elderly but are temporarily less mobile (for instance, they broke a leg).
It has become very popular for individuals to have a hairdresser come to their houses and her business is booming. She realised there is growth potential for her business. The plan is to have a few more mobile beauty care professionals working for the business, and decides to hire a newly qualified hairdresser and train them for this niche market. Her son, John is a nurse and suggests that perhaps some of his hospital patients may also want to make use of her mobile services.

She wants a business website which shows the key information about the different services her business provides. Such hair dressing options, waxing and manicure and pedicure services. And which shows the available appointment dates and times that can be booked.

Currently, she does not have a receptionist, and usually uses an answering machine to collect client booking details over the phone, such as: the client's name, service type, preferred appointment date request and preferred beauty care professional (currently only Beth and the trainee). Beth sometimes takes bookings over the phone but is often busy and cannot answer in person. Some clients book their next appointment when Beth sees them during their current appointment. However, sometimes the client's children or carers will make and pay for the appointments and this usually involves a couple of time-consuming phone-calls.

The current appointment process is limiting the growth of her business, and when she does not pick up a call sometimes when she calls back the potential client has already found someone else. Finding a new client and setting up their initial appointment is key for her business growth, as many of her clients are repeat clients.

Sarah, Beth's daughter, is a student in Business and IT at the University of Melbourne. Sarah suggests that a software booking system may be a good way to improve the efficiency of her business operations. As Beth has spent most of the capital buying products to sell to her clients, she has limited funds to spend on a software system. She decides to have the software built by a group of students enrolled in SWEN90016 at the University of Melbourne, rather than paying a professional software development company. She had heard about the good outcomes from such projects in the previous semester from her friend Jiali, who has previously used a

[1] While this case study is hypothetical it resembles a typical IT project.

SWEN90016 team to build a similar software solution. Beth is convinced that this is the best approach given the current circumstances.

In the future she would like to integrate this system with an invoicing and payroll systems which will further improve the efficiency of her business.

Your team is required to develop a web-based system for appointment management with the following functionality by the project due date.

Key Requirements:

1. The super user is the owner of the centre (Beth in this case). This user is referred to the ***Admin*****.** The ***Admin*** has a pre-defined and system recognizable email username and a default initial password for login (you do not have to provide an interface to enter this).
2. The ***Admin*** user must be able to add ***Beauty_Care_Services*** to the system by providing the following information:
    a. The type of the ***Beauty_Care_Services***: Initially there are currently 3 options –(i) haircut; (ii) hair wash & dry; (iii) hair colour
    b. Charge for a one-hour service session (you can assume all services are one-hour consultation sessions)

3. ***Customers*** must be able to register in the system by providing the following ***Personal_Information***:
    a. Name of client
    b. Home address
    c. Contact phone number
    d. Email address
    e. Initial password
    f. Extra information (e.g. broken leg, fragile)

4. ***Customers*** should also be able to add ***Biller_Information***:
    a. Name on invoice
    b. Biller email address

5. ***Customers*** must be able to login to the system using their email address and password provided in requirement (3).

6. Logged in ***Customers*** must be able to update their ***Personal_Information and Biller_Information***.

7. Logged in ***Customers*** must be able create a booking request, referred to as an ***Appointment_Booking.*** When creating an ***Appointment_Booking, Customers*** must be allowed to:
    a. Select the type of ***Beauty_Care_Services*** from a list of available types
    b. Select a suitable time for the appointment from a list of available times – you can assume that each ***Beauty_Care_Services*** is available for consultation from 9 am – 5 pm daily (including weekends) unless some other ***Customer*** has already booked an appointment with them at the time.
    c. ***Location*****:** Initially this will be the client's home address.
    d. Enter an optional message to be included.

8. When the customer completes the ***Appointment_Booking,*** the system must send an email to the ***Beauty_Care_Services*** with the following information regarding the booking:
    a. Name, phone number, email address of the ***Customer***
    b. Date and time of the booking
    c. Message to the ***Beauty_Care_Services*** as per requirement 7 (d).

9. Logged in ***Customers*** must be able to view or cancel their appointments. If a ***Customer*** cancels an appointment, an email must be sent to the ***Beauty_Care_Services*** with information in requirement (8)-(a) & (b) and a appointment cancellation message.
10. ***Admin*** user must be able to view a list of all appointment requests for all ***Beauty_Carer***.
11. ***Customer, Beauty_Carer Beauty_Care_Services*** and ***Appointment_Booking*** information must be persisted in the system (stored in a database).

Notes:

- In the initial system, only Beth is an ***Admin*** at ***Beauty_Care_Services*** and has the option to view booking information. Beth should be able to access the list of appointments from the same url.

- In the future Beth wants to integrate this system with other systems to improve the efficiency of her business:
    a. an invoicing system will need this system to generate an invoice for the client when an appointment is completed
    b. a payroll system that calculates staff wages will need this system to provide staff identity and hours worked on appointments.

- Some obvious requirements are not included in these requirements to limit the scope for the first version of the system, but future enhancements to the system will be made to the system if the business is successful.

Appendix C – Peer Assessment

Student Name: Student #: Team #:

Other Team Members Names						
General Aspect	**Specific Aspect**	**Self**	**Team Member 2**	**Team Member 3**	**Team Member 4**	**Team Member 5**
	Name					
Team Process	Attended team meetings					
	Maintained contact with other members					
	Contributed constructively in team discussion					
	Cooperated in team activities					
	Encouraged & assisted other members					
The Tasks	Complete assigned tasks on time					
	Contributed intellectual ideas and solved problems					
	Did their fair share of the work					
	Read and commented in a timely manner on report					
Overall	Based on your ratings, this student's overall contribution					
How would you divide $1000 among all the team based on their contribution to your project		**$**	**$**	**$**	**$**	**$**

Scale

1 – did not contribute in this way
2 – willing but not very successful
3 – average contribution to process or tasks
4 – above average contribution to process or tasks
5 – outstanding contribution to process or tasks

If you do not divide the $1000 equally among all team members, please complete the team reflection.
Teamwork Reflection:
< Reflect on how well the group functioned, the quality of the teamwork and the communication principles and style.>