The University of Melbourne
School of Computing and Information Systems
SWEN90016 Software Processes and Management
Semester 1 – 2021

Assignment Two

Learning Outcomes:

The students will demonstrate the ability to:

- Choose an appropriate Software Development Lifecycle (SDLC) model for a project brief
- Plan 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 platform such as WordPress (https://wordpress.com/create-website/), or a more complex framework which requires full-stack development. Research your choice adequately, for instance, certain web development platforms require payment for most of the web functionality you will need.
- The team (not a single member) must research multiple frameworks and select the team's framework, 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, 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		14
2	Project Management Plan (PMP) Version 1.1 Updates to the PMP (Section 1-6) as needed. Section 7-8	Canvas – team submission		14
3	Individual Reflection (optional) Use the Peer Assessment form in Appendix C to assess your team member's contribution. If you divide the money unequally, you need to reflect on the contribution by you and your team members (300 words approximately). Please note: **Staff can assess students individually based on their contribution to the team.** If the reflection flags non-contributing members, staff have the discretion to award a reduced mark (to the total of 30 marks for this assessment) to such members.	Canvas – individual submission as a single report		

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
- This is a professional document for a business audience and will be marked on content, structure and expression of your responses.

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 < Continually update this section. It is checked for both your first and second submission. Identify the **individual** team member and the specific PMP sections they created.>

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 In-scope Features (10 points)

   <Detail the scope of the project. A formal SDLC project requires a clear and complete scope using defined requirements and Use Cases. Agile requires a groomed

Product Backlog . Clearly state what your team is planning to deliver in the project.>

5.3 Out-of-scope Features (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.>

5.4 Delivery approach / SDLC - Formal or Agile (20 marks)

☐ Waterfall ☐ Incremental ☐ 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. A Hybrid approach is not acceptable.>*

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 any exist.>

6 Project Governance

6.1 Roles and Responsibilities (5 marks)

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

***If you are a team of 6, one of your team members will take on the role of User Experience professional.** This will require doing some research and providing a good description of what this individual will contribute to the project. (Please ignore this if you are a team of less than 6 members. Teams of 5 or less **should not** have a dedicated User Experience professional).*

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 (25 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	Description	Probability	Impact	Justification

	(Business/ Project/ Product)				<why chose this as a key risk?>

<Show the Risk Register for the first 5 risks identified, the specific risks that can be controlled by the team. This risk register is based on the Risk Impact Analysis 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 (20 marks)

< A formal SDLC project requires a Project Schedule 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.

An agile SDLC requires a Sprint Plan for the first sprint, with a Sprint Goal, a Sprint Backlog, an initial Sprint Swimlane board and an ideal Burndown Chart and Velocity. Choose appropriate feature-level User Stories from the Product Backlog for the Sprint Backlog and decompose them into low level Sprint User Stories. Sprint-level User Stories may have with tasks associated, and task may be estimated in hours.
Sprint Burn-down chart should have (business value) Story Points on the y-axis. >

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, earned value analysis, schedule value analysis; Images of Kanban boards, sprint planning meeting outcomes, sprint review inputs and outcomes, actual velocity, burndown charts, low level task decompositions, and any other process related artefacts that will demonstrate to your audience 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*

If you are a team of 6, please ensure that your process related artefacts that clearly reflect what the User Experience team member has contributed.

7.1.2 Product Related Artefacts (10 marks)

< Include all products related artefacts, 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).>

If you are a team of 6, please ensure that your product related artefacts reflect what the User Experience team member has contributed.

<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?*

With a focus on technical risks identified, explain how the risks identified in Section 6.3 were handled within your sprints if your chosen SDLC was Agile. If your chosen SDLC was a formal model, explain how did you minimize the impact of technical risks to your project and in which phases of the SDLC did your team account for this task?

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.>

8. After the project

8.1 Project Retrospective (10 marks)

<Report back to your manager on the project. Lessons learnt includes teamwork, technology choice, time/effort estimations, what worked well and what didn't work well (this is not an all inclusive list, there could be others.>

8.2 Teamwork reflection (10 marks)

<Analyse and discuss the team roles that the different group members played e.g. initiator, harmoniser. Refer to lecture 6. Please note, we do not want a generic response but rather a reflection on your team work experience. Think about how you all interacted to contribute and the influence that had on an unsuccessful or successful group project. >

Appendix B – Case Study[1]

Business Case Background:

MYD is a medium sized business (50 employees) in Melbourne. MYD is in a busy street of Melbourne Central Business District and is surrounded by several different business including Floro (a florist), Gifty (a business that specialises in gift hampers), Foody (a restaurant), Cafey (a coffee shop), Patisseriey (a bakery) and Hairdressery (a hairdresser). There is also a medical suite where there is a dietician, speech therapist and psychologist. Most of these businesses have been operational for more than 10 years and the owners have become quite friendly. For instance, the owner of Cafey is Luis and he employs a barista and a cook. The barista, Zhing knows all the employees at MYD (and the other businesses in the street) and knows what type of coffees are each one of their favourites.

Some small businesses have struggled recently. Fortunately, MYD has remained busy and has been very profitable. At the end of the financial year (June) MYD usually give the staff a bonus if the company has done well. Tianyi, the owner of MYD, has decided that this year in addition to a traditional bonus, she would like to give her employees a voucher that can be used at local small businesses and in this way support the local entrepreneurs. It is her way to thank her employees while also supporting local businesses. In the first instance, MYD decides to give all her employees a voucher of the same worth value (worth 100 points). The owner of MYD has negotiated with these businesses mentioned above, the value of the vouchers. This is what the businesses in the street have agreed to-

Floro will offer a floral arrangement in a glass vase with– *flowers.*

Gifty have a variety of hampers containing different selections of items and will offer 3 hamper choices - *cheeseplatter*, *chocolatebox* or *teaparty*.

Foody restaurant will offer a choice of 3 different lunch meals without drinks - *vegmeal*, *fishmeal* or *meatmeal*.

Cafey coffee shop serves breakfast and lunch, and will offer either breakfast or lunch including a coffee/tea/hot chocolate. In addition, there is one more another offer option - a card for 10 coffees only – *breakfast*, *lunch, or coffees10*

Patisseriey have a delicious selection of baked goods such as croissants, donuts, cinnamon buns and will offer a random selection of their goods– *bakerygoods;*

Hairdressery will offer a cut and blow-dry for females and males- *hairstyle;*

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

One of the employees at MYD, Josy, is a student in Business and IT at the University of Melbourne. Josy suggests that this could be a project for a student team and would be a good proof of concept. Tianyi agrees that this could be a good option. She has been thinking about the idea and believes it may be a viable business opportunity longer term. She thinks that she could convince many small businesses to join her new business venturethe site. As a part of this venture, Tianyi wants to develop a new web site, wherein she and she would plans to sell the a 'universal' gift vouchers, that can be pre-loaded with values ranging between 100 to 5000 points. These gift vouchers would be accepted at all the small businesses participating in her new venture. and wWhenever a voucher is redeemed at a location, she would receive an agreed amount as commission. Furthermore, the value of the vouchers would be different so cCustomers could buy different voucher amounts to gift to others, or use themselves on the website. For instance, the services described above are each worth 100 points., and cCustomer_1 could buy a voucher worth 500 points, and redeem 100 points could be redeemed separately at 5 different locations. Vendors could also offer more services for different amounts, for instance, *Foody* can offer a 3-course meal for 180 points; *Hairdressery* could accept different voucher amounts, for instance, a haircut and colour could be worth 200 points; a child's haircut could be 50 points.

Tianyi 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 SWEN90016 team to build a similar software solution. Tianyi is convinced that this is the best approach given the current circumstances and to determine the viability of the website. She will ask the SWEN90016 team to build the website and then give each of her employees a voucher for 100 points. Based on feedback from her employees and some market research she may then decide to develop the product further. Further development would include integration with PayPal and Visa/MasterCard to provide clients the capability to buy vouchers.

In the first instance, the web site is locally hosted at MYD, (not a public website), one voucher is pre-assigned to every MYD employee, every voucher is worth 100 points and every employee can register with the system to access and redeem their assigned voucher.

Your SWEN90016 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 system is identified as ***Voucher_Service***

2. The super admin user is hard coded to Tianyi. 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).

3. The ***Admin*** user can add new services to the system by providing the type of the service, referred to as ***Voucher_Service_Type***: Initially there are 12 options –
   flowers
   chocolatebox
   teaparty
   cheeseplatter
   coffees10
   breakfast
   lunch
   meatmeal
   fishmeal
   vegmeal
   bakerygoods
   hairstyle

4. ***Customer*** (initially only the employees of NYD) can register in the system by providing the following ***Personal_Information***:
   a. Name
   b. Contact phone number
   c. Email address
   d. Initial password

5. ***Customer*** can add separate ***Biller_Information*** at any time after registration:
   a. Name on invoice
   b. Biller email address

6. ***Customer*** can log into the system using their registered email address and password.

7. Logged in ***Customer*** can update their ***Personal_Information*** and ***Biller_Information***.

8. Logged in ***Customer*** can redeem their vouchers, by requesting a ***Voucher_Booking.*** When creating a ***Voucher_Booking***, ***Customer*** can:
    a. Select the ***Voucher_Service_Type*** from a list of available types
    b. Select (1) local delivery to the MYD offices OR (2) pick-up from the service (e.g the hairdresser voucher will be at the hairdresser shop not at MYD office, whereas the café can either deliver the lunch order or the person can have the lunch order at the café).
    c. Select a date and time for the ***Voucher_Booking*** service.
    d. Enter an optional message to be included.

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

10. When the ***Admin*** accepts the ***Voucher_Booking*** on behalf of the service provider, the system must send an email to the ***Customer*** with the following information regarding the booking:
    a. Name, phone number, email address of the ***Customer***
    b. Date, time, location of the ***Voucher_Booking***

11. Logged in ***Customer*** must be able to view or cancel their ***Voucher_Booking***. If a ***Customer*** cancels a booking, an email must be sent to the ***Admin*** with information in requirement (9)-(a) & (b) and a booking cancellation message.

12. ***Admin*** user must be able to view a list of all ***Voucher_Booking*** requests for all ***Voucher_Service_Types***.

13. ***Admin, Customer, Personal_Information, Biller_Information, Voucher_Service_Type*** and ***Voucher_Booking*** information must be persisted in the system (stored in a database).

Notes:

- In the future Tianyi may want to integrate this system with other systems to reduce manual intervention and improve efficiency:
    a. an invoicing system to generate an invoice for the customer when an appointment is completed
    b. a view of the service provider calendar where bookings are possible.

- 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 (compulsory).

Teamwork Reflection:
< Reflect on how well the group functioned, the quality of the teamwork and the communication principles and style.>