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

Assignment 1

**Due Date: Thursday, 2nd April 2020, 11:59 pm
Assignment Weight: 20%**

Overview:

This is an individual assignment. It deals with the topics of project management, software development lifecycles, process design and project plans. The main aim of this assignment is for you to develop a better understanding of various lifecycle models and their relationship to other aspects of the project, through analysing the YFootball case study, described in Appendix A.

Learning Outcomes:

Through analysing the project described in the case study the students will demonstrate the ability to:
- Identify the goals of the project
- Identify the key characteristics of the project
- Identify the risks in the project as identified at the start of the project
- Justify the choice of an appropriate software development lifecycle (SDLC) model for the project

Report:

Read and analyse the YFootball case study in Appendix A and answer the following questions related to the software product that is described in the case study.
Your answers must have the appropriate justifications and citations where appropriate; use IEEE citing and referencing (IEEE. Monash University Library Guide, 2018. https://guides.lib.monash.edu/citing-referencing/ieee).

Section 1: Short Research Questions

1. Identify a major goal for the *initial development* of the software product. (maximum 50 words - 1 mark)

2. Identify the value of the software product to an external stakeholder. (maximum 50 words – 1 mark)

Section 2: Extended Research Questions

3. Identify four high level features (functions the IT solution should provide) in the initial software product (<u>the initial development ONLY</u>) and categorize their priority as high (must have), medium (good to have) or low (can do without). Give a justification for the chosen priority of each requirement. (4 marks)

Requirement	Priority	Justification

4. Identify two challenging characteristics (characteristics that would make the project difficult) of this IT project (the initial development) and discuss why you consider them challenging. (maximum 200 words – 2 marks)

5. Identify and justify two things that can go wrong – *risks*, resulting in the project (the initial development) not achieving the intended goal/s (ensure that you identify risks that are unique to the characteristics of this case study, rather than generic risks that can occur in any project, these include project members leaving the project, running out of budget before completion or IT security risk, a good user interface- to name a few), and describe the impact each of these risks could have on the business, project and/or the software product. State possible proactive actions the team could take to avoid or reduce the possibility of these risks. (maximum 250 words - 4 marks)

<u>Section 3: Discussion</u>

6. Discuss two possible lifecycle models you would consider for the project SDLC model. This should include the pros and cons of each of your choices referring to specific project <u>characteristics and risks *you* have identified</u>. Use case study references to support your argument. Use at least 2 references to strengthen your argument. (maximum 800 words – 6)

7. From the 2 possible choices in Q6, choose the most suitable SDLC and justify your choice referring to specific project characteristics and risks you have identified. (maximum 200 words – 2 marks)

Quality and presentation: -2 marks

Submission:

Submit your work using the Turnitin link on the assignment tab on Canvas. Go to the SWEN90016 Canvas page, select Assignment 1 submission link from the menu, and then select View/Complete from the Assignment item and following the instructions, upload a PDF file containing your responses to questions.
The name of the file should be in the following format
SWEN90016_studentnumber_lastname_firstname

e.g.
SWEN90016_123456_Zalk_Marion

Your submission must include the following:

SWEN90016 Software Processes and Management — Assignment 1
Name:
Login:
Student ID:
Report Body

Late Submissions:

Late submissions without an approved extension will be subject to a <u>penalty of 1 mark per day</u> (including half days). Week- ends count as a single day. No assignment will be accepted more than one week late.

You will have to make reasoned choices. The real learning experience here is in developing the logic to justify a course of action or a set of choices.

Plagiarism:

The University plagiarism policy applies — see Canvas for a statement of the expectations.

Appendix A – YFootball

Simon and Jamie are a father and son pair who enjoy spending their free time watching and following football of various teams around the world. Football has grown to become one of the most popular team sports in the world. It generally involves two teams of eleven players each, facing off against each other. The sport requires kicking a ball with the aim of scoring a goal in the net at the opposing team's end of the field [1]. One day Jamie had an idea to develop a website- YFootball that will let them view and follow all football teams across the world on one platform. Simon and Jamie think that existing websites are quite slow to update information, not easy to use, and hence do not have the look and feel that appeals to football enthusiasts. Simon loves the idea and has decided to fund the project.

One of Jamie's friends, Helena, recommended that he should have the software built by a group of students enrolled in SWEN90016 at the University of Melbourne, rather than pay a professional software development company. Helena spoke about the good outcomes she had when she employed a SWEN90016 team to build a different software solution in the previous semester. Jamie is convinced that this is the best approach to take to reduce the financial burden on Simon. Both Jamie and Simon hope to have this project completed within the next 3 months as Jamie would like to complete the project before he begins working.

Following their vision for the website:

The YFootball website should be customisable and configurable.
A football league comprises of professional association football clubs from the given area. As an example, the EFL league comprises of clubs such as Manchester United, Arsenal football club and Chelsea football club to name a new.

Website Profile
The website should provide information on the following football leagues:
- EPL- English Premier league
- Bundesliga – German league
- LaLiga – Spanish league
- Serie A – Italian league
- MLS- American league
- Ligue 1- French league
- Hyundai A-League – Australia/New Zealand league
- Primeira League – Portugal league

The user should be able to log in securely and store the users personalized data settings. Initially these settings are the users' home location. The website will display all known information about the various football teams based on the time and date at the home location. For instance, if an EPL league game is being played at 6pm on a Tuesday in England, the time on the website should show 4am on Wednesday, if the home location entered is Melbourne, Australia.

Users should be able to select three favourite teams out of all the leagues followed. For example, a user could select Manchester United from EPL league, PSG from Ligue 1 league and Barcelona from Laliga league. All three teams selected as 'favourites' can be from one league or across different leagues.

Users should be able to get a notification of new information based on the favourite teams they selected. For instance, users should be notified of information such as below:
- Team news- when the list of players for a game has been released. This should be around an hour before the game
- Live update if there are any changes to game, such as:
  - The beginning and the end of the game
  - The scores
  - Substitutions of players
  - Any substantial event in the game such as a yellow card or red card

The website should display live data and information of all matches from major and trusted news sporting outlet such as:
- ESPN
- Optus Sport
- beIN Sports
- Google

The data should be retrieved automatically from these sites and the format should be displayed in a way to suit that of the YFootball website and in a user-friendly way. To retrieve the data whether machine learning, artificial intelligence or algorithms are required to do this, and they are hoping that the SWEN90016 team can help. From a legal perspective, they plan to consult a lawyer to ensure that they have the correct disclaimers on the website and are using data from other website as permitted by their policies.

The website should be able to show:
- Up-to-date information on each of the league's table
- Provide statistics of the favourite teams selected by the user

Access the location function on the device so that information can be tailored based on the user's locations. For example, the local time of the specific matches are changed to the time at the user's location. The website should also function on both small and large devices e.g. mobile phones, tablet, laptops etc.

There are certain key aspects that are therefore part of the initial development of the 'YFootball' website.

User Profile
Basic Signup information (mandatory)

- username,
- password,
- location, a postcode *only*, not a home address

The user can modify this data at any time.

<u>Future enhancements (not in initial development)</u>

There are many extensions that can be made after the initial website is released.

1. Users may want to provide their email addresses. Some football enthusiast may like to communicate with other users on the website to discuss all things football. This would be 'nice to have' when the website is developed to send personalised emails to other users who have the same favourite teams.

2. One key enhancement that both Simon and Jamie would like is the ability to watch live streams of the game and highlights of old games on the website. This area of the website should only be made available to users that have subscribed to the website. Subscription comes with payment of $20 (AUD) per month.
Users should be able to make payments for their subscription through the following methods:
   - Credit card,
   - BPay,
   - PayPal,
   - Debit card, and
   - Bank transfer

3. Discussion Forum- an area on the website which acts as a type of discussion forum, where users can discuss, post comments, pictures and videos. There should be an option for the most recent messages (with a max of 10 messages) to be displayed. No more than 10 messages should be stored by the website.

4. Users should be able to choose up to ten favourite teams to follow.

5. Use Artificial intelligence (AI) to help tailor news content to owner profile.

[1] Bale, J. (2002). *Sports Geography*. Taylor & Francis. p. 43. ISBN 978-0-419-25230-6.