COSC2625 Introduction to Information Technology: Assignment 3

Marks: 40%
Due Date: End of Week 12 (see Canvas)
Submission: This is a group submission. See Canvas for details of submission and the rubric.

Background

Having completed one project with your team (Assignment 2), it is now time to develop a plan for an IT project *of your own*, which will show an understanding of both your group's skill and talent, as well as an understanding of the IT industry and current IT trends. Your work in this project will develop a plan for your project, and as much of a prototype or other artefacts that you can produce in the time available to you.

Overview

- This assignment is worth 40% of your overall mark.
- This is a **group** assignment. Each person in the group will receive the same **initial** mark. That mark will then be moderated according to your submissions via Spark^{PLUS}.
- Your assignment will be in the form of a **non**-machine generated HTML+CSS report which is hosted on AWS.
- You are required to use Git in order to manage your group's documents and artefacts, including the assignment submission.
- You may seek feedback on your report from your tutor at any point during tutorials.
- You are required to work on this assignment *regularly* each week, so that you should be writing relevant parts of your report each week within your own files and *pushing* your changes to the groups Git repository every few days.
- You should record your group meetings using Microsoft Teams™.
- This assignment should be submitted via Canvas™ as an HTML page hosted under AWS™.
- Your plan is to be for a **14**-week project, being the 4 weeks you will have to work on this assignment, plus an additional 10 weeks of work.
- Commence work on this Assignment in Week 9, and submit at the end of Week 12. This means that **each person is expected to spend 4 x 6 = 24 hours** working on this assignment.

Requirements

Your HTML report should contain the following sections. Larger sections might have their own html page, as in. for example, “IndustryData.html” and be linked from the main report html page.

Team Profile

Tools

Project Description

Skills and Jobs

Feedback

Group Reflection

Team Profile

Each of you will have produced a personal profile for Assignment 2. Revise this information, if that’s relevant, reviewing it as you see fit ***given any feedback from Assignment 2***, to re-produce your team profile[1]. This should be organised into the following subsections.

Team Name

Ordinarily, this should be the same name as the one used for Assignment 2.

Personal Information

As in Assighnment 2, One paragraph per person, including name, a recent photo, student number, background, hobbies, IT interest and IT experience.

Group Processes

How well did your group work together in Assignment 2? Will you be introducing any changes in process for Assignment 3? If this is the case, describe the changes. This is new section for this assignment.

Career Plans

If there are any modifications to Career plans based on feedback from Assignment 2, please make these here. Otherwise, just include this section as per Assignment 2.

Tools

As in Assignment 2, You should use your Canvas Group Page to hold any and all non-scheduled text messaging. Use AWS to host your Assignment submission. Include hyperlinks to any individual AWS or other websites.

1 Note any change to your group membership if appropriate

Set up a Git repository for your group. You may wish to use Github or Gitkracken for this purpose. This is to facilitate the storage and maintenance of group artefacts, including: the assignment submission (HTML and CSS pages); other reports or information; code; examples; formatted data; images and videos; hyperlinks, and related information. In using Git, we expect that each of you will be working on individual files hosted on your own computer and that you will be pushing and pulling the files that you work on through your central group repository. Marks will be allocated on your Git usage as per your logs. Your logs should be presented in your submission through a hyperlink[2].

You will also need to recheck that your group is set up properly on Canvas.

In your HTML-based report which is on AWS, you should include a brief description of what you have done, and include the following:

- The link to your group's Git repository including a separate link to the log.
- **Please note**: you should consider a new/fresh git repository for assignment 3, specifically, unless you can continue working with your version for assignment 2.
- Comments on how well the audit trail on the Git repository reflects your group's work. You will presumably only be able to do this close to the time of submission.
- A bullet pointed list of web resources that you used to compile your report.

Project Description

Include your description for Assignment 2 over here, *making any changes that you have considered*, based on feedback. From Assignment 2:

What does it do? (600 words) What is the state of the art of this new technology? What can be done now? What is likely to be able to do be done soon (say in the next 3 years)? What technological or other developments make this possible? [Be careful to a) not copy b) show that you understand the words that you write

What is the likely impact? (300 words) What is the potential impact of this development? What is likely to change? Which people will be most affected and how? Will this create, replace or make redundant any current jobs or technologies?

How will this affect you? (300 words) In your daily life, how will this affect you? What will be different for you? How might this affect members of your family or your friends?

Project ideas

Having completed Assignments 1 and 2, you have thought about a personal project as well as one with your group. In *this* Assignment you are to devise a plan for a *group* project, and to develop this plan as much as possible, in the time available. Naturally, you will be unlikely to "complete" your project. In fact, most worthwhile projects are "endless," in that there is always more that can be done, more features to be added, more levels to be designed, or new devices that could be used.

For some groups, this will involve fleshing out and further developing what you may have commenced in Assignment 2.

Naturally, the choice of what to do is up to the group, but you *must* take the following into account when making your decision.

[2] The logs do not require special formatting. They should be authentic Git log files.

- The passions, interests and skills of your group
- IT industry trends
- What would assist you in your career plan
- Feedback from Assignments 1 and 2

Your group will have developed some ideas in Assignment 2. You may choose to build on and refine these ideas for this assignment, or you may choose to develop a new project, based on feedback and/or anything you have learned since.

Overview

- **Topic** An overview of what you propose to do in your project. Concentrate on the big picture and outcomes, rather than intricate details. At least two paragraphs are expected.
- **Motivation** What are your motivations for your project. Why is this project important or interesting? How does it fit in with current IT trends? What would it show to a future employer if you were able to work on this project? At least one paragraph is expected.
- **Landscape** What similar systems or products are available? What are the competitors? What points of difference are there between your project and what is presently available? At least one paragraph is expected.

Detailed Description

Aims

The topic description is a general overview. Include a specific single aim for your project, as well as some smaller goals which will be helpful in achieving your aim. Describe these as best you can. Each project should have a single aim (e.g. “Re-establish the King under the Mountain", “Construct an artefact in Minecraft", “Produce a movie about green flowers", “Explore the use of Raspberry Pis for cooking"), but may have several goals which will need to be achieved in order to fulfil your aim (e.g. defeat Smaug, annoy Bard, befriend Beorn, kill as many giant spiders as necessary, fight Azog if he shows up ...).

If things don't go as expected, this is the part of the plan that you would fall back on to answer questions such as “What are the most important parts of the project? Which parts should have priority over the others? If we have only enough time or resources for one of our goals, which one should it be?". One paragraph for the aim and one for each goal is expected. Each paragraph should include a description of the aim or goal, and a justification for its inclusion.

Be reasonable: do not come up with an inappropriate project to supplant something that has been developed by one of the IT leaders[3]. You aren’t aiming for an earth shattering discovery. You are first years and though this is limiting, it should not limit your thoughts and plans, as long as they are *reasonable*[4].

[3] For example: Apple, Google or Microsoft.

[4] If in doubt, discuss with your tutor.

Plans and Progress

Some of you have already made a start on this, but all should provide as much detail as you can about *what* your project will do, and *how* you will do it. In other words, detail the steps you take and *will* take; you can start on this before you complete your timeframe plan. This should include your progress with developing any features or outcomes of your project. Tell us about the “story" of your project—how it began, how it progressed, and what stage of the plan you reached. Include dead-ends you may have followed, decisions made, and changes that have been made to the project plan. This is important. Imagine that another group takes up your project and decides on following one of these dead-ends. If you document the dead-end or undesirable approach, they may well decide *not* to proceed down that avenue. You are expected to include a significant level of detail, so that it is precisely and easily seen what you have done, why, and what you are planning to do and not to do. Ask yourselves: what would you need to know, if you were a group who tool this project on after you had handed it in?

There is no set length for this section. However, 2000 words is a ball park figure.

Roles

It is sometimes useful to define roles for particular participants, such as Lead Developer, or Technical Designer, or User Interface Designer. It is also possible and indeed sometimes desirable that some roles are changed from week to week. Have you defined any specific roles for your project? If so, describe and justify these. If not, describe your process and justify why there are no specific roles. It is important to bear in mind that roles are not simply comfort zones. If you are a natural leader and one of your group members wishes to develop that area, then it's important they are given this opportunity. If two people have good skills in a given area: for example, they may be strong in HTML+CSS, then consider pairing one person who is strong with another person who isn’t very strong but wishes to develop that area. Projects are about learning. Keep this in mind.

> *“If I am I because you are you, and you are you because I am I, then I am not I and you are not you. But if I am I because I am I, and you are you because you are you, then I am I and you are you.”*
>
> *—Rabbi Menachem Mendel of Kotzk*

Scope and Limits

> “*A designer knows he has achieved perfection not when there is nothing left to add, but when there is nothing left to take away.*”
>
> *—Antoine de Saint-Exupery*

One of the more difficult parts of project planning and execution is to define the scope of the project. As mentioned above, you never really *complete* a project like this; do your best in the time available. Part of that involves *setting priorities* and accepting that there will be features that may take too long to develop. Scope your project, as a means of ensuring that you make the most of the time available. For example, if you are developing a game, you might consider only producing one level and two or three characters, in order to show a proof-of-concept, rather than develop three levels and ten characters.

Scope is likely the most crucial part of your plan, and also the most difficult to define. One way to define the scope is to think of the *deliverables* for your project: that is, what outcomes would you demonstrate to someone who asks to see the result of your work. This should include several statements describing what will not be part of the project deliverables. For example, if you are using Open Street Maps to show the location of your favourite shops, the deliverables would include the updated map, but not the Open Street Maps *technology* itself. It would also not include other features of Open Street Maps, or other interesting locations—just those which show your favourite shops.

Be aware of the phenomenon of `scope creep,' which is the tendency for projects to incorporate more and more features. It is desirable to be ambitious, but factor in the available time. At least one paragraph is expected.

Tools and Technologies

What software or other tools are required by the project? Are there any software licenses needed? Is there any hardware needed (beyond a standard laptop or something similar)? This needs to be precise (e.g., Windows Movie Maker Version 45.3) but needn't be long. You should also include a brief description of any prior experience any group members have had with the tools and technologies you list. There is no minimum length for this. It is important to be precise, however, a description of the tools is not generally needed[5].

Testing

What test**s** will you develop for your project? How will your test your project? How will you know when you have succeeded? Testing is not something that you should leave until the very end; often it is far more useful to have a quick and dirty “mock up" of a project and then do some (limited) testing, to find out whether you are building the right product. If your project involves user testing, your plan should describe how you will find the test users, approximately the number of people you will need, and what background (if any) is required. At least one paragraph is expected here.

Timeframe

Another difficult aspect of project planning is knowing how much time to allow. You have approximately twenty-four hours per group member for this assignment. In order to develop a plan for further work beyond the end of this course, assume that you have a further ten hours per-week per-person for ten weeks, in addition to this time in order to develop your project.

In other words, you have four weeks (Weeks 9 to 12) of the semester to work on your assignment, with a further ten weeks after that. Your plan will total fourteen weeks, with the first four comprising of this assignment.

In actuality, you do not have the extra ten weeks to work on the project; this is intended to give you a feeling for how much you would be able to achieve in that time. This means that the first four weeks of your timeline will end up being your actual progress on this project, with the remaining ten weeks being your plan for the next stages.

This should be presented in the form of a table, with one row for each week, specifying as best you can the work for each person for each week. This means that the first four rows of the table will describe your progress so far, and the remaining ten rows will be the plan for how the remaining time would ensue.

This will no doubt change as you work on your assignment, as it will give you a more precise idea about how long it will take to get things done. This is not an unchangeable contract for exactly how things will work; that is unrealistic for just about any project. The idea is to get you thinking about how exactly your time should be allocated to the various tasks involved. It is a good idea to have a milestone (i.e., a specific outcome) for each week of the project. This may include getting familiar with tools, or reading up on a particular technique or technology. You should also include time for writing up the final report and any other documentation.

Writing reports always takes longer than you think, especially as you should expect to re-write any piece of writing that you do at least three or four times.

---

[5] An exception could be a tool that is not well known or novel.

Risks

What risks can you identify for your project? There will always be some *generic* risks (such as computers breaking down the night before a deadline, health and family issues, and institutional changes). Do not include generic risks, though all of you should have backup of your files via Git. Relate the risks *specifically* to your project. For example, if your topic is to develop a game, there may be a risk that the software you choose to work with proves to be more difficult to learn, poorly documented, or not facilitate the features that it claims. These properties are often only discovered once you have commenced working with the software, and unless you have experience with a particular tool, there is *always* a risk that it may not work as well as you hoped, no matter how much prior research you undertook. Similar comments apply to hardware.

Group processes and communications

Communication between group members is arguably the most important aspect of your project. Past experience has shown that communication breakdowns between group members is the most common cause of project failures, so it is vital that you specify at the outset the contract for communication between group members. How will you capture communication that isn't recorded formally? How often and when will meetings take place? What will you do if a group member does not respond to communications? Expect contact between group members at least twice a week outside class times (excluding lectures and tutorials). You can always make contact more often if you wish, but you do need to know what minimum frequency is expected from all members of your group.

At least one paragraph is expected here.

Skills and Jobs

Let us suppose that a group of venture capitalists hears about your project, and is so impressed that they wish to fund six months of further development. You will be the manager of a team of four to six people to deliver the project outcomes. What position descriptions would now be appropriate? Write position descriptions for the people you would employ to take your project to the next phase. You need to consider appropriate skills. This may include specific technical expertise, team work experience, leadership and management skills, and innovative thinking.

Submission Style

The web hierarchy that you present should be your own HTML and CSS. Do not use an HTML or CSS generator. Your HTML and CSS should be standards compliant, and you should endeavour to check and validate your HTML[6] and CSS[7]. Your HTML pages should have a fixed header and footer. **You should use the <object>** tag to include other html documents into your master HTML document. In particular, you should include a header which might include your group logo, title, and other appropriate information. You should also use a fixed footer which includes relevant navigation links. The text should scroll cleanly between the header and footer. **You should include a portfolio page**[8], which contains embeds or links to any assets, diagrams, art work. These should be grouped by week or by feature, whatever you think is most suitable to enhance your presentation. Judicious, clever and *tasteful* use of HTML+CSS is a component of this assignment, for which marks are awarded based on the rubric on Canvas. It is okay to be inspired by the approach used on other web pages, however, *do not* blithely copy another web page. If you are inspired by some pages, then **do** make note and reference these in the comments in your HTML and CSS (assuming they aren't restricted). Please mention this in the body of your report. If you do not attribute your sources of inspiration, then **marks will be deducted for plagiarism**. The same applies to any text itself. **Do not copy. Do not plagiarise.** If you are unsure, discuss this with your tutor.

Feedback and Group Reflection

By the time you reach the end of the semester, you should have been working as a group for nearly ten weeks, and hence have some experience of how well the group is working. A key feature of industry teams is the ability to give and receive feedback, particular to members of a team in which you are working.

Unlike Assignment 2, in this assignment we will use Spark^{PLUS} as a tool where you give feedback to each other, such that the feedback will affect your individual marks. **You should no longer provide feedback *about each other* inside the body of Assignment 3**. A link to Spark^{PLUS} will be on the assignment submission page. Your group mark will be moderated by Spark^{PLUS} so that those who contribute more will be rewarded and those who are found to have not contributed well enough, will be penalised.

What happens if one of the group members either does not use Spark^{PLUS} or if a group is less than honest about each others contributions? Spark^{PLUS} is sophisticated enough to detect these instances. Indeed, this may result in one or more people getting a very poor mark when compared to others in the group. The bottom line is this: when you answer the Spark^{PLUS} questions, do so **honestly** and to the best of your ability, **without** fear or favour. If you do this, then Spark^{PLUS} will be "your friend" and is fair to everyone.

Towards the end of the assignment period, you should reflect *as a group* on how well you think you have performed in this assignment. You should include whatever evidence you may have about the group's processes (such as commit trails from GitHub, project meeting minutes[9]). Each member of the group should contribute up to 200 words about their own perception of the *group*, and the group as a whole should contribute around 400 words.

---

[6] eg. https://validator.w3.org

[7] eg. https://jigsaw.w3.org/css-validator/validator.html.en

[8] This is like a quasi summary page which gathers important links to existing information spread throughout your master report.

[9] Since all meetings will take place remotely, using MS Teams, you **must** include link to the recorded Video of your meetings in your HTML report.

This should include the following attributes.

- What went well
- What could be improved
- At least one thing that was surprising
- At least one thing that you have learned about groups
- Remember to include in your section on Tools how well you think your Git log of activity reflects your group's work on this assignment.

Group Dynamics

The following should be followed:

1. You should have a formal group on **Canvas**.
2. Each group should meet via **video conference**[10] twice per week and should do so using **Microsoft Teams** which you can download for free. You should schedule your meetings and **record** the meetings. Each member should have their video turned on[11].
3. Log into Teams using your RMIT login id and your normal RMIT password
4. All messaging between team members should use the Canvas Discussion forum . Don't use sms, WhatsApp, facebook, slack, discord etc Use Teams to centralise all your meeting communications.
5. You should create your own meetings within **Microsoft Teams** and the canvas group members should be identical to the Teams members.
6. The primary purpose of using Microsoft Teams is to **record** your meetings. You need to record your meetings as evidence of your group meeting.
7. Each member of the group should have both Audio **and Video** for the meeting.
8. One person (can be rotated) should chair the group
9. Use Audio (rather than the text chat within Teams) to communicate during your meetings. Only the person speaking should unmute their microphone.
10. Students who do not have a working webcam, should use their phones for this purpose.
    10.1. Any student who has a problem with an audio/**video** meeting should discuss this with their tutor as soon as possible.
    10.2. It will be assumed that if a team member is not visible (video via their webcam) at a meeting, then they will be deemed to have not attended the meeting.
11. It is **very important** the chair of your meeting, who arranges and invites members of the team to the meeting **presses record** when the meeting starts, and presses stop recording when the meeting ends.

---

[10] Due to the global pandemic, we need to simulate a real face to face meeting in this way.

[11] If you do not have a webcam, you should be able to use your phone for this purpose.

11.1. If you do not press record, you will have no record of your meeting. (I suggest a practice run of a 2 minute meeting)

12. A link to each video of your meetings will be provided by Microsoft Teams and published in Microsoft Streams. You all have access to this either through your RMIT Web Outlook Account, or via the Teams application, which you may download for free.

    12.1. The links to these meetings shall be included in your HTML Report

13. You should have an **agenda** for each meeting. The agenda should precede the link the video of your meeting.

14. Meetings should be between 25 and 40 minutes, *at most*.

15. The format for presenting your meetings in the report should follow this template. Use an HTML Table, styled with some CSS.

Meetings

dd/mm/yy Agenda Recording Actions

dd/mm/yy Agenda Recording Actions

dd/mm/yy Agenda Recording Actions

dd/mm/yy Agenda Recording Actions

…

In the above, each of the underlined words, is a **hyperlink.**

Agenda should hyperlink to a short document which is the agenda for the meeting held on dd/mm/yy

Recording should hyperlink to the Microsoft Streams a/v recording of the meeting (which you can download and then upload to AWS)

Actions should hyperlink to a short document which describes the actions arising from the meeting, specifically for each member of the group. (these actions arising should then form as input to the next Agenda meeting)

Marks and Rubric

This assignment contributes 40% towards the total mark for this course and the rubric used is displayed on Canvas. Recall that the individual mark is then moderated using Spark[PLUS].

That's not all

Please note that there is **also** a separate presentation that is required which attracts its own marks and is due at the end of week 13. The details of this can be found on Canvas, over here under Assignments.