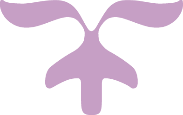
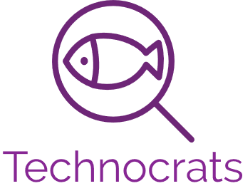


IIT ASSESSMENT 3

Group 5 – The Technocrats



AUGUST 23, 2020



# Contents

[Contents 1](#_gjdgxs)

[Division of labour 2](#_30j0zll)

[Team Profile (5%) 3](#_1fob9te)

[Personal Information 3](#_3znysh7)

[Group Processes 3](#_2et92p0)

[Career Plans 3](#_tyjcwt)

[Tools (5%) 4](#_3dy6vkm)

[Project Plan/Description (50% (20% of entire course!!)) 5](#_1t3h5sf)

[Overview 5](#_4d34og8)

[Detailed Description 5](#_2s8eyo1)

[Project Artefacts 5](#_17dp8vu)

[Skills and Jobs (10%) 6](#_3rdcrjn)

[Group Reflection (10%) 7](#_26in1rg)

[References 8](#_lnxbz9)

# Division of labour – this page to be removed before submission

|  |
| --- |
| Joe |
| Marcus |
| Murray |
| Ossama |
| Torin |
| Tyson |

# If you see your colour, there is something you need to do.

# Remove the highlighting from each section once completed.

# Technocrats Team Profile

## Personal Information**–these have all just been copied directly from A2, make your changes if/as necessary. Remove highlighting once satisfied.**

### Joe

#### student ID: S3862471

I first became interested in programming when I had to do an assignment on BASIC in year 9 in high school, which led to my talking my parents into buying me a Dick Smith System 80 with 16kB RAM and an audio tape drive. I started programming in BASIC on it, writing various games and working on one in particular that helped me learn about subroutines.

In 1982 I finished a year student exchange program in the USA where I studied BASIC and got 100%. I did a course in Pascal in 1983 and started a degree in Mechanical Engineering at the University of Technology, Sydney (UTS, then the NSW Institute of Technology) in 1984 where I learned Fortran and dabbled in some other programming languages (Ratfor, Z80 Assembly code, Forth). I had to withdraw from the course before I finished. In 2010 I had another go at Mechanical Engineering, at Sydney University this time. In first semester I did Engineering Computing which covered Matlab. September last year I had to withdraw from the course having completed 89% of it. I have some experience in HTML and had a web site which made use of HTML and CSS but that is gone now. I also started a course on Udemy in writing applications for iOS, but I didn't complete it as I prioritised my university studies.

### Marcus

#### student ID: S3735636

I am a 22-year-old who has an interest in IT that is only on the surface of what technology can really do. I love video games; I recently built my own gaming PC and I like to work out how things fit together. However, that is as far as my knowledge goes. I have little experience in the technology field with computing and coding and have little use for it in the career I am pursuing. My main hobbies include sports such as basketball, footy and video games.

### Murray

#### student ID: S3862651

My IT experience prior to this course has been mostly from simply playing around with my own computers and gadgets and doing some free online programming courses. When it comes to the technology I use, I like to explore and test everything I can, whether it be learning new programs or trying new ways to use gadgets. For instance, streaming my computer to the living room then using a Bluetooth PS4 controller with 3rd party software to watch Netflix, or myriad other token exercises. For me, half the fun is seeing if I can do it.

### Ossama

#### student ID: S3868543

I have always been interested in computing technology for as long as I can remember. Growing up we always had a computer in the house, and I found myself being the go-to person for technology related issues. As time went on and I developed an interest in gaming my competence within computing also expanded as a result. I am nowhere near adept in the area, but my interest and desired career naturally line up as a result.

### Torin

#### student ID: S3863563

My interest in IT goes back to some of my earliest memories at home. I remember our old dial-up connection beeping away, taking so long to produce even an image. Limewire and Torrents came next, accidentally downloading viruses onto the family computer, while only trying to get a few songs on my 512mb mp3 player. At the local Trash & Treasure I would often find old computers to take apart and check out their insides. Removing the fans to connect to 9v batteries was always exciting. Later in life I found an interest in graphic design, sound engineering and a small amount of coding through internet courses. The graphic design was a creative outlet for me, as my pen to paper art skills are sub-par at best. My interest in live sound led me to connect two of my passions, technology, and music. Most recently, I have begun to delve into the world of coding, which brought me to this course.

Tyson

#### student ID: S3756051

It is clear to me that I am not a traditional learner, I can be very creative but also doing standard book learning exercises is not my ideal method. I work well in teams and can be very inclusive and attentive to others needs.

I really can work with most groups and can be a good leader or follower, I am good communicator and can bring people along the journey.

A group should form with different personalities and mixing the workload to fit each person. Being inclusive and understanding of skills and preferred tasks will be critical to success.

### Summary

Tyson a bit of the odd one out in terms of IT experience, the rest of us having some IT experience in software and/or hardware

## Group Processes

Assignment 2 group coordination and organisation measures

* Used canvas for initial discussion before moving to MS Teams
* Files generally uploaded directly to MS Teams for a single member to upload to GitHub and incorporate into report
* Unstructured irregular meetings
* Members often difficult to reach
* Mostly independent work - generally needing a high degree of editing/formatting to unify sections into ultimate report

New measures for Assignment 3/5

* Using MS Teams voice chat
  + Individual input more recognisable
  + Easier clarification and contextualisation of ideas
  + Improve group relations
* Each member using GitHub app to update repository independently
* Created report template at very beginning - colour coordinated sections for member contributions/requirements
  + Easily identify what needs to be done, by whom and in what timeframe
  + Improve coordination for member collaboration
* Regularly scheduled meetings twice per week
* Established group accord to regularly check MS Teams for updates/member questions
* Report guidelines laid out early on to streamline member formatting etc.
* Points for group discussion highlighted as such within report for review in group meetings

## Career Plans**- to be updated from assignment 2**

### Joe

In Assignment 2 I said I was hoping to work as a software developer for a company that has products to help people with disabilities, and this hasn’t changed. I would also be interested in working for a non-profit organisation such as a church or a para-church organisation, something helping with the environment or a social justice non-profit or something similar, although with the economy being the way it is I way just have to take anything I can get, although being on the disability pension I can be more choosy than many people doing this course. I don’t **have** **to** work.

### Marcus

Update from A2

### Murray

In previous assignments I stated that I am interested in programming and cybersecurity as potential careers. Time spent in the ‘Introduction to Programming’ course has reinforced this opinion as I find myself very much enjoying the creative problem-solving skills it utilises. The main attribute that I am looking for in a career is at least some degree of creative freedom, which I believe would be attainable as a software engineer, though cybersecurity may offer more in the way of day to day variety.

### Ossama

Update from A2

### Torin

Update from A2

### Tyson

Update from A2

### Summary

Summary text here

# Tools

### GitHub Member Commit Audit

GitHub audit trail commentary – retrospective, to be done closer to submission date

### Repository

<https://github.com/MurrayLowisRMIT/IITAssignment03-05-TheTechnocrats>

### Website

<https://murraylowisrmit.github.io/IITAssignment03-05-TheTechnocrats/>

# Project Plan/Description**(50% (20% of entire course!!))**

## Overview

### Topic

Text here

### Motivation

Text here

### Landscape

Text here

## Detailed Description

### Aims**(under construction – a bit weird trying to differentiate between what goes here vs the ‘Scope’ section)**

The ultimate objective of this project will be to develop a partially autonomous, modular climate control system for household aquariums. The key features are a central control hub computer with a user interface and a set list of basic instruments that will be developed as a package for a single specific use case.

Mandatory goal 1

Mandatory goal 2

Mandatory goal 3

While certain deliverables are compulsory for this project to function at all, due to the modular design there are many secondary features which can be set aside if their development interferes with delivery of the compulsory features.

Optional goal 1

Optional goal 2

Optional goal 3

### Plans and Progress

To be filled out closer to the submission date as this section requires a retrospective review. ‘Plans’ component will just be a lead in to the below sections.

### Roles

Head Ops Manager - Murray

As the head of operations, Murray manages the overall goal of the project. The role requires him to manage and define roles related to labour, productivity, quality control, and safety measures. Along with analysing team operations, he is required to prepare and evaluate annual budgets, initiating corrective actions where necessary. While overseeing the overall vision of the project, the Ops manager must also have a deep understanding of the technical aspects and be able to communicate with the Development team on this level. Every project requires a leader to define and keep the team focussed, this encapsulates the Head Ops Manager position.

Ops Assistant Manager - Ossama

As the Ops Assistant, Ossama works directly with the Head Ops manager. The main responsibilities of the Ops assistant are to aid the Ops Manager with daily tasks, recommend improvements to the project, liaise with different departments, and monitor cash flow and budgets. As a general manager of the project, excellent communication is expected in every facet of his job.

Dev Ops Manager - Tyson

As the Dev Ops Manager, Tyson oversees Software Development within the project. This crucial position requires Tyson to communicate with the development team, defining specific roles, and monitoring productivity. As a manager, Tyson will work closely with the Head Ops Manager to examine and adjust operational logistics where necessary.

Technology and Hardware Research Analyst - Torin

As a Research Analyst, Torin is required to explore technology and hardware options and consider which elements will be most useful for the project. He is expected to research, analyse, interpret, and present findings to the Ops manager. It is imperative for the research analyst to communicate relevant information to the Dev Ops manager, coordinating software and hardware requirements of the project.

Market and Technical Researcher - Marcus

As a Research Assistant, Marcus works closely with Torin to explore technological routes for which the project will take. His position will aid the team in acquiring knowledge of relevant technology and competitors within the scope of the project. Marcus will be required to prepare and present research reports to the Dev Ops manager and Ops Manager.

Compliance Testing and Risk Analyst - Joe

The Compliance Analyst will be required to evaluate risks with the products developed from the project through thorough and controlled testing. Joe will be required to develop and coordinate testing parameters, interpret data, and present the findings to the Ops Manager. Joe is expected to make suggestions based on risk analysis and test data.

### Scope and Limits**(Currently I’ve just bullet pointed this for everyone’s reference. I’ll convert into structured paragraphs over the coming days)**

Key deliverables:

* Functioning hub computer
  + Construction of the physical hub (including expansion ports for instruments)
  + Software for user interface
  + Ability to control instruments
* Starter instruments to suit a basic tropical fish tank of a single predefined size
  + Thermometer/heater
  + Basic filter/aerator set up
  + Lights/timers
  + Auto-feeders/timers

Optional deliverables:

* Different sizes/types of the above mandatory instruments to suit other sizes/types of aquarium – includes 3rd party instrument support
* Non-universal/secondary instruments
  + Water level sensors/autofill instruments
  + Water chemistry sensors/adjustment instruments
    - pH
    - General hardness
    - Carbonate hardness
    - Ammonia/nitrite/nitrate
  + Aerators (independent)
  + Aerators (cooperative with filter)
  + Light intensity sensors/adjustable lighting
* Hub computer interactive encyclopaedic software
  + Species individual requirements
  + Species compatibility
  + Aquarium establishment methodologies
  + Information and advice about potential issues
    - Diseases
    - Pest outbreak (snails, duckweed etc.)
* Supporting app for smartphone/pc etc.
  + Essentially a clone of the hub software ported to other devices
  + Bluetooth/wifi etc. connectivity to hub for remote control

### Tools and Technologies

Text here

### Testing

Sensors: Temperature; Lights; Ph  
Testing for electrical leaks in the tank  
Test using no fish first, then ‘expendable’ fish

### Timeframe

Text here

### Risks

Killing fish as a result of errors in sensors, programming or controls  
Short circuit making the tank ‘live’ – all electrical components in the tank should be stepped down from 240V & waterproof

### Group Processes and Communications Problems in communication early on Problems in overwriting other people’s work Problems in missing aspects of the criteria in Assignment 2

## Project Artefacts

Some manner of demonstrating starter artefacts we’ve made here

# Skills and Jobs

Essay about theoretical project implementation etc.

Manager’s title/role

4x position descriptions

# Group Reflection

### Joe Worked well together on the whole, Murray did a lot

### Marcus

Reflection text here

### Murray**(ctrl+v from A2, will edit later)**

Having worked together over three weeks to complete Assignment 2, I think we as The Technocrats performed relatively well as a team and made effective use of our broad collective skillset. While a bit slow to coordinate initially, once we managed to allocate roles and break down tasks, we had few issues in the way of member contribution with each completing their own workload and coordinating well for the collaborative sections.

I am ultimately happy with my own performance in building the website and developing the project idea with feedback from the group. I believe these were strong submissions and the project idea should give us a solid foundation for assignment 3.

I would say the greatest problem we faced as a group was the often-slow response times in discussing some of the collaborative work. This made it difficult to create a uniformly structured report as we often had to revise sections as parts came in at different times and in different styles. This could perhaps be improved with more regular check ins or by using MS Teams’ notification feature etc.

As for things I found surprising about the team:

Joe’s pre-existing knowledge of IT is significantly higher than I would expect from someone only just now starting an introductory course.

I think Marcus’ attitude generally matches the result of his Myers-Briggs test in that he is quite practically orientated. I found it unusual for someone so pragmatic to have an interest in a subject as fanciful as IT.

Ossama’s interest in IT seems to be more in the way of social engagement/client support which would have to be an uncommon perspective in an industry generally populated by more reclusive personalities.

Torin - I would have written something interesting about Torin but it looks like we’re not submitting this so......

Tyson’s time management and ability to coordinate with the group was quite impressive given that he lives in a time zone 8 hours the rest of us behind and regularly had to check in with the group during his daytime working hours.

### Ossama

Reflection text here

### Torin

Reflection text here

### Tyson

Reflection text here

### Summary

Summary text here

# References

### [] xxx

xxx