

Assignment 2 The IT World - Team 37

COSC1078 – Introduction to Information Technology

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| s3718266 – Amy Thompson s3718706 – Esther Hoang s3661949 – Jonathan Keusgen s3724958 – James Robertson |  |  |  |  |

Table of Contents

1. [Team 37 2](#_Toc512785765)
2. [Tools 5](#_Toc512785766)
3. [Industry Data 6](#_Toc512785767)
4. [IT Work 8](#_Toc512785768)
5. [IT Technologies 9](#_Toc512785769)
6. [Project Ideas 14](#_Toc512785770)
7. [Group Reflection 16](#_Toc512785771)

# Team 37

## Personal Information

**Amy - s3718266**   
I am Australian but love to travel and one of my favourite things to do is to go snowboarding. Since a young age I've wanted to study in the STEM fields. Throughout my secondary education, my passion for science and the prospect of learning the foundations of the future have inspired me to take my education further. During year 12 I studied computing: informatics. I would also say I have a keen interest in design and creating: applications, websites and artworks. In the future I would like to work with both the skills of logic and creativity. I do not have any previous IT job experience.

**Esther - s3718706**  
I was born in Australia to Vietnamese immigrant parents. My hobbies include making watercolour art and watching YouTube videos of derpy animals. I studied Computing Informatics for VCE. I'm interested in the UI/UX design and research industry. I have no IT related job experiences.

**Jonathan - s3661949**  
I'm Australian, but my dad was born in Germany and my mum in New Zealand. I play basketball, video games and read. I'm interested in System Administration, Data Analytics and Software Development. I worked in the IT department at McKinnon Secondary College as an Intern in 2017. I also studied some IT subjects at secondary school.

**James - s3724958**   
I'm Australian, my mother is Filipino, and my father is English. My hobbies are health, fitness and drinking wine. I'm interested in cryptocurrency, data analysis & mining, cloud computing and app / web design. I've had exposure to multiple fields of IT through previous studies and freelance work, ranging from programming, databases, web development and web design.

## Team Profile

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Myer-Briggs Test** | Amy | Esther | Jonathan | James |
| **Result:** | ENTJ  “Commander” | INFP  “Mediator” | INTJ  “Architect” | ESTJ  “Executive” |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Learning Styles Test** | Amy | Esther | Jonathan | James |
| **Result:** | Auditory | Visual | Visual | Visual |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Third Test** | Amy  (Coping & Stress) | Esther  (Big 5 Personality) | Jonathan  (IQ) | James  (Creativity Score) |
| **Result:** | 86% Problem Focused  Vs  14% Emotion Focused | Open Mindedness = 64%  Conscientiousness = 21%  Extraversion = 14%  Agreeable = 73%  Negative Emotion = 61% | >125 | 66.43% |

**Reflection**

As a group we understand that all this information is valuable insight into how we should work together as a team. Expanding on communicating with each other it helps us understand our individual personalities and how we learn best. We have also used this information to divide roles to the individuals in the group and discussed the best ways for us to collaborate to complete this assignment.

## Ideal Jobs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Career Aspect | Amy Scrum Master / Agile Project Manager | Esther UX Researcher | Jonathan DevOps Engineer | James Cloud Consultant |
| Location | South East Suburbs | CBD / South East | Melbourne CBD | Sydney CBD |
| Flexibility | Flexible 4-day work week | 5-day work week | 5-day weekends off | 5-day work week |
| Work Variety | Management in all areas | All types of research and analysis | All stages of development and deployment of an application | Different clientele, multiple solutions possible |
| Creativity | High | Medium – High | Medium - High | Medium - High |
| Travel Prospects | Agreeable | Not preferred | Would like to travel for work | Domestic and International travel, working with multiple clients abroad and inside the office |

**Reflection**

Amy’s ideal job as a SCRUM master is centered around dynamic group management. Jonathans ideal job of DevOps Engineer includes working with systems administration and software development. Esther’s ideal job as a user experience researcher requires researching user attitudes and behaviors on products and systems. And finally, James’s ideal job as a cloud consultant involves working in different parts of the IT Industry ranging from cloud solutions, big data, analytics, infrastructure, design / migration, development life cycles and machine learning.

Considering these different career paths, all our ideal jobs have a need for communication and crossover between a user or client to information that can be transferred to be useful.

Some differences between these jobs include the amount of back end work needed. Where Jonathans job clearly creates a solution to a problem. Esther’s job requires more research to uncover potential problems to be solved. This is also in comparison to Amy’s ideal job where understanding of backend work is required, however is more centered around communicating and delegation. Moreover, James’s ideal job is like Amy’s as a range of IT knowledge is required, however the focus is on the interaction between him and the client.

# Tools

**Group Website:**[team37.s3-website-ap-southeast-2.amazonaws.com](http://team37.s3-website-ap-southeast-2.amazonaws.com)

**Git Repository:**github.com/S3661949/Team-37

**Reflection**

<Comments on how well the audit trail on the git reflects group work>

# Industry Data

**Job Titles**

|  |  |  |
| --- | --- | --- |
| Ideal Job | Closest Job Title | Rank |
| SCRUM Master | IT Manager |  |
| UX Researcher | UX Researcher | 156 |
| DevOps Engineer | System Administrator | 9 |
| Cloud Consultant | Technical Consultant | 56 |

|  |  |
| --- | --- |
| IT-Specific Skills | Rank |
| SQL | 1 |
| JavaScript | 2 |
| Java | 3 |
| Microsoft Windows | 4 |
| Project Management | 5 |
| Business Analysis | 9 |
| Linux | 13 |
| Python | 22 |
| Scrum | 23 |
| Hardware Knowledge | 31 |

**Team 37 required skill set:**

|  |  |
| --- | --- |
| General Skills | Rank |
| Communication | 1 |
| Problem Solving | 2 |
| Organisational Skills | 3 |
| Team Work | 5 |
| Planning | 7 |
| Creativity | 9 |
| Leadership | 11 |
| Time Management | 12 |
| Management | 19 |
| Multi-Tasking | 20 |

**Three highest ranked general skills not required:**

* Writing – Rank 4
* Troubleshooting – Rank 6
* Detail-Orientated – Rank 8

**Three highest ranked IT-Specific skills not required:**

* SAP – Rank 6
* Business Management – Rank 7
* Graphic Design – Rank 11

**Reflection**

Has your opinion of your ideal job changed?

Amy: Yes and no. I am not sure I want to be a SCRUM master but I definitely want to work in IT management, considering this is a type of management style I would definitely like to look into it.

Esther: My opinion of my ideal job has altered slightly - a feeling of discouragement that this may be a lot harder than I thought. UX/UI designers are in much higher demand in the job market, many companies seem to not be as invested or be in much need of UX researchers. This means that I have to gain more skills than what is usually required from a UX researcher to really stand out for better job opportunities in IT.

Jonathan: No. Although my ideal job title doesn't appear in the data initially made me nervous, after speaking to some professionals in the industry, it seems like the opportunities for my job title are growing quickly. I'm excited to continue to work towards becoming a DevOps engineer.

James:

As a group we agreed that our opinions on our ideal job had not changed, although we did have concerns about the rank and demand for our future jobs. We identified that a lot of the general skills our jobs required were common from role to role, thus placing emphasis on our need to refine those general skills to ensure our employability and greater our chances of working in different fields of the industry. We understood that the data is a standpoint for the “now”, and we were open to the fact that by the time we finish our degrees, those rankings are likely to undergo great change and even our ideal future jobs.

# IT Work

<loremipsum>

# IT Technologies

## Raspberry Pis, Arduinos, Makey Makeys, etc. – Amy

<loremipsum>

## Machine Learning – Esther

<loremipsum>

## Cloud, Services, Servers – Jonathan

<loremipsum>

## Blockchain and Cryptocurrencies – James

Blockchain technology is a combination of three primary technologies:

* Private key cryptography,
* Distributed network with a shared ledger,
* Incentive to service the networks transactions, record-keeping and security.

These technologies aren’t new but the blockchain is the three, arranged into an application that is. Cryptographic keys are used to establish your digital identity. Combining a public key (how you are identified as a user) and a private key creates your digital identity reference based on possession and the use of both is how you express consent to digital interactions. The distributed ledger is used for recording static data (a registry) and dynamic data (transactions).

The biggest use case right now for blockchains are as a platform for cryptocurrencies. As a platform it can also be used for smart contracting, automated governance, markets, streamlining of clearing and settlement and automatic regulatory compliance. As a system of record its primarily used for digital identity but can also be used for tokenization, inter-organisation data management, audit trails or by the government and financial institutions.

The future of blockchain technologies is vast to say the least. Some potential uses in the next few years are as a prevention to voter fraud, blockchain technology can provide a strong electronic vote-counting system. Securing voter registration, ID and vote information so that it can’t be interfered with. Improving government efficiency and capabilities, in sectors such as healthcare, education and the distribution of public benefits. Protection of self-driving cars, the blockchain as an encrypted database structure can be used to improve the security against cyber-attacks. Creating financial avenues for poverty-stricken countries and its people, the blockchain as a decentralized system can make doing business with hard-to-reach countries and sending money back and forth for migrants, immigrants and refugees more convenient and a lot cheaper.

Blockchain as both an industry and a technology, is still undefined and we are still very much in the exploration stage. With established and proven solutions on the horizon there are some key developments still needed to require traction and project the Blockchain into larger focus. The current technology itself is inadequate to support transaction volumes for most enterprise-scale applications and to add to that, if the technology is to be used across an industry sector, there will need to be governance rules established that could take years to negotiate.

If blockchain technology continues to grow it is likely to be seen in many different operations and industries, mostly used as building blocks for companies to automate, digitize or streamline their operations. It could be the forefront for many private industry sectors, including real estate, banking and health care. If the government uses it, it will transform the way citizens access services and transactions and make it less tedious. The adoption of this technology will increase the demand for blockchain developers greatly.

A cryptocurrency is a digital currency intended to work as a medium of exchange. It uses cryptography as mentioned before to secure and verify transactions, and to also control the formation of new units. The properties of cryptocurrencies can be separated by transactional and monetary. Most cryptocurrencies share a common set of these properties but there are no golden rules.

Transactional:

* Irreversible, no transaction can be reversed
* Pseudonymous, accounts and transactions are not connected to real world identities
* Fast and global, transactions are broadcasted almost instantly and confirmed quickly as well
* Secure, cryptography system
* Permission-less, available to everyone

Monetary:

* Controlled supply, limited supply of tokens
* No debt but bearer, unlike fiat money which is represented by debts, cryptocurrency just represent themselves

Cryptocurrencies can be used for buying goods, investing and mining. Whilst all very simple actions its attention is gathered because it is decentralized, meaning there is no central control authority and no servers involved. Giving the people the choice to use a currency that is not controlled by the government / banks.

The future of cryptocurrencies is bright as well. There are some global central banks exploring the options of issuing their own digital currency. Large companies and retail giants could issue digital coins or start accepting payments in the currency, which will support acceptance and encourage trust of the currencies, and with big names behind it, it will show people that its utility cannot be denied, and it is a safe option. Experts also foresee cryptocurrency replacing some national currencies as they’re more efficient in the way they run in comparison to fiat money.

There’s no denying that blockchain technology and cryptocurrencies will have a place in our future. The question is more of a how and when. Both questions come together in the same sense but the how focuses on the impact it will have on society, defined by the scope of acceptance by the government, companies and the people. The when focuses on when the set rules will be defined for the technologies, regarding regulation and governance. Both technologies could help transform the financial system and spawn plenty of job opportunities

If all goes well the future will involve everybody moving across to cryptocurrencies, favoring them as a more efficient banking system. Blockchain technology will also see many companies restructuring how they organize their data and streamlining the way we interactive with their services.

# Project Ideas

The project the group has chosen is a School administration product that is delivered online. It would be used for a multitude of things, such as

* Taking attendance
* Reporting
* Payment from parents
* Consent from parents
* Announcements
* Event planning
* Displaying timetables
* Etc.

In addition to the online portal, we also wanted to have a mobile application (iOS & Android) to streamline simple tasks and create more convenience. These tasks could be things such as taking attendance on excursions or parents paying fees and signing consent forms.

The service will provide many features so that all school administration tasks can be completed within the single application. Focusing on efficient workflow so more tasks can be completed with minimal time and effort, allowing school administrators to focus on higher priority matters.

It will also provide a way for teachers or other administrators to mark attendance, through a simple drop box. Students will also be able to view their own timetable, displaying subject, teacher and room location. Teachers and administrators will be able to create announcements in the service that can be directed to a specific class, year level, subject faculty, parents or the entire school. There will also be a reporting section for school staff members, allowing them to comment on a student’s progress, give grades and this information will be shared with parents and teachers. Expanding on this there will be a feature for parents to book parent / teacher interviews, only displaying time slots that are available to avoid confusion. The recap of what was discussed in the interview will also be available for viewing.

School staff will have access to another layer of tools, this would include things such as the ability to book a classroom for a lesson, set tasks for completion, or write notes for another teacher covering their class. It will also include the ability to create notes on individual students, whether it is regarding an allergy, learning disability or other sensitive situations. They will also have access to budgeting and purchase orders on the service. Included in this, will also be the ability to print a pdf of the purchase order, email the order to a creditor, submit the order for approval or if the appropriate permissions were granted, approving a purchase order. This will all be dynamically tracked in the budgeting section of the service, which will display how much of the budget has been spent, what is remaining and viewing the information per week, month or per creditor.

The mobile applications that are available will allow for tasks that might be prone to error in handling of the information or tasks that will be tedious to instead be completed within the mobile app, efficiently and without error. As previously mentioned it will include taking attendance on excursions, parents check announcements or booking parent / teacher interviews, or students looking up their timetable to see what classroom they are in, what subjects for the day or requirements for special materials for classes.

Tobecontinued…

# Group Reflection

**Amy:**

I feel our group had a slow start as we were one member down and a little lost. However, I think we all worked well together, working fast and efficiently to complete the assignment. I felt that I could have had better time management although during the assignment I fell sick, which didn't help. Overall, I think we have put together an agreeable assignment.

**Esther:**

Loremipsum

**Jonathan:**

Loremipsum

**James:**

My perception of the group is very positive. There is a lot of potential yet to surface and I think it comes down to expanding on our communication. Encouraging each other to give our opinions so we can see how others can view the same problem differently and encouraging feedback, so we can learn better from the work we’ve contributed to the group.

**Group:**

As a group we believe we’ve done well. There is always room for improvement however and we identified communication as something that needs to be improved. What was surprising was the different ways we all collaborated with the group, dependent on our previous experience, knowledge and understanding of how teams should complete a project. One thing we have all learned is the importance of consistent and frequent communication. Breakdown or inconsistency in communication lead to role ambiguity and to second guessing of completed work.