IIT: Assignment 2

# TEAM PROJECT

## GROUP 5


Chelsea Bragg, Jake Kent, Joseph Ashwin Royan,
Eun Mi Seo, Arian Najafi Yamchelo, Yvette Yang

# CONTENTS

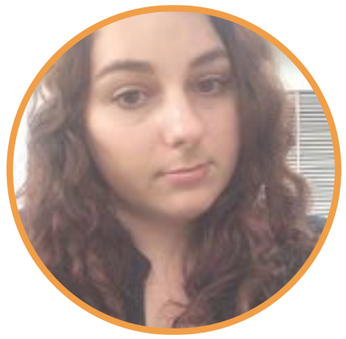
# MEET THE TEAM

## ASHWIN ROYAN

#: S3426980

ASHWIN-ROYAN.GITHUB.IO/IIT/

Ashwin was born in Singapore and grew up in Malaysia. He moved to Australia to study and work, and he currently lives in Perth. Apart from English he can speak Malay conversationally. He has a background in industrial design and has some experience with graphic design and illustration. He has been fascinated with computers and technology since he was young. He especially likes the act of creating something new and thinking about possible implications and applications. He doesn't have any professional experience with IT, but he has self-learned some rudimentary Flash, HTML, CSS and Python. In his free time, he likes to exercise - specifically power and Olympic lifting or ride my bicycle around the nearby lake. He also enjoys playing video games, cooking, listening to history and philosophy podcasts, and petting his cat Nebby.



## ARIAN YAMCHELO

#: S3910902

ARYNA93.GITHUB.IO/IITA1/

Arian is from Iran and he migrated to Melbourne, Australia 10 years ago. He graduated from high school in Iran before moving out. He speaks Farsi and Turkish, studied a couple of certificates in spoken and written English upon arrival in Australia. Besides that, he has completed a Certificate IV in programming. He is interested in game development and always wanted to work with popular gaming studios. His eldest brother, a computer hardware engineer bought him the first laptop. Since then, his passion for coding started, and he wants to be a software developer. In his spare time, he likes to play video games and workout. Being an animal lover, he has three dogs, Sunny, Heeva (German Shepherds) and Teddy (Samoyed), and a cat named Barfi (Persian Cat).

## CHELSEA BRAGG

#: S3908217

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Chelsea currently lives in Townsville QLD, where she works as a Daycare Teacher. She has always had an interest in IT, particularly when it comes to videogames. Videogames have always been a massive part of her life. She would use them as an escape when she was a child, often spending hours on her Game Boy trying to complete her Pokédex in Pokémon Yellow. She dabbled in a few IT classes in high school, obtaining Certificate I and II in IT. Career-wise, she spent a few years as an IT Support Technician, offering rudimentary tech support, which usually involved assisting elderly customers with their emails. Although she enjoyed this role, she did not find it particularly challenging, which is a big part as to why she has decided to enter into a Bachelor of Information Technology at RMIT. Outside of IT, her hobbies include drawing, cooking and learning Japanese.

## JAKE KENT

#: S3905550

ELJAKE0.GITHUB.IO/

Jake is an aspiring web developer and IT professional who grew up in a small town in NSW. While working he has found a love for problem solving and data analysis and decided that the right field for him to be in would be IT. In 2020 he obtained Diploma of Information Technology through TAFE Digital, and in March 2021 began a bachelor degree through RMIT via Open Universities. In his spare time he likes to grow chilis, adding a healthy amount to every meal he cooks. He also tries to slowly learn Spanish to communicate with work colleagues and friends.

## EUN MI SEO

#: S3909171

EUNMIS3909171.GITHUB.IO/IIT/

Eun Mi is from South Korea and migrated to Melbourne 10 years ago. Back in Korea, she received a Bachelor of Arts, specialising in literature, and worked at one of the biggest retail companies there for ten years. Currently she is working at an online security company as an authentication analyst, and she wants to develop her career in IT industry. She started her job without any IT knowledge or tech skills and believes understanding the IT industry with some technical skills is crucial to her career development and she also would like to learn more about Cybersecurity. In her spare time, she enjoys watching AFL and cricket games and listening to music.

## YVETTE YANG

#: S3893858

VET7.GITHUB.IO/IT/

Yvette was born in the United States and raised in Australia. Currently she lives in Sydney. Apart from English, she speaks basic mandarin. She has previously completed a Diploma in Communication & Media and has recently transferred from a Bachelor of Design in Architecture to a Bachelor in Information Technology. She is interested in IT because it is an industry that is fast, innovative, dynamic and progressive, and likes to both problem-solve and explore new ways of doing things. Her best buddy is Kaya, she's a border-collie cross kelpie. In her spare time, she loves to surf, hike, travel, hang out at gigs, and read.

# TEAM PROFILE

| Myer-Briggs | Learning Styles | Big-Five |
|---|---|---|

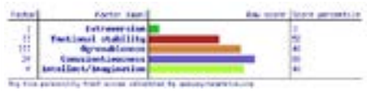
## CHELSEA

*Overview*: Chelsea is an INFJ. INFJs are considered to be creative, nurturing, insightful and future-oriented individuals. They are described as deep and complex idealists; despite being reserved and quiet. They are considered natural and passionate leaders and are constantly seeking meaning and purpose in everything, but they also have the ability to work logically and rationally when necessary. INFJs tend to have excellent communication skills, especially when it comes to writing. Warm and affirming, they are committed to a better tomorrow and will continuously try to make everyone's life a little bit better. They are also passionate, with a strong sense of personal integrity, and when they determine that something is important to them, they will pursue that goal no matter what. Because of this, they tend to burn out easily. Their sensitive nature leads them to be very private and selective when sharing thoughts and information. Because of this, they can be reluctant to approach or engage people who differ from them, making them hard to get to know (NERIS Analytics 2021).

*Reflection:* As indicated in the results, an INFJs traits are very conflicting, with which I resonate. Personally, I do not consider myself a leader in any sense of the word. I am, however, very passionate and goal orientated, and so when it comes to seeing those goals to fruition, I can be quite outspoken and yet, in all other aspects of my life, come across as very reserved, timid even. I often try to find ways to express myself creatively, but as someone very private and sensitive to criticism, I tend to be very selective of who I choose to share that side of myself with. I am extremely loyal and regularly put the needs of friends and family before my own, often leading me to take on too much. To reach a healthy balance, I need to open myself up and have a little more faith in the decision's others make.

| | | |
|---|---|---|
| INFJ-A<br>Advocate | Reflector style (33.3%)<br>Theorist style (33.3%)<br>Pragmatist style (33.3%)<br>Activist style (0%) | Extroversion (3)<br>Emotional stability (52)<br>Agreeableness (40)<br>Conscientiousness (80)<br>Intellect/Imagination (40) |



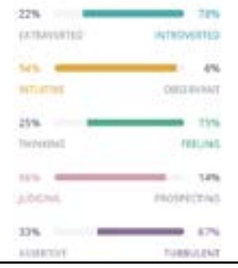


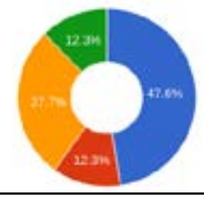
## JAKE

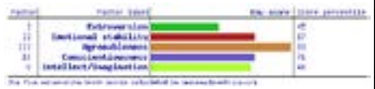
*Overview:* Jake is an advocate INFJ-T. 'Being creative, insightful, principled, passionate, and altruistic are strengths. Advocates stand out for imagination, compassion, integrity, and deeply held principles. Unlike many other idealistic types, however, they are also capable of turning their ideals into plans and executing them. There are challenges too. The most idealistic and dedicated of personality types can become frustrated when it comes to navigating interpersonal conflicts, confronting unpleasant facts, pursuing self-realization, or finding a fulfilling career path. They can be sensitive to criticism, reluctant to open up and can be easily burnout' (NERIS Analytics 2021).

*Reflection:* The tests reflect my character decently. The tests highlight that I am emotionally aware and that I care for and feel empathy for the people around me, as well as helping to increase the happiness of the people I interact with. All of these traits are goals that I actively strive for and want to be hallmarks of my personality.

| | | |
|---|---|---|
| INFJ-T<br>Advocate | Reflector style (47.6%)<br>Theorist style (12.3%)<br>Pragmatist style (27.7%)<br>Activist style (12.3%) | Extroversion (45)<br>Emotional stability (87)<br>Agreeableness (93)<br>Conscientiousness (76)<br>Intellect/Imagination (46) |





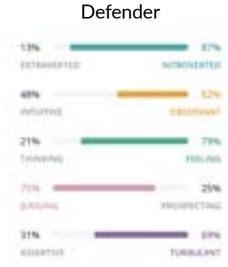
| Myer-Briggs | Learning Styles | Big-Five |
|---|---|---|

## ARIAN

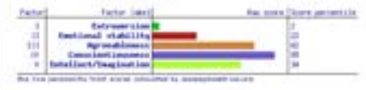
*Overview:* 'The Defender personality type is quite unique, as many of their qualities defy the definition of their individual traits. Though sensitive, Defenders have excellent analytical abilities; though reserved, they have well-developed people skills and robust social relationships; and though they are generally a conservative type, Defenders are often receptive to change and new ideas. As with so many things, people with the Defender personality type are more than the sum of their parts, and it is the way they use these strengths that defines who they are. There's hardly a better type to make up such a large proportion of the population, nearly 13%. Combining the best of tradition and the desire to do good, Defenders are found in lines of work with a sense of history behind them, such as medicine, academics and charitable social work' (NERIS Analytics 2021).

*Reflection:* The results reflect who I am fairly well, I prefer solitary activities and tend to be quiet and listen more which I don't enjoy about myself. I am more of an observant individual and highly practical in gathering information from the world around me. Emotionally expressive, sensitive feelings and empathetic though highly organised and value clarity.

| | | |
|---|---|---|
| ISFJ-T<br>Defender | Reflector style (35.5%)<br>Theorist style (18.8%)<br>Pragmatist style (45.7%)<br>Activist style (0%) | Extroversion (2)<br>Emotional stability (22)<br>Agreeableness (62)<br>Conscientiousness (95)<br>Intellect/Imagination (34) |





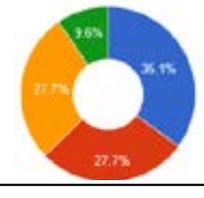


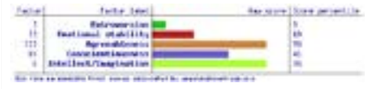
## ASHWIN

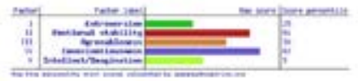
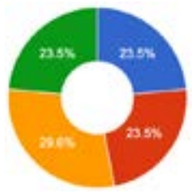
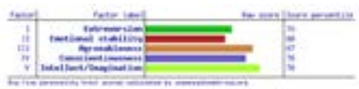
*Overview:* For the Myers Briggs personality test, Ashwin Royan's results are INFP-T or a 'Turbulent Mediator' personality. Mediators are quiet and private with idealistic perspectives. Mediators typically get along with others and try to resolve problems and antagonisms. Turbulent mediators tend to use their idealism to determine the best course of action to improve themselves and resolve problems. Their weaknesses tend to be expecting too much of themselves and getting overwhelmed with unrealistic expectations. Small mistakes, in their eyes tend to lead to doubts and passivity. As for the learning style test, Ashwin Royan scored high on the 'reflector' learning style. Reflectors prefer to observe and absorb information cautiously – collecting and analysing before reaching a conclusion. Reflectors usually see a big picture using previous experience and the current situation (NERIS Analytics 2021).

*Reflection:* The Discussions, time to absorb information and feedback from others are useful for this learning style. As for the Big 5 personality test; Ashwin Royan got a low score on extroversion and a higher score for intellect, imagination, and agreeableness. The scores are a scale relative to other people who have taken the test. I think that this test is accurate in that I do tend to be quite introverted and quiet. This tends to lead in my neglecting to mention as much information is necessary or getting help before I need it. These results help me be more aware of my strengths and weaknesses and help me realise what I can work on to improve in a team setting. For example, I can improve by communicating more – both my opinions and problems. The results also help me understand that I need time to process information so should refrain from doing work at the last minute.

| | | |
|---|---|---|
| INFP-T<br>Mediator | Reflector style (35.1%)<br>Theorist style (27.7%)<br>Pragmatist style (27.7%)<br>Activist style (9.6%) | Extroversion (3)<br>Emotional stability (19)<br>Agreeableness (76)<br>Conscientiousness (41)<br>Intellect/Imagination (76) |

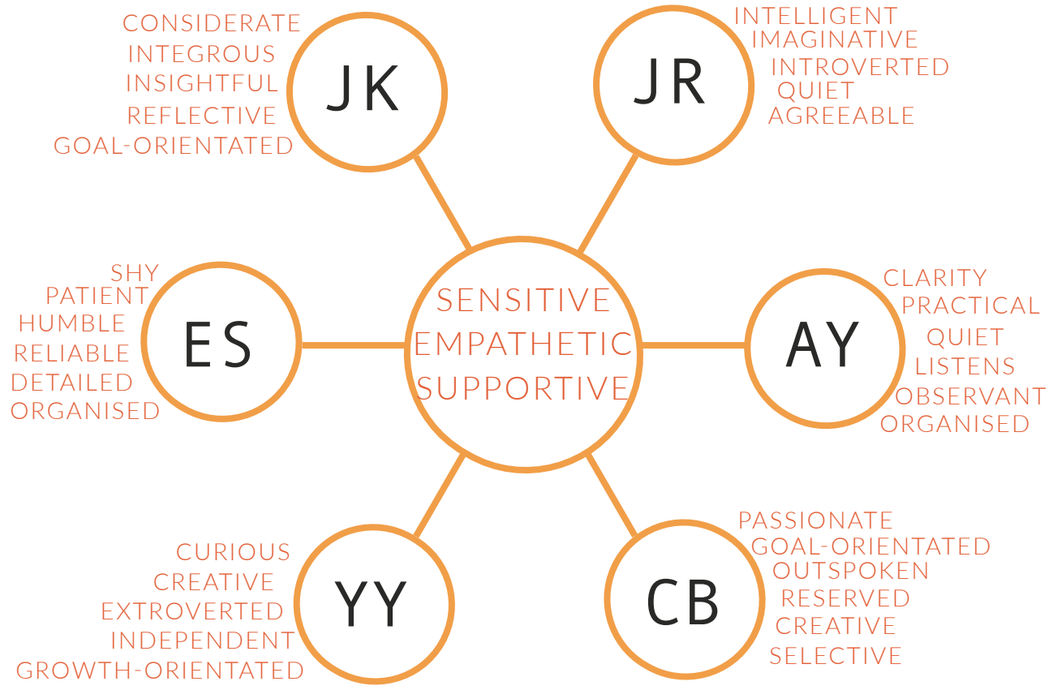



| Myer-Briggs | Learning Styles | Big-Five |
|---|---|---|
| **EUN MI** | | |
| *Overview:* Eunmi is an 'Assertive Defender'. Defenders prefer to support others over taking the lead. They are generous in sharing their knowledge and experience with others, and feel pride in making contributions that go beyond what others may expect. Defenders feel a deep sense of responsibility towards their peers, which means they are very reliable and will consistently exercise patience and respectful behaviour. Given their nature, however, Defenders can appear introverted, as their strong empathetic nature causes them to fear they may offend others, often deterring them from expressing their ideas and feelings. In terms of learning style, Eunmi is a 'Theorist'. Theorists tend to adopt a logical approach, preferring facts and objectivity to imagination and speculation. They like to find patterns in data, and make assessments and evaluations according to accepted principles and theoretical models. Their desire for structure makes Theorists disciplined and highly organised. In Big Five Tests, Eunmi was strong in Emotional Stability and Conscientiousness. Overall, Eunmi is organised, disciplined and thorough; consequently, she likes routine and planning. These traits, however, can lead her to be anxious and stressed if she encounters situations that are less structured or concrete. (NERIS Analytics 2021).<br><br>*Reflection:* The results provided me with valuable information, analysing my strengths and weaknesses, and gave me some ideas about working in a team more efficiently. I am shy and humble, so I will not be suitable as a leader, however I can help others by being supportive, reliable, patient, and empathetic. I can contribute to creating an amicable and comfortable environment throughout the group project. As shown in the test results, I am strong at organising, planning, checking details, and finishing things on time. I can utilise these strengths in the group to organise meetings, taking meeting minutes, and checking our timeline to ensure everyone is on track to complete the assignment. In the meantime, I will need to be careful not to take things too personally and try to speak up and share my ideas instead of suppressing myself. Opening myself up and proactively communicating with others will help me release any stress and worries. | | |
| ISFJ-A<br>Defender<br>  | Reflector style (29.7%)<br>Theorist style (37.7%)<br>Pragmatist style (22.5%)<br>Activist style (10.1%)<br>  | Extroversion (25)<br>Emotional stability (91)<br>Agreeableness (30)<br>Conscientiousness (92)<br>Intellect/Imagination (3)<br>  |
| **YVETTE** | | |
| *Overview*: Yvette is an ENFP. People of this type tend to see their colleagues as friends and enjoy building genuine relationships with others. They thrive in supportive environments where everyone is seen as equal and are open about their ideas and opinions. As they value freedom above all else, ENFP's are highly independent and perform best when they are not being micromanaged. They are not usually known to be great at administrative tasks involving routine upkeep and needs someone to handle organisational matters. They also tend to overthink, get stressed easily and are prone to being too hard on themselves especially in situations where they believe they have made a mistake. However, these types are generally open-minded, creative and particularly adaptable to almost every other personality type and can easily adopt new ways of thinking and communication styles into their vocabulary. ENFP's are exceedingly growth-orientated individuals who believe that there will always be room for improvement (NERIS Analytics 2021).<br><br>*Reflection:* I think this is a good indication of my personality though there are certain aspects that I believe, due to the process of active development, have improved over time. Especially in terms of routine upkeep, I am a lot more structured when it comes to work or study than I use to be; this is perhaps most apparent in my Big-Five conscientiousness scores. I strongly believe that none of us will ever be perfect and that we as individuals should always strive to better ourselves in areas where we are weak. Where I am currently wishing to improve most is my tendency to overthink, especially when it comes to other people's feelings. I think a good strategy for me is to give people the benefit of the doubt and take less time trying to make sure everyone is happy, although I probably will not ever be able to not care at all as I would not be true to myself then. As for learning styles I am fairly balanced and learn best through incorporating all four approaches. At the end of the day, I like to see how theory can be put into practice. | | |
| ENFP-T<br>Campaigner<br>  | Reflector style (23.5%)<br>Theorist style (23.5%)<br>Pragmatist style (29.6%)<br>Activist style (23.5%)<br>  | Extroversion (70)<br>Emotional stability (66)<br>Agreeableness (67)<br>Conscientiousness (76)<br>Intellect/Imagination (76)<br>  |



# GROUP REFLECTION




We believe it is essential to understand the team members' personalities when it comes to group work. We agreed that good communication, collaboration, building a bond based on trust, and demonstrating leadership are the keys to success. The personality test results helped us understand our strengths and weaknesses, and we are confident that we have the potential to be a successful team.

First, we have discovered a lot of similarities among us. Most of us share characteristics such as being sensitive, empathetic and supportive. These characteristics will play a significant role in our group by facilitating the building of relationships and a friendly environment. In team meetings, we will begin with personal conversation to make everyone feel comfortable and welcome, rather than going to business immediately. In addition, we will have casual chats anytime, for any matter, via Discord, to further consolidate our relationships. This will help the team overcome being shy by encouraging us to open up more, and will eventually lead us to developing the confidence to voice our individual opinions, thus improving our communication as a team.

According to the test results, we lack leadership, which is one of the essential attributes for success. We need someone who can take the lead and help delegate tasks, check our progress and volunteer when decision-making is required. If the team worries about others' feelings too much, people may hesitate to ask questions, give feedback or make decisions, preventing us from progressing. With a passionate, outspoken and goal-oriented personality as an advocate, Chelsea is a strong candidate who can help with this issue, and she kindly agreed to take the leader role. Jake is also an advocate type and will assist in the leading role. Eun Mi and Arian can contribute to organising and maintaining the team's progress with their organisational skills. Ashwin and Yvette can bring their creativity and intelligence to the problem-solving aspects and presentation of the team assignment.

# IDEAL JOBS

After comparing everyone's ideal job, we have discovered some of us had the same ideal job; both Chelsea and Arian goals are to be game programmers, and Jake and Yvette want to be full-stack web developers. Ashwin's ideal job is a software developer, and Eun Mi's is to become a cybersecurity analyst. Apart from Eun Mi, everyone wants to be a type of developer, and technical skills are essential. Learning programming languages such as Java, Ruby, Python, HTML, CSS, and C++ are common elements for becoming a developer. On the other hand, Eun Mi requires a broad range of IT knowledge and a solid understanding of network security and systems. Though she does not need to learn programming or database languages in-depth, she might still need to understand a bit of Python.  For Ashwin, platform and tool knowledge are additional useful skills.

Most of us have a little bit of knowledge and experience with some of these tech skills. We want to pursue them further professionally, which is the primary motivation for enrolling in 'Introduction to Information Technology' at RMIT, which is prerequisite for completing a computer science qualification. Working experience in our desired field seems to be crucial as well, such as participating in an internship to gain familiarity and guidance from experienced professionals.

Apart from tech skills, we also need general skills. We all agreed communication skills, interpersonal skills, problem-solving skills, and teamwork skills are essential in working in a group and interacting with the management team or clients. Regardless of which area one will be working in, these are the fundamental skills employers are seeking. We believe we can develop these general skills while we work on assignments as a group.

| Team | Ideal jobs | Technical Skills Required | General skills Required |
|---|---|---|---|
| **Chelsea** | Game Progammer | • Strong understanding of programming languages, specifically C++.<br>• Unreal Engine tools | • Interpersonal skills<br>• Communication skills<br>• Problem-solving<br>• Teamwork |
| **Arian** | Game Programmer | • 5-6+ years of experience is a must<br>• Bachelor's degree or equivalent required.<br>• Experience working on live mobile games based on player feedback and telemetry data. | |
| **Jake** | Full-stack Developer | • UI/UX design, colour theory, and layout and typography theories while also mastering CSS, HTML, and JavaScript<br>• SQL, PostgreSQL, MongoDB<br>• Cybersecurity and network configurations, and master testing frameworks (Selenium)<br>• Programming languages like Java, Ruby, and Python | |
| **Yvette** | Full-stack Developer | • Ruby and JavaScript<br>• Experience in a similar field | |
| **Ashwin** | Software Developer | • HTML, CSS, and Python<br>• NodeJS, React, Vue, Mongo DB, Mocha, Chai, Supertest, further my knowledge of GIT, AWS and continuous integration and delivery. | |
| **Eun Mi** | Cyber Security Analyst | • Broad understanding of a range of IT technologies<br>• Network Security, Information systems, Cryptography, Python and Vulnerability assessment | |

- programming languages
- database languages
- platform or tool
- degree or qualifications
- prior experience
- knowledge or theory

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# INDUSTRY DATA

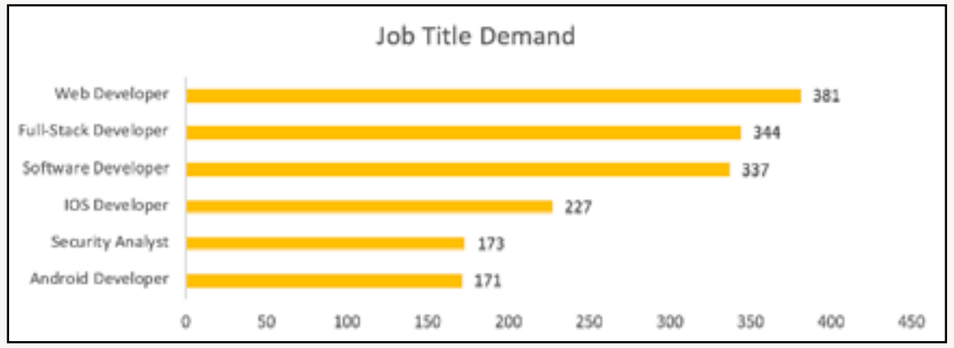


**Fig 1.** *IT job demand Australia and New Zealand Dec. 24, 2017 - Mar. 23, 2018* by Burning Glass Technologies, 2018c.

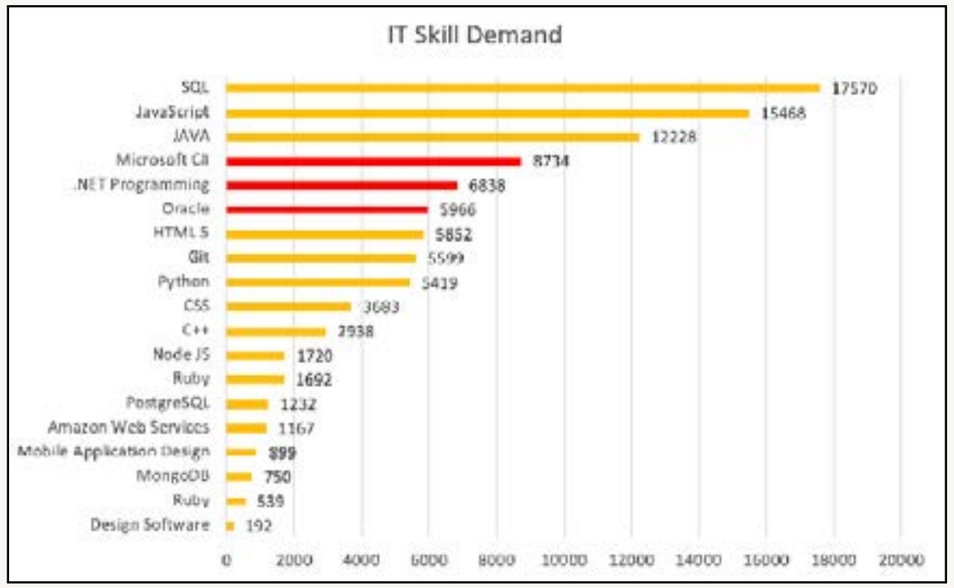


**Figure 2.** *IT skill demand in Australia and New Zealand Dec. 24, 2017 - Mar. 23, 2018* by Burning Glass Technologies, 2018b.

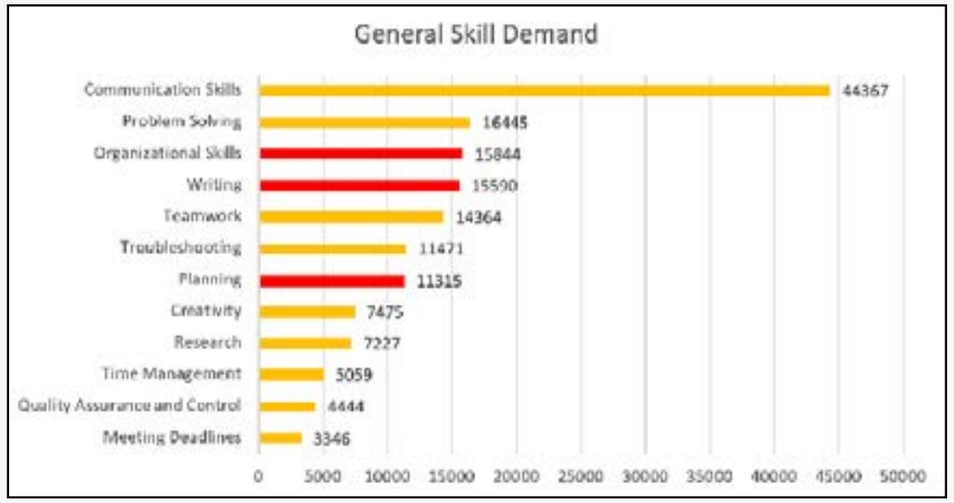


**Figure 3.** *General skill demand in Australia and New Zealand Dec. 24, 2017 - Mar. 23, 2018* by Burning Glass Technologies, 2018a.



# Burning Glass

## Job Title and Employer Demand

Team Code-Cats have a diverse range of ideal job positions – Chelsea and Arian are looking for the game programmer position, Jake and Yvette aspire to be full-stack web developers. Ashwin, a software developer, and Eun Mi a cyber security analyst. These titles collectively boast a broad skillset. Game programmers require extensive knowledge of programming languages, in Chelsea's case, especially C++, game development specific tools and knowledge of game engines such as the Unreal Engine. Arian's ideal position requires 5-6 years of experience, a bachelor's degree in a related field and experience working with mobile game.

Similarly, Jake and Yvette as full-stack web developers require extensive knowledge in programming languages – including Java, Ruby and Python. Additionally, Jake's ideal job requires experience and knowledge in fields outside IT as a full stack developer necessarily needs to contribute to other aspects of a complete web project – these skills include user interface and experience design, colour, and typography theories. Backend skills such as knowledge of databases (such as SQL, PostgreSQL, and MongoDB), networking and cybersecurity are also required. Both Yvette and Jake also require experience and knowledge of web design such as HTML, CSS, and JavaScript. Eun Mi requires specialized knowledge on network security, information systems, cryptography, and vulnerability assessment, augmented with a broad understanding of a range of IT Technologies and programming languages, especially Python.

In terms of employer demand – web developers rank the highest with 381 postings available in March 2017 – Feb 2018. Full-stack developers rank second with 344 postings in March 2017 – Feb 2018 and security analysts with 173 postings from March 2017 – Feb 2018. There were also 227 IOS developer postings and 171 Android Developer postings (Burning Glass Technologies 2018c, 2018e).

## IT Specific Skills

As a team, Code – Cat's required skill set consist of a wide range of skills. IT specific skills related to programming languages are knowledge of C++, CSS, HTML, JavaScript, Java, Ruby and Python. Database related skills consist of SQL, PostgreSQL, MongoDB. Skills using platforms and services include NodeJS, GIT and Amazon Web Services. Vue and React to create interfaces, Mocha and Chai for testing. Additionally, broader skills and knowledge is required in continuous integration and delivery (CI/CD), network security, information systems, cryptography, and vulnerability assessment. Several other specialist skills such as UI/UX, graphic design, colour and typography theory are also required. In terms of demand, the skill which ranks the highest is SQL, a database and programming language; followed by JavaScript and JAVA. Most popular programming languages are similar in demand with services and niche programs at the tail end. The three highest ranked IT specific skills not in the group's skill set (marked in red on table) are Microsoft C# with 8734 postings, .NET Programming with 6836 postings and Oracle with 5966 postings (Burning Glass Technologies 2018b, 2018d).

## General Skills

In addition to IT specific skills, employers also require several general skills. Code – Cat's primary required general skills are interpersonal skills, communication skills, problem solving and teamwork. Troubleshooting, creativity, research skills, time management, quality assurance and control, and meeting deadlines are also required. Employer demand ranks communication skill as the most sought after, followed by problem solving and teamwork. The top three highly ranked general skills that are not required by Code – Cats (marked in red on table) are organizational skills, writing, and planning (Burning Glass Technologies 2018a, 2018b).

## Gaming Industry Data

The burning glass data provided did not mention many specific game development skills; two members of Code-Cats have ideal jobs in the industry. As such we are including some other data found specific to this segment of IT - see Figure 4, 5 and 6. The video game industry in Australia is a sizable portion of the IT sector, it was worth 2.96 billion in 2017 (Brand et al., cited in IGEA 2018).

During the global Coronavirus pandemic, there was a significant surge, going up to 3.4 billion (Consultancy.org 2021). With the mobile gaming industry (Arians chosen field) consisting of a large portion of its developmental focus - 55% and 49% of studios focusing on Android and IOS development, respectively. As the industry is experiencing significant growth, it can be inferred that video game development positions will also experience parallel growth (Brand et al., cited in IGEA 2018). According to the same data, 33% of game studio employees are programmers.

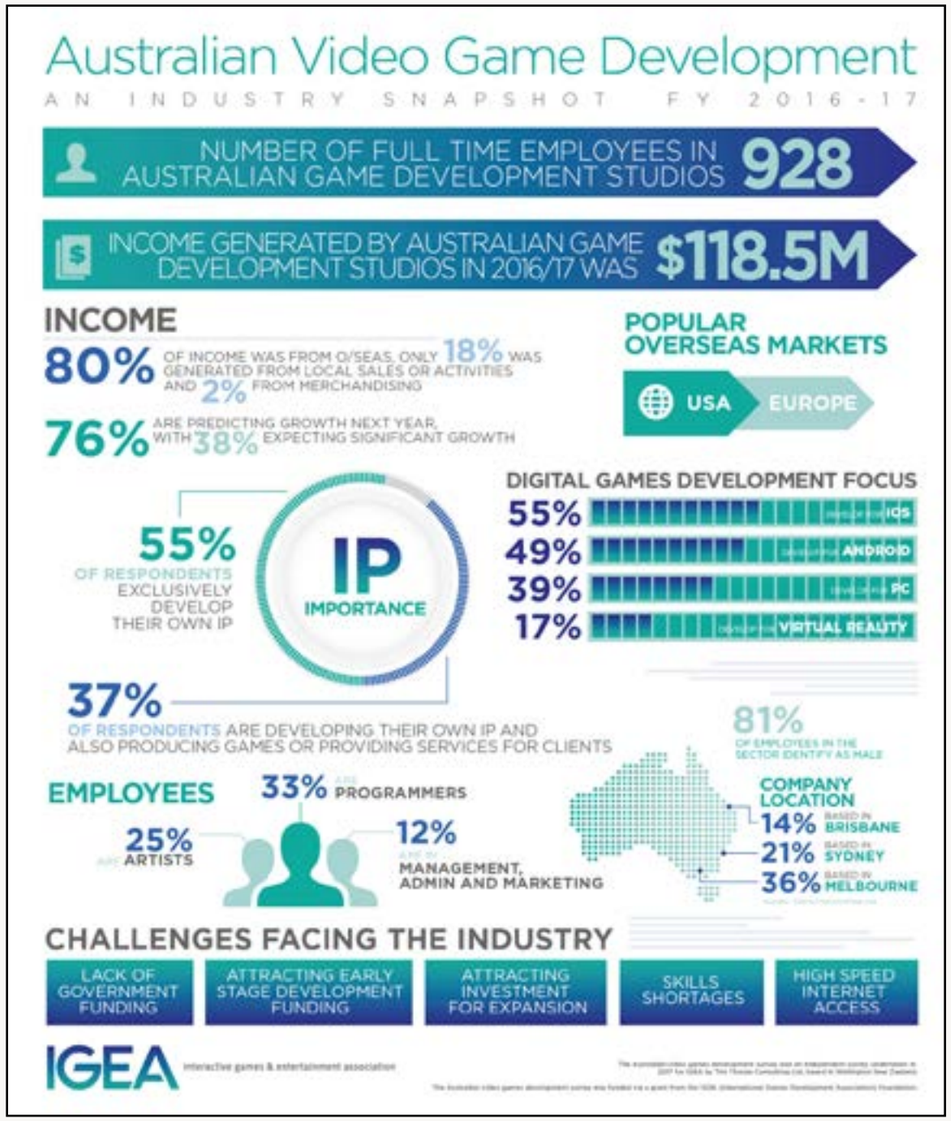


**Figure 4.** *Australian Video Game Development 2016-2017* by IGEA, 2018.

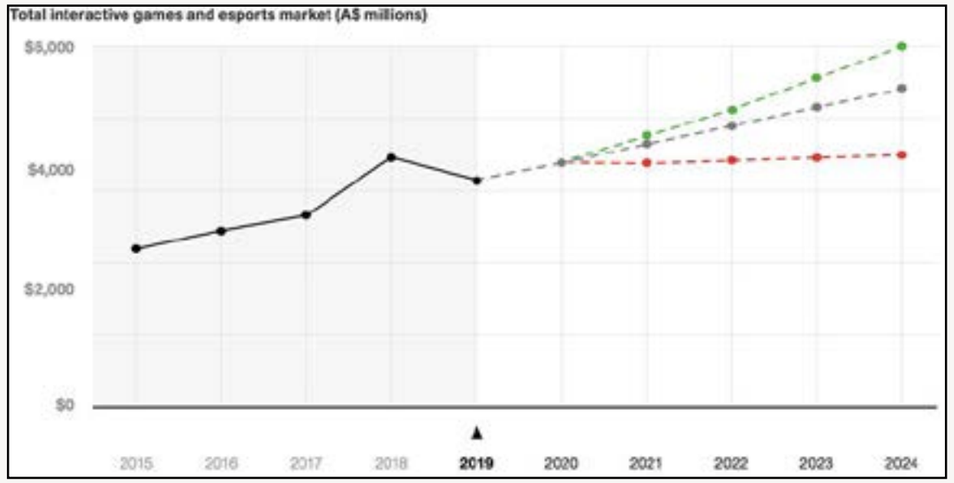


**Figure 5.** *Interactive Game and Esports Projections* by Consultancy.org, 2021.

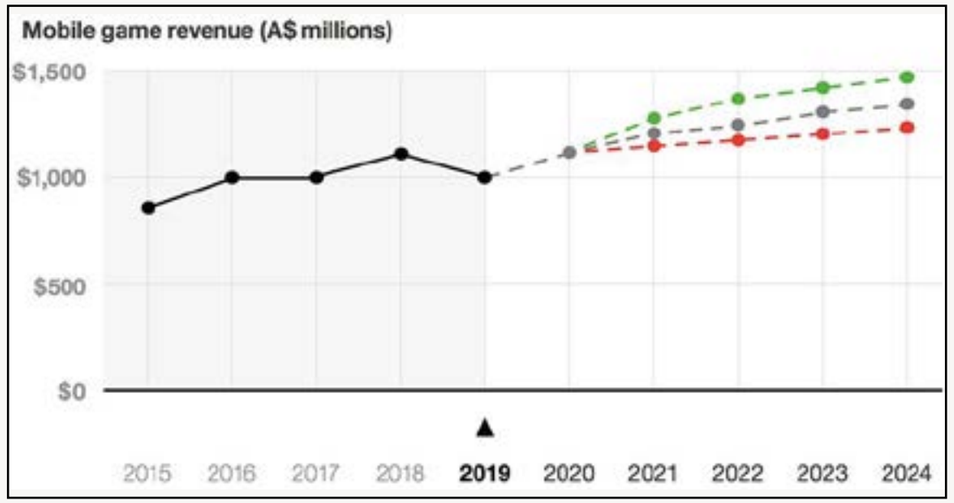


**Figure 6.** *Mobile game revenue and projections* by Consultancy.org, 2021.

# Reflections

*Chelsea:* After reviewing the Burning Glass data, my opinion of my ideal job has not changed. Although the data does not specifically mention my ideal job of game programmer in its statistics in terms of demand, it does indicate some overlap in highly sought-after skills, both technical and general. Based on the provided data, the top three general skills in demand are communication, problem-solving and organisational. Personally, I believe that I already have a great understanding of these skills and continue to strengthen them daily. Regarding specific IT skill requirements, my ideal job requires applicants to have an in-depth understanding of programming languages, C++ specifically. Although C++ is rated relatively average in terms of demand, Microsoft C# appears quite high, and as a lot of game development utilises C#, I can focus on creating a solid foundation of knowledge, which will provide the potential to shift between alternative projects that rely more on C#.

*Jake:* After reviewing the Burning Glass data my opinion of full stack development as my ideal job has not changed. While Full Stack Developer is 17th in the list of Top IT Job Titles the skillset that is acquired by a full stack developer is utilised in most of the positions ranked higher up on the industry data list; two major full stack skills (SQL, and JavaScript) are also the top two IT skills in greatest demand. The vast scope of skills that a full stack developer requires is what makes this role so attractive to me, as the drive of continually learning and finding more efficient or effective ways to work are dominant forces in my approach to life.

*Ashwin:* Reviewing the burning glass data, I have not changed my opinion on my ideal job. I would still like to be a software programmer. Conversely, the data has highlighted the necessity of learning multiple skills over a broad range of professions, and there are many overlaps between the skills required for the different roles. I would like to consider a role in full-stack web development though as the data has shown me that many of the skills required are ones that I have some background in such as graphic design, colour theory and typography. I do however still prefer software development and the data has shown me what skills I need to expand or take steps towards acquiring. In terms of general skills, the data has shown me that I need to develop skills that may not necessarily be on the job description such as the three skills - organization, writing and planning that were not on any of our job requirements, yet highly sought after by employers.

*Arian:* After reviewing the burning glass data, my opinion hasn't changed about my ideal job. Although there's no mention of game developer nor game designer in the statistics, Java, Python, C# and most importantly C++ are the most important programming languages when it comes to developing games and according to the data they are considered high IT skill demand in IT industry. My ideal job requires me to have sound knowledge of content creation and working on mobile apps which mostly involves programming using C# and C++. According to IGEA (2018) the gaming industry is growing although there are some challenges in the gaming industry the income generated by the Australian game development studios were over $115 million which is increasing every year.

*Eun Mi:* After examining the Burning Glass data, it was apparent the industry demands various IT-specific skills; SQL, JavaScript and JAVA are the most sought-after of these. Indeed, skills related to programming and development are generally favoured. It seems vital to equip oneself with some of these technical skills to start a professional career in the IT industry, which raises many questions for me. Initially, my ideal job was a cybersecurity analyst, which usually requires an IT degree, an understanding of a range of IT technologies, and experience in the field. Although some technical skills, such as network and systems security, are specified, it appears cybersecurity analysts require a broad general knowledge of IT. It may, therefore, be best for me to begin by obtaining some IT-specific skills, perhaps by working in IT support. With several years of experience, I could progress into the area of cybersecurity. In my current employment, I have already begun to develop general skills in high demand, such as communication skills, problem-solving, organisational skills; the next step for me is to obtain greater technical proficiency.

*Yvette:* Reflecting upon the Burning Glass data, I think it is now more practical for me to aim at becoming a software developer. This is partly due to the title being in the top 3 in terms of highest in demand (BGT 2018c). Software developers also require a comprehensive and flexible skillset which gives me the option of applying for other positions – e.g., full stack developer – in the future. After some further research, a software developer generally allows for: (1) flexible hours - normally there is only a timeframe for the developer to work on; (2) flexible locations to work from and less travelling; (3) allows for an abundance of creativity as well as skills.

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IT WORK

# interview

**IT Professional Interview Transcript**
**Interviewer: Jake Kent**
**Interviewee: Scott Robertson**

Interviewer: Hi my name is Jake Kent and this is the IT interview for Introduction to IT assessment number 2. So, let's get started. What is your name and what IT company do you work for?

Interviewee: My name is Scott Robertson and I work for Dropbox.

Interviewer: What's Dropbox role in the IT industry?

Interviewee: So Dropbox primarily provides a storage space in the cloud, it's a cloud storage provider, however the intent of Dropbox in, I guess, in it's space is to enable collaboration between various parties, usually people within companies, but also between companies and other organizations as well.

Interviewer: Cool. So what is your role at Dropbox?

Interviewee: I am a Customer Experience agent, which is primarily product support.

Interviewer: Cool. Who are the different people you interact with in your work? Tells us a little bit about them.

Interviewee: So there are lots of people that I would interact with. There are other members of my team, so other product support representatives, which is split in two, there are advanced support agents who deal with escalated cases, and there are enterprise agents as well. We also deal cross functionally with other areas within customer experience, so for example there's a team who's entire job is customer education. We also then deal with members of the customer success team, who are in charge of managing the larger customers and dealing with their needs, any product feedback that they might have or things they want to see in the product. We also deal with our engineering team, which actually, our engineering team is the largest team, they're the ones who built the product. And there are many many levels, many role of engineers that we have deal with as well. I think that's the bulk of it, but then we also have marketing, PR, our legal teams.

Interviewer: What was your experience prior to working at Dropbox?

Interviewee: So prior to Dropbox I worked in the internal IT department of an advertising agency, so that was not dealing with any external customers. I also worked for Aarnet, which is the internet service provider for universities and other educational institutions, and that was product support with external customers. And right before Dropbox I worked for Winston the blinds company in their internal IT department, a mix of internal and external IT support.

Interviewer: Awesome. What are your current interactions with other IT professionals?

Interviewee: In my role as a product support representative for Dropbox when it comes to supporting customers that are reporting issues with the product, that most of the time is dealing with IT Admins. So the admins of IT departments in larger organizations. So that would be most of my interactions with IT professionals. Prior to that it would have been dealing with external vendors majoritively.

Interviewer: Cool cool. And what are your interactions with clients nor-

-mally like?

Interviewee: So right now as being in support it's normally clients writing in, calling in, or chatting in with a problem with the product. So, almost all of my interactions are based on product support where something isn't working right, or feedback for how they would like the product to work, sending feature requests. It's almost entirely contained in a support aspect - perspective.

Interviewer: Cool. How would you describe the working environment of Dropbox?

Interviewee: The working environment of Dropbox is one that I would call professional casual. It is a very supportive environment, it's not overly professional, people aren't walking around in suits except for the salespeople of course you do have to present a particular image when you are selling things. It's also one where they do emphasize a work life, balance, it's not the kind of place where if you are working, if your shift finishes at 5 or 6 and you are working until 10 every night, it's not the kind of behaviour that gets rewarded. Yeah, it's a healthy and very supportive work environment. Not ridiculously professional

Interviewer: Sounds nice. So, what types of issues do you face on a daily basis?

Interviewee: Because it's, I guess, support, most of what I do is support work the issues that I face are support related. Usually it's customer's issues where the product isn't working for them as expected, and investigating that. There's a lot of back and forth with screenshots and such. But in saying that the tools that we have can also fail, I use a virtual desktop because I use a Mac but I have to support Windows customers as well. I have multiple virtual desktops One of them is through amazon, and every time there are updates for that I can't log in. So, that's something that is common as well, so it isn't just our customer's tooli9ng, that we provide them fail sometimes our internal tools will fail. Also so we work in Sydney but Dropbox is a global organization which is based heavily in the United States, but also the next largest grouping of our employees being in Ireland, so if we have an issue that the Sydney team, our ability to support things isn't huge, we don't have engineers in Sydney, we do also deal with what I like to call the Tyranny of Distance, and also time zones, where we will need to get an answer from someone but we will have to wait until they are online unless it's desperately urgent, in which cause we will wake someone up in the middle of the night.

Interviewer: Damn, that wouldn't be fun at all.

Interviewee: Probably not for them.

Interviewer: Cool. Which aspects of work do you normally spend the most time on?

Interviewee: Being support the most of my job is handling customer support requests. There are, there is project work that I get to do on the side as well, there will be meetings and there will be training. But the majority of it is supporting customers in their use of Dropbox as a product.

Interviewer: Are there any aspects of supporting customers that you find the most challenging?

Interviewee: Yes, there are a surprising number of areas where the product of Dropbox is not just the application that people download on their desktop. There is billing, there is the web interface, but I say the most challenging aspect is when the Dropbox application isn't working because even inf you have a coding background and you know what's going wrong on someone's device. We can't change it. So one of the most challenging aspects is, anything to do with the desktop application and dealing with, trying to find, what the issue is.

I don't have a coding background so me going in to look for a line of code is additionally difficult, because I have no idea what I'm looking at. Definitely the thing that is most challenging is when you see something that you've never seen before and it doesn't quite make sense. With software it comes up quite a bit, it turns out.

Interviewer: Do you have any professional achievements that you are proud of?

Interviewee: I think getting employed at Dropbox in itself is a professional achievement I am proud of. I definitely suffered from impostor syndrome the first yet of working there, thinking "this doesn't feel like a place that I should be working, why have they employed me?" But yes, overcoming impostor syndrome is actually a thing I am quite proud of, I do now feel like I fit and belong in this company.

Interviewer: That's excellent.

Interviewee: Outside of that I was in charge of the deployment of the Windows operating system to devices in my first IT job, eventually – not once I had started the job, and figuring out how that worked with very little documentation, and also getting that onto bootcamped Mac OS devices. That's something that I'm also very proud of.

Interviewer: That does sounds like an achievement.

Interviewee: It was not straight forward. The internet was helpful but not so helpful.

Interviewer: Does working at Dropbox encourage you to learn more about

the cloud and storage spaces?

Interviewee: I would say so. I was already an avid user of the cloud prior to working at Dropbox. But yeah, everything that Dropbox does; so initially Dropbox once upon a time used to host all of its, all of its storage space was hosted in Amazon's AWS, and just the process of moving into our own internal storage, like that does pique my interest and that does you know lead to me then looking up a bit more about how it works, or customers asking "where is my data stored?" Yeah, it does promote, at least to me, wanting to know more about how it all works.

Interviewer: Do you use the skills and practices you've gained at work for your home life?

Interviewee: Yeah to an extent. Just the general working in IT support, in every house or apartment I've lived in I feel like I have taken it upon myself to set up the home network. I have a network area storage unit that, again is something that, knowing and having an IT background, makes, like, there's no jargon that when you go into the settings for all of these things it's not like "I have no idea what that is", everything that I see makes sense to some extent. And then obviously as I'm sure anyone who works in IT is familiar with. When other members of your family get the slightest whiff of "ooo you're an IT professional", you are frequently bombarded with questions about "how do I do this? How do I do that?" So I don't necessarily know if that's a positive. You do feel obliged to help your family and friends but you are also kind of doing it for free, but it is nice to help people. It's just that I don't have the problems specifically that sometimes saying no to people when they ask too much, I guess it's something that some people may need to work on.

Interviewer: Yeah, definitely. Do you have any future IT goals that you are working towards?

Interviewee: Yes. So I don't see myself working in customer, in a customer facing role, to the day I retire. So one thing I would like to get into is working on our product launches, working in teams that work between engineering and customer experience to communicate new roll-outs of products and to prepare, basically to prepare people in my role to support new features that come out. Which historically there have been things that have been rolled out which we then have customers writing in about, but we're like "oh no we don't know what this is. We just heard about this this morning." So product launch and readiness, which still qualifies as an IT role, product operations, project management is where I see myself working towards.

Interviewer: Ok. Can you share an example of the work you do that best captures the essence of the IT industry?

Interviewee: Oh that's very broad, the entire IT industry. I think a lot of people when they think of IT they do think of, you know, they think of the experience that is portrayed in like the IT Crowd, calling helpdesk. People don't think of IT and they think of network managers or systems admins, they literally think of support people. The nerdy IT guy, you know the, of those, Nerds 2 You, those sort of businesses. That's what people think of when they think of IT. So I guess we have customers that for whatever reason their team gets downgraded because of a billing issue, I don't know if it necessarily captures the whole essence of the IT industry, but just the sense of like thanks and relief that customers then portray when we are able to fix something for them. They're then able to plod along and then I don't hear from them for 6 months. I think that, captures an essence of the IT industry. Maybe also the sense that people only really think of IT when something is wrong. And the hallmark of any good IT provider, or any sort of IT operation, is people not knowing you're there. People not really thinking about IT, which it is in and of itself, is a good thing because people only tend to speak up when there's something wrong and they're complaining. Also potentially a negative thing if, when it comes time for IT departments to want to upgrade things, and it's like "oh but everything is working", like it's easier to justify spending lots of money on something when it's broken. I guess it's a double edged sword... I guess every sword has two edges, I don't know the saying. But you know, like there are two sides to it, but yeah, that relief and thankfulness when things go back to working and you don't hear from them for 6 months is at least from my perspective, I think that captures at least part of the essence of the IT industry.

Interviewer: Definitely. Well, thank you for letting me interview today.

Interviewee: You're very welcome.

Interviewer: I'll let you get back to work.

Interviewee: Only if you have to.

IT TECH

# Autonomous Vehicles

*What are Autonomous Vehicles?*

Autonomous vehicles, also known as 'driverless cars' or 'automated vehicles', are vehicles that offer the automation of tasks that we associate with driving; vehicle automation can be registered on a scale of zero to five (NHTSA 2020):

- **0. No automation** - A human driver performs all driving tasks.
- **1. Driver assistance** - A single automated feature is offered; for example, Cruise Control
- **2. Partial automation** – Features Advanced Driver Assistance Systems (ADAS) that enables the vehicle to perform steering and acceleration; however, a human is still required to monitor the vehicle and can take control at any time.
- **3. Conditional automation** - Offers environmental detection capabilities that enable the vehicle to perform most driving tasks; human override is still required.
- **4. High automation** – Enables the vehicle to perform all tasks without human interaction; human override is still an option.
- **5. Full automation** – A vehicle is considered fully automated when it is able to perform all driving tasks without the need for any human interaction or attention.


**Figure 1.** *Society of automotive engineers (SAE) automation levels* by NHTSA, 2020.

Today, the most common form of automated vehicles are new cars that offer conditional automation (level 3) features, such as environmental detection capabilities that can perform most driving tasks which includes accelerating, braking, turning or changing lanes. These tasks are delivered via a computer system but still require human override (NHTSA 2020).

Although high automation (level 4) vehicles are currently not available to the everyday consumer, there has been significant development in the deployment of these vehicles. Due to current limitations on legislation and infrastructure, the development of these vehicles has predominately been geared towards shuttles, ridesharing and robotaxis. A small number of these vehicles are currently operational around the world, including Western Australia (NHTSA 2020).


**Fig 2.** *Intellibus* by RAC, 2020.

When it comes to the technology behind the automation, most companies that currently deploy conditional and high automated vehicles use the same base level of technology.

This technology includes:

- **Machine Learning**: A type of Artificial Intelligence that uses a computer system that utilises a combination of algorithms and statistics to find patterns in data. These systems can then use that data to learn, adapt and make decisions without the need for human intervention (IBM 2020). Machine Learning provides the vehicle the ability to collect and interpret data on its surroundings based on information provided by cameras and sensors. This vehicle then uses this information to decide what actions to take.


**Fig 3.** *Machine learning* by Dohmse, 2015.

- **LiDAR:** A detection system that uses light pulses from a laser to measure variable distances (NOAA 2021). LiDAR provides autonomous vehicles the ability to 'see', in the sense that it provides a 360-degree view of its surroundings. This is done using a continuously rotating LiDAR system, allowing the vehicle to detect obstructions, avoiding collisions and resulting in a smoother ride.

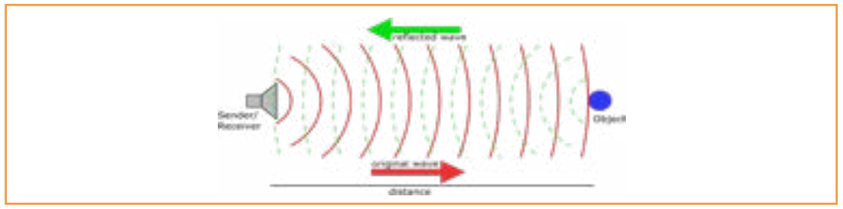


**Fig 4.** *Distance* by Cameron, 2017.

- **Ultrasonic Sensors:** A sensor that gauges the distance between objects by using high-frequency sound waves and measuring the time between emission and reception (Maxbotix 2021). Similar to LiDAR, ultrasonic sensors allow the vehicle to detect obstacles, however, unlike LiDAR, it provides the unique ability to see through objects, making them ideal in bad weather (Medium 2020).

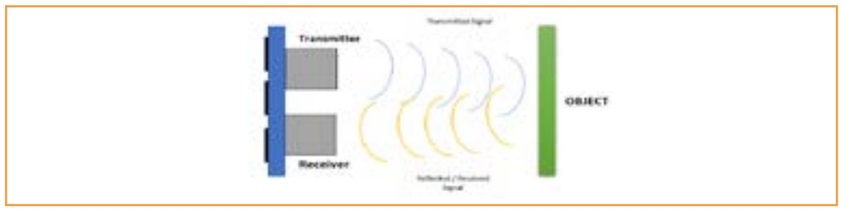


**Fig 5.** *Ultrasonic sensors* by Aquib, 2020.

- **Radar:** A system that uses electromagnetic sensors to detect, locate, track and recognise objects at variable distances (Britannica 2019). Radar allows autonomous vehicles to monitor the position of nearby vehicles.

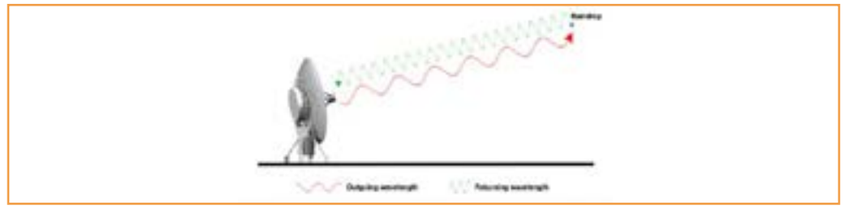

**Fig 6.** *How does radar work?* by EOL, n.d.

- **Cameras:** A device that uses a lens and light to capture an image (Britannica 2021). Cameras are placed on every side of an autonomous vehicle to provide a 360-degree view of its surroundings.

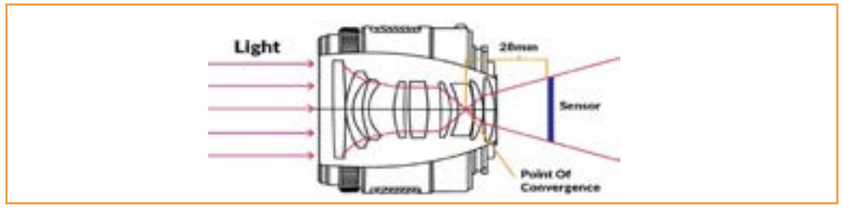


**Fig 7.** *How does a camera work?* by Holtzer, n.d.

### *Impact of Autonomous Vehicles*

As these technologies change and adapt, we will likely see fully automated (level 5) vehicles in testing phases over the next few years resulting in more accessibility for the everyday consumer. The overall impact, be that positive or negative, will be significant.

### *Impact on Jobs*

The implementation of autonomous vehicles will most likely make drivers redundant; perhaps the most obvious jobs affected would be the drivers of ridesharing services such as, and not limited to, Uber or Lyft. Globally, there are currently over 3 million drivers working for Uber alone and, on average, each driver earns around $364 per month (Blair n.d). By removing the need to employ drivers, Uber can potentially cut their running costs by over $1.3 billion.

The Department of Industry, Science, Energy and Resources (DIIS) has suggested that as technology changes and evolves, there is also the potential for employment growth across several sectors in both existing and potentially entirely new industries; these industries include manufacturing, mining and agriculture (Parliament of Australia 2017).

### *Environmental Impact*

Most companies developing autonomous vehicles are doing so with the aim to utilise electric vehicles as opposed to hybrid or combustion engine vehicles. It is estimated that using electric vehicles would reduce the amount of harmful greenhouse gas emissions by around 60% (Elezaj 2021). There has been some debate amongst researchers concerning whether an all-electric based autonomous vehicle will lead to significantly increased power needs and, as a result, autonomous vehicles would need to be gas-electric hybrids (Brewer 2020).

### *Safety Impact*

It is estimated that 90% of all fatalities on the road are directly attributed to human error (NRSP 2013). These errors include speeding, driving under the influence, and distractions in and out of the vehicle such as mobile phone use or exhaustion (NRSP 2013). Globally, 1.3 million people are killed in road accidents every year (WHO 2020). Australia alone reports an average of 1000 fatalities annually (BITRE 2020). Autonomous vehicles provide the ability to remove manual driving controls altogether resulting in the eradication of all fatalities attributed to human error (NHSA 2020).


**Figure 8.** *Road deaths: 12 month total Australia* by BITRE, 2020.

*How Will This Affect You?*

Personally, the implementation of fully autonomous (level 5) vehicles at a consumer level will have a significant impact on my life. As an epileptic, although medically cleared to, I do not drive due to the potential risk imposed on myself and others. To go from place to place I rely heavily on friends, family, and public transport. Autonomous vehicles have the capability to not only create safe driving environments but also provide me with a steady, reliable and independent mode of transport.

Without the need for a driver, these vehicles also have the potential to assist friends and family members who are new parents or have young children. Parents and caregivers will be able to focus all of their attention on those inside the vehicle without having to be concerned about potential distractions both inside and outside.

With the ability to eradicate human driving errors, autonomous vehicles have the potential to not only make roads safer for drivers but also pedestrians. This is especially significant to me as my father was fatally struck by a speeding vehicle in 2018.

Overall, the implementation of autonomous vehicles into society is largely positive but does, however, come with many drawbacks. As we are several years away from a fully autonomous vehicle becoming a staple in everyday life, the companies developing them have time to address these concerns with their ever-changing and adaptable technologies.

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# Blockchain & Crypto

*What is the state of the art of this new technology?*

Cryptocurrency and blockchain technologies have been on a rapid rise for some time now and there seems to be no indication that this is slowing down anytime soon. The core concept behind the use of such technologies is the transference of all transactions onto a digital space that allows users the freedom to perform such transactions from anywhere around the world without having to bypass the control of a mediator (Shrivastava et al. 2020). This means that any finances, contracts or records you wish to store or transfer, occurs across a global and decentralised platform; this essentially shortcuts the process and negates the need to bypass traditional means such as a bank or other intermediary organisations, or potentially risk having it monopolised by government authorities and corporations (Nasir et al. 2021; Shrivastava et al. 2020).

Taken broadly, the blockchain can be viewed as the tool or principle, often likened to that of a database, that allows cryptocurrencies to thrive (Conway 2020; Marr 2021; Shrivastava et al. 2020, p. xxi). However, unlike a database which is formatted as a table, a blockchain network utilises 'blocks' to accumulate information or data which, when filled, is then linked up to the last block to create the 'chain', thus 'blockchain' (Conway 2020). The blockchain is built chronologically and is unable to be retrospectively altered, which is part of the reason why it is considered secure, as there is a transparent and ordered history of all transactions ever made (Conway 2020). Blockchains can store different types of information, however, to date, they have most commonly been used for cryptocurrency ledgers for transactions, the most successful being Bitcoin (Conway 2020; Economic Times 2021).

It is somewhat necessary to allude to Bitcoin when explaining what cryptocurrency allows us to do. This is perhaps due to the significant role Bitcoin has played in pioneering the momentum of crypto, as well as blockchain popularity, since its inception back in 2008 (Built In 2019; Conway 2021).

Back then, the anonymous creator/s of Bitcoin, alias Satoshi Nakamoto presented the world with a computer algorithm referred to as 'a new electronic cash system that's fully peer-to-peer, with no trusted third party' (Conway 2020). This new form of currency takes the form of a 'coin' or a 'token' whereby the 'crypto' refers to the complex cryptography attached to the digital currency and relative de-centralised transactions (Built In 2019). Digital currencies that are then adapted after Bitcoins are called 'altcoins'; altcoins fundamentally work in the same way but were designed in an attempt to improve and refine the functionality and efficiency of Bitcoins, however, it seems that none of these alternatives seem to be as secure as Bitcoin's processes (Built In 2019). This is in part due to the fact that security is dependent on the number of users; the more users the more secure the network becomes (Hammer 2021).

*What can be done now?*

Today, Bitcoin being the largest cryptocurrency has a value over $1 trillion and is still the most popular digital currency (Economic Times 2021), and again, trust and security are hypothesised as being the most attractive aspect of the Bitcoin economy compared to its alternatives (Economic Times 2021; Hammer 2021; Nasir et al. 2021, p. 993). Bitcoin runs through a process of ongoing validations and effectively logs these validations onto the blockchain, called 'mining the blocks' (Hammer 2021). A timestamp, otherwise called a 'nonce', is attached to the block as well as a citation of the previous block using a unique cryptographic fingerprint called a 'hash' (Hammer 2021). In order to create each individual block on the blockchain, miners must decode the hash algorithm in order to confirm a transaction as legitimate - a process called 'proof of work' (Hammer 2021). Building upon this, and to make the process even more efficient, 'proof of stake' came into realisation and was presented as an alternative whereby the miner can only mine whatever amount they have staked in the cryptocurrency; for example, if a miner holds 2% in Bitcoin, they are only limited to mining 2% of the blocks (Hammer 2021). In this case, security is premised

on the fact that if someone had a financial stake in Bitcoin they would only act out of self-interest (Hammer 2021).

Additionally, Bitcoin works on a decentralised platform formed by a vast network of computers, referred to as 'nodes', which transparently records the history of all previous transactions (Conway 2020). In the case of hackers, this means that if someone wanted to corrupt the system, all the nodes in the network would cross-reference and be able to nullify the corrupted record and copy, or 'fork' off, into a new chain that would make the previous one useless (Conway 2020). Essentially, Bitcoin was built to ensure that it is more economically viable to participate in the system than to break it (Conway 2020).

*What is likely to be able to be done soon?*

Blockchain capabilities are not limited to cryptocurrencies. Currently, research is being done on a global scale, to utilise blockchain technologies for uses beyond the financial sector – see Figure 1 (Conway 2020; Shrivastava et al. 2020, p. xxi; Nasir et al. 2021).

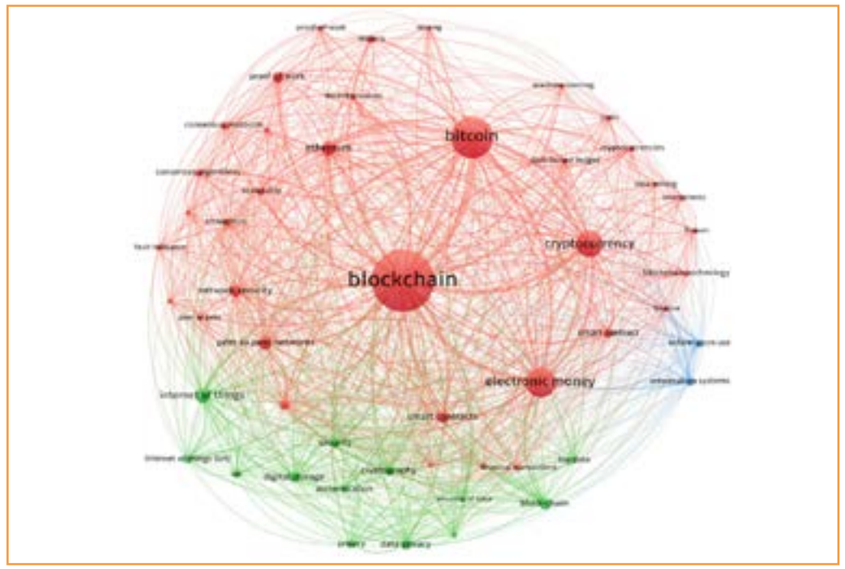


**Figure 1**. *Co-occurrence network infographic depicting current research* by Nasir et al., 2021.

Bitcoin, one type of cryptocurrency, uses blockchain to document transactions, however, blockchain can also be potentially utilised to record other types of information or data such as, and not limited to, electoral votes, smart contracts, healthcare records, vaccine distribution and tracking, supply chains, even perhaps Internet of Things and more (Conway 2020; Marr 2021; Shrivastava et al. 2020).

*What technological or other developments make this possible?*

The current state of affairs sees a multitude of companies allowing the authorisation of cryptocurrencies as an alternative payment method. For example, on 30thMarch, 2021, PayPal launched its 'crypto checkout service' so that U.S citizens can convert bitcoin cash or litecoin into fiat money to purchase online goods and services (CNBC 2021). Similarly, Elon Musk announced the allowance of Bitcoin to be used to purchase Tesla vehicles whilst corporations such as Visa have announced their investment into Ethereum, second largest cryptocurrency to Bitcoin (Ponciano 2021).

It is also important to note here that such developments may come to a stop due to governments and other authority figures catching on to regulation surrounding the legalities of cryptocurrencies (Ponciano 2021). However, currently Bitcoin and other cryptocurrencies are somewhat unregulated globally - see Figure 2 (Nasir et al.2021).

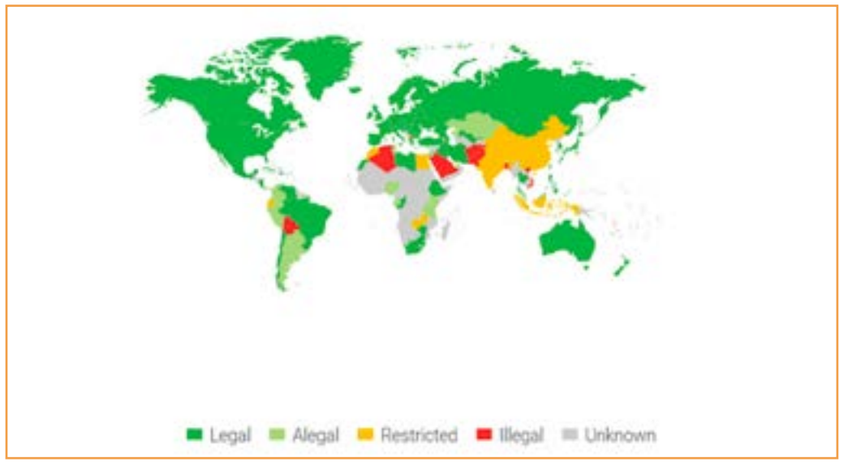


**Figure 2.** *Global map depicting where Bitcoin and other cryptocurrencies are legal* by Nasir et al., 2021.

*What is the likely impact?*

If blockchain and cryptocurrency were to become the most widely used method for transactions, this could significantly impact a variety of sectors such as: politics and governance; banks and corporations; as well as a need to develop or invest into more sustainable and renewable resources which we are already urgently in need of (Shrivastava et al. 2020).

While the crypto industry is arguably useful for many as it allows us to borrow, lend, and invest more equally, securely and efficiently, it also generates some crucial issues in terms of regulation and accountability (Nasir et al. 2021; Salami 2020). Due to the decentralized nature of cryptocurrencies, say Bitcoin or DeFi, it is unclear how authorities would be able to determine who is accountable for any security lapses (Salami 2020). Furthermore, if any of these cryptocurrencies were potentially hacked anonymously the entire network would disintegrate (Salami 2020). Another regulatory issue here is that, again, due to its global framework, people might gravitate towards countries that have lesser regulatory governance than their own (Salami 2020). Perhaps most difficult of all is the ability for governments and authorities to effectively regulate cryptocurrencies at all?

It is also necessary to underline the affects this might have in the business and financial sector. The problem here is that while it may seem attractive for society to no longer have much of a need for intermediaries, such as banks and other financial institutions, the job loss in this sector would be immense. If such a speculation becomes the new global reality, it would take a while for society to be able to adapt to such changes; for example, if you look at the history of when automobiles were first introduced into the market (History.com Editors 2018).

Of equal importance, the rise of cryptocurrencies creates a complex web of environmental concerns. Blockchain and cryptocurrency usage leaves us to question whether this will severely impact climate change as well as our dire over-reliance on non-renewable resources such as coal (Howsan 2021). While Bitcoin is already heavily scrutinized for its contribution to carbon emissions, as further energy is needed to power up more and more computers and systems, Bitcoin also specifically uses a hardware called 'Application Specific Integrated Circuits' which are often discarded and re-placed yearly; '[redundant units create around 11,500 tonnes of hazardous electronic waste each year, much of which is dumped on cities in the global south' (Howson 2021, para. 7). Even with all these issues being raised, it does not seem like Bitcoin investors have all taken to clean energy as currently '61% of bitcoin mining is powered by fossil fuels' (Howsan 2021, para. 8). However, there are some alternative cryptocurrencies that are notably greener, such as Ethereum, in which proof-of-stake is primarily utilised and thus moving away from mining and hardware replacements (Howsan 2021).

*How will this affect you?*

In summary, the most alluring aspect of blockchain and cryptocurrencies is the decentralised nature of being able to manage and invest my finances over the internet. In my daily life I tend to do all my banking or transfers online. Even then, the transfer of funds, especially internationally, is nowhere near as efficient or as secure as it could potentially be - not to mention it is also heavily monopolised by financial institutions. Additionally, due to external mechanics such as inflation, my savings pretty much sits in the bank and slowly devalues over time; if I were to invest a certain amount of my savings into a cryptocurrency, obviously weighing up the pro's and con's as well as the risks involved, it would be much more economically beneficial for me in the long run.

This will be relatively similar for my family and friends. From my knowledge, some of my family and friends still rely on more traditional means of banking and opt to physically make their way over to a bank in order to perform their transactions. While it may seem arduous to do so, it is understandable that some may feel a lack of trust in transferring of funds over the internet. As with most things, it will take a while for society to be comfortable with such changes and to believe that a new way could be better. In saying that, it is not without an undertone of scepticism that perhaps sometimes we implement changes so fast before we even realise what we have created and what to do about it.

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# Cloud, Services & Servers

A server is a computer or a program that provides all kinds of information to other computers over a network. Any computer utilising the right software and hardware could become a server. There are various methods to form a server in computer networks such as peer-to-peer networks, which involves two or more computers accessing individual resources, such as a hard drive or a printer (Best 2016, para. 2).

The Cloud refers to servers that are accessed over the internet as well as software and programs that run on those servers. Cloud also refers to the use of multiple computers and servers connected via the internet. This allows exchanging data as part of programs or services. We can use multiple computers to achieve complex tasks. This reduces the operating costs of the servers as it runs over the internet rather than on an individual computer server (Probrand n.d., para. 2).

### *Cloud Services*

Cloud computing services run on a worldwide network of servers that are secure, reliable and fast. They are usually upgraded to the latest generation of computer hardware; this is beneficial over a single computer data server as it reduces network latency, and it has the potential for greater economic scale. These servers are isolated from our environment and thus reduces software and hardware issues. Any other cloud server user won't affect your cloud server; for instance, if another user overloads their cloud server it won't affect your server (Probrand n.d., para. 3).

Most cloud computing services fall into four categories (Microsoft Azure n.d., para. 4):

- **Infrastructure as a service**: It is the most basic category of cloud computing services. With this service, you can rent IT infrastructure from a cloud provider and pay as you go, if you need it.
- **Platform as a service**: This service provides an on-demand environment for developing, testing and delivering your software. It has been designed so that developers can easily and quickly create web or mobile apps.
- **Software as a service:** It is a method for delivering software or servers over the internet. It is usually subscription-based and on-demand access for users.
- **Serverless computing:** This cloud service lets developers focus on developing applications without spending time managing servers or infrastructure. The cloud will handle the setup and management of the server for you.

Cloud servers are more stable, scalable and usually avoid hardware issues resulting in reduced IT budgets needed to run them. Cloud computing is a big step forward from the traditional way businesses are run in the IT industry. Many cloud-based service providers, such as Microsoft Azure, let users host the web, share data and use software or applications requiring no knowledge about servers or how they operate (Microsoft Azure n.d, para. 2).

### *Future of Cloud Technology*

It is not hard to predict that data generating in high volume every day by the companies and enterprises need larger servers. it is difficult and sometimes impossible to store them with security and integrity on their on-site physical servers. Most businesses require a server where they can store a large amount of data that they are generating each day, safely and securely. More and more enterprises are using cloud servers that will provide larger data centres with a lower budget rather than running physical on-site servers. Cloud services help to store data for companies by increasing their data centres at lower prices to accommodate the need for large data centres by companies and businesses (DataFlair n.d., para. 4).

Between the year 2018 and 2021, worldwide spending on public cloud services has grown from $160B to $277B which is a significant growth in the adoption of the cloud and its services. Bart McDonough, CEO of Agio, believes the recent rapid adoption of cloud is mainly due to the understanding of 'ease of use and scalability' of the technology (Saleem 2020, para. 1).

### *Virtualisation*

Virtualisation is the use of software to create an abstraction layer over the computer hardware to use elements of a single computer, to be divided into multiple computers. Each virtual machine runs its operating system and acts as an independent computer, even though it is running on just a portion of the actual computer hardware. Virtualisation allows more efficient utilisation of the physical computer hardware and allows a greater return on hardware investment. Cloud computing is a possibility due to virtualisation. By virtualising servers, storage and other physical data centres, cloud computing can offer virtualised servers that can be configured based on requirements needed, which speeds up IT operations and reduces costs by increasing infrastructure utilisation. As a result, this automation speeds up the process and reduces labour costs and human errors (IBM 2019, para. 1).

### *Impact of cloud computing*

Cloud computing will ultimately replace the legacy system of IT business operations. Already 94% of enterprises use cloud services and 30% of all their budgets are allocated to cloud computing (Galov 2021, para. 2).

Impacts on the IT industry (Ahmad Dar 2018, p. 1):

- **Cost reduction**: Cloud technology reduces the expenses as they are only acquired when it is required hence lowering the initial expenses and maintenance costs.
- **Unlimited scalability:** Cloud technology allows for the clients to scale up or even scale down as per their requirements. There is no need to worry about the demands as it is very easy to acquire additional services.
- **Flexibility:** Cloud technology allows clients to decide which service they need and pay for accordingly, if any application provided by the cloud is not doing what the client needs, it is easy to switch to another cloud service provider.
- **Reliability:** Cloud services are available all the time and they can be accessed anywhere using any device. Cloud services usually include backup and recovery management service which makes this technology more reliable.

With all the positive impacts in mind, there is a potential of wafting away of software in near future which means that, with excessive advancement of cloud computing, the applications become hardware-agnostic and make computing completely invisible (Durrani 2019, para. 10).

### *Cloud impacting everyday life*

Cloud computing affects our life socially, the likes of YouTube and Google are proof of how people act and interact with others. From remote locations to the global centre stage, an event can reach all around the world by going viral. Anybody can report on events. Live news feeds are constantly streaming media. Keeping up with friends and family has never been easier (Ferkoun 2013, para. 2).

Cloud technology also offers other benefits to developing countries allowing them to run inexpensive databases that are readily available in the cloud which helps them to develop better infrastructures. For instance, the use of Cloud technology in the healthcare industry allows medical professionals to check patients' status and follow-up with their treatments resulting in reduced operational costs and the removal of human error (Ferkoun 2013, para. 7).

### *Impacts of cloud computing on my life*

Cloud computing affects my life as it does to everybody else. As a student, I can enrol on my classes online from anywhere and anytime, access class information on my phone anywhere and attend my classes online as well as participate in group activities. I can also pay my tuition fees online and get my payment confirmation in seconds. As for entertainment, watching

Netflix and having access to thousands of movies and tv shows on my phone or smart tv as well as playing video games which I can download and play without the need of any physical copy of the game, are all impacts of cloud computing on my personal life (Ferkoun 2013, para. 2).

Cloud makes a huge difference in my day-to-day life, I can connect with my family and friends, using Facebook or other social media platforms, without the need of meeting them physically or leaving my house. I will have access to all the restaurants near me to order food and have it delivered to me. With the likes of iCloud, I can purchase an application on my phone, and have it downloaded on my iPad or continue what I have been doing on my computer or on my phone.

Director of Empower IT Salim Sukari says, 'It really is impossible to avoid the cloud. It has become so prevalent in daily life that it exists and is used without us even knowing it. Many of everyday life's conveniences are in one way or another connected to cloud technology. Yet, many small businesses don't always equate this prevalence in everyday life to its business potential. However, once you understand how the cloud has improved daily life' (Baker 2016, para. 11). In fact, the cloud has become so pervasive that sometimes we don't even realise that we are using it.

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# Machine Learning

*What does it do?*

Alan Turing was the first to propose that should a digital computer be capable of imitating the behaviour of a human to a degree it was indistinguishable from an actual person, it could reasonably be assumed to be exhibiting 'intelligence' (Turing 1950). Despite our efforts and technological advancements in the seventy years since, no AI has come close passing the so-called Turing Test; mostly limited to narrow domains (Panova 2021) and lacking the capacity to make causal inferences (Dickson 2021), modern AIs are simply not yet capable of replicating the complexity of human behaviour.

Having said this, the goals of the field pioneered by Turing have perhaps shifted from imitating human behaviour, to augmenting human intelligence (Pretz 2021). Machine Learning (ML) is a branch of AI focused on how machines can employ experience to improve and adapt. By analysing massive data sets, ML is providing ways to improve human understanding by combining data from a wide range of sources, detecting patterns within this data, and suggesting potential responses (Pretz 2021).

In supervised ML, a machine is provided with an algorithm, based on statistical modelling, as seen in Figure 1 (Soni 2018), which it uses classification or regression to make 'decisions'; using the ML's output, developers then refine their algorithms and continue this iterative process from the beginning (Soni 2018), continually improving the machine's capacity to accurately interpret and respond to information.

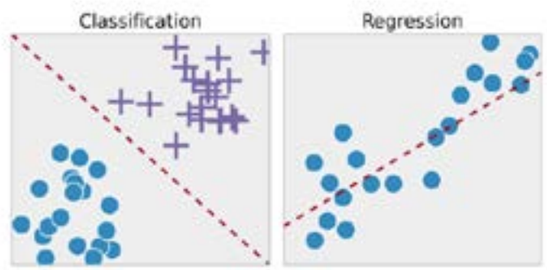


**Figure 1.** *Supervised learning* by Soni, 2018.

In effect, in ML a computer learns in similar fashion to a human, through the experience of making mistakes, and consequently discarding incorrect assumptions. Unlike supervised ML, unsupervised ML does not aim to make predictions based on present knowledge; rather, its purpose is to analyse data for patterns hitherto undetected, as illustrated in Figure 2 (Soni 2018), and the machine is at no point provided with corrections (Li 2021). In this sense, unsupervised ML is exploratory in that it is unfettered by current human understanding, creating avenues to expand our knowledge.

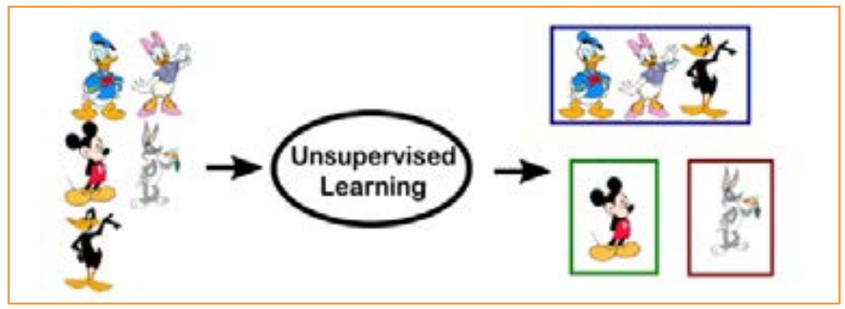


**Figure 2.** *Unsupervised Learning* by Soni, 2018.

Given society's ever-increasing reliance on data, ML has become vital to modern-day economies. From autonomous vehicles and robot-run warehouses, through to the analysis of customer data and fraud detection, ML is impacting the lives of billions of people globally. Perhaps the most well-known use of ML occurs in driverless vehicles, which are currently using neural networks to classify objects, predict other driver's actions and efficiently navigate to destinations; with their ability to process data more than 1GB per second, such systems are analysing their surrounds with

much greater accuracy than vision-based systems (Ors 2020). Leveraging the statistic that eighty per cent of people prefer personalised shopping experiences, retailers are increasingly employing ML alongside visitor profile data to create targeted promotions and customised experiences for their patrons, managing their stock and retargeting people who did not make a purchase but are open to persuasion (Gray 2020). Similarly, entertainment companies are using ML to present relevant content to their customers while the banking and finance sector utilises similar techniques to analyse consumer sentiment and, in turn, make predictions about investment risks and returns (Gupta 2021). In the field of healthcare, researchers are using ML algorithms to create knowledge graphs, predict interactions between molecules and drugs, and explore the efficacy of new medications; this means that pre-phase trials are often avoidable and thus increases the rate at which new treatments become available (Anadiotis 2021).

ML has many potential near-future applications especially as quantum computing becomes a reality and the speed at which large volumes of data can be processed increases. For example, IBM's Green Horizon's project is attempting to analyse data from thousands of sources by using ML to predict changes in weather and pollution patterns (Tarantola 2017); such analysis could be soon employed to help combat issues such as climate change. To tackle the rising problem of ageing populations around the world, ML is being developed for care-giver robots to give them the ability to understand their user's preferences and thus provide them customised support (Tarantola 2017). Facial analysis technologies using ML algorithms have already proven more successful than clinical experts in identifying certain genetic syndromes (Gurovich et al. 2017) and will likely be able to diagnose a greater number of conditions with even more accuracy in the coming years. Especially relevant following recent events, there is likely to be a vast improvement in the capacity of AI to predict outbreaks of disease; in fact, BlueDot's AI was one of the first to send alerts about the COVID-19 outbreak in December 2019 (Marr 2021). Undoubtedly there will be an increasing reliance on ML algorithms to identify and predict cybersecurity threats too. As the Internet of Things increases in scope and penetration more data will be available thus enhancing the potential for ML to automate industrial and business processes (Whiting 2020).



## What is the likely impact?

ML has the potential to fundamentally change the ways in which we live and work. These changes could have both positive and negative effects especially if ML is left unregulated or is misused. Many processes will inevitably become automated as the accuracy and safety of ML systems improves. Autonomous vehicles may provide safer, more efficient and more economical transportation, but at the cost of jobs. Likewise, automated industrial and retail processes will probably improve both production and logistics while increasing the need for a better educated populace as the manual labour market contracts. In catering for inherent human laziness, ML may indirectly and detrimentally affect peoples' health given that there will be less need for individuals to leave the house, perform physical activities or interact with others.

As aforementioned, ML systems could also have numerous benefits for the health of society such as through the expedited development of medications, early diagnoses of medical conditions and the prediction of viral outbreaks. Additionally, ML could improve safety for everyone through detecting and preventing online fraud, identifying and tracing people suspected of committing crimes and replacing people in dangerous occupations - such as police officers or soldiers.

However, these benefits do not come without their associated risks. Too much trust in the perceived infallibility of AI and ML may lead to medical treatments being approved for widespread use without having undergone sufficiently rigorous testing. In the fight against crime, it is not clear how much individual privacy would need to be sacrificed to use ML defence systems. Many ethical issues arise from the concept of AI and ML in law enforcement and warfare, not in the least the problem of accountability; for instance, if an AI or ML system uses lethal force to prevent a crime but is later found to have acted unduly, who or what is responsible for this negligence?

For all the convenience and benefits ML promises it is vital to be cognisant of its potential risks especially those related to privacy. As businesses continue to employ ML to target consumers, security agencies develop facial recognition and other biometric processing software, and political parties

turn to algorithms to influence elections, it is worth noting that such techniques are only viable with access to a large pool of peoples' data. Data breaches have and will continue to happen leaving everyone vulnerable. It is also worth considering the impact of ML on those living in poverty. Though ML has the capacity to further democratise knowledge and reduce the cost of goods and services through automation, will vulnerable people benefit or simply become a mine to exploit for data-seekers? If such people do not have the same level of access to ML technologies, will they be left even further behind? As ML engineering pioneer Michael I. Jordan has said, we must think of ML as a 'humancentric discipline' which has the potential to 'deliver value to humans [rather than] amplify inequities' (Pretz 2021, para. 7 & 18).

*How will this affect you?*

I expect ML will eventually decrease the number of things I need to do manually and increase the efficiency of tasks I still need to complete, all of which will provide me with more free time. Of course, this will bring both advantages and potential hazards. On a daily basis I will be required to store and recall information less frequently as everyday activities such as driving, planning meals and organising one's finances becomes automated. This may lead to slight cognitive declines which could easily be offset through increased time to, say, read. With improved retail and logistics systems I would also be able to find what I need and have it delivered with more convenience, again, increasing the time I have available to engage in other pursuits; sadly, though, this could lead to a decrease in the time I spend interacting with others.

Professionally, as an authentication analyst, I predict that many tasks I now perform will be automated using ML technologies. This will greatly reduce my stress at work leaving me with more time to focus more important assignments and should eliminate the errors I naturally make on occasion. There is, however, the possibility that ML could eventually put my employment at risk; this consideration has led me to upskill through education, so ML, in a real sense, is already affecting my daily life.

I hope advances in ML will bring benefits to my family, who are all residing overseas. Cheaper modes of transportation brought about through autonomous vehicles may mean we are able to visit each other more often. I also hope that ML will help my ageing parents remain healthy through medical innovations, accurate diagnoses of illnesses and the provision of automated assistance for everyday tasks. Though I have some concerns regarding the privacy issues surrounding the increasing adoption of machine learning by businesses and governments, I believe the technology will ultimately benefit people like me.

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# PROJECT IDEA

*‘As a team, we are all passionate about gaming culture and eager to learn to develop and play games. At the same time, it is important for us that the project we are going to build is feasible and achievable by the due date; learning the basics of unity engine and C# programming language is a great starting point for the group’*
*- Code Cats*

# PROJECT IDEA

## Overview

This is a 2D side scroller game that will be designed using Unity engine and will features the following:

- Platformer design
- Side world view
- Single level
- Single player
- A playable character
- Health bar and score system
- Enemies
- Time-based reward system
- Rewards stored locally

Code Cats 2D will run across PC, Mac and Linux platforms. The game will provide one-click deployment with no installation required. The playable character will always remain in the middle of the display while the background moves forward or backwards. The camera is set to a side world view and the focus is on the main playable character. Upon completion, the player will receive a special congratulatory message based on their time and score.

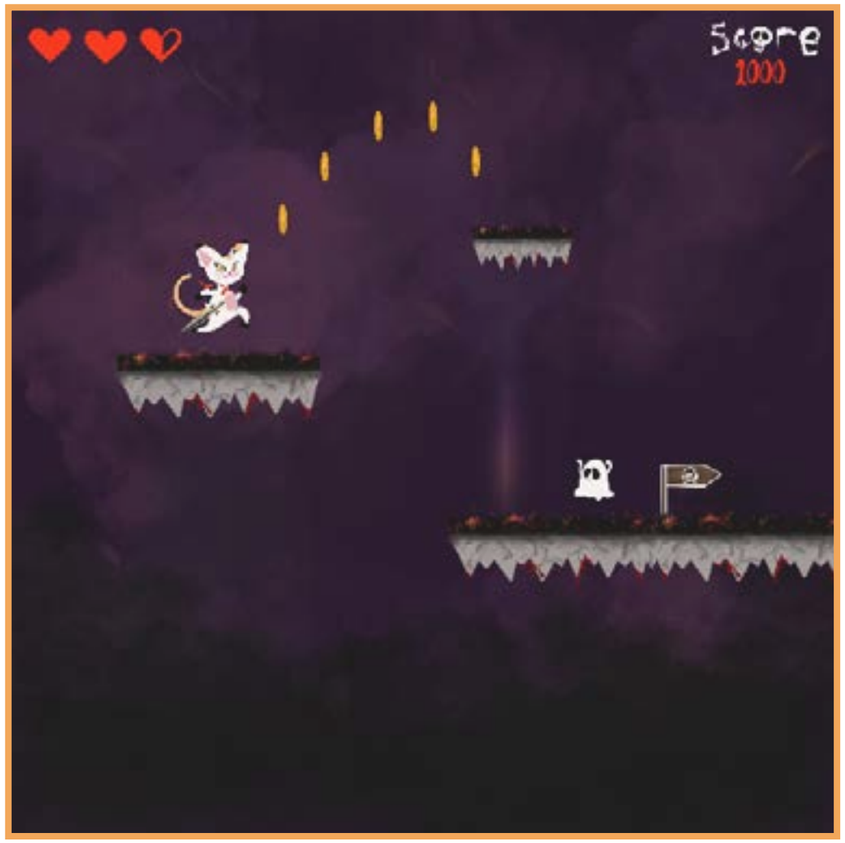
## Motivation

The gaming industry has gained a lot of cultural significance throughout the past decade. Games have matured and have extended their relevance to incorporate how we live, study and even work. Games no longer have any relevance to how old someone is anymore, and this growth of culture is increasing the demand for games to be developed for people of all ages (Yao 2018). There are hundreds of large AAA video games available to date but there is still a demand for 2D games for good reasons, especially when it comes to mobile games.

On the Apple App Store, the top paid games section has more than 50 2D-titles in the top 100 games available on the store. Even some major AAA titles develop 2D versions of their title for the mobile which proves 2D games are not irrelevant yet even in 2021. As the gaming industry grows there will be a higher demand for games developed for mobile; this is largely due to the transition towards wireless technologies and the convenience of keeping ourselves entertained wirelessly without having to be sitting in front of our televisions or personal computers - especially for people who enjoy their games on a mobile device.

## Description

Code Cats 2D is a platformer, side scroller video game designed and developed using Unity engine. The gameplay is viewed from a side view angle featuring a single level design that is rather challenging to complete. It features a main character that will remain in the middle of the display whether you move forward or backwards, meaning moving the character will move the background.




### *Level Design*

The level is that of a platform game, in which the playable character is only allowed to run and jump on the platforms. Falling off of the platforms will otherwise result in character death which, depandant on player choice, will restart the game, or trigger game over.

The level has been designed to challenge the players, and it gets more and more challenging as the players get closer to the end of the level keeping the players engaged and motivated as they overcome challenging obstacles across the level.

Enemies will be placed across the level mostly in tricky positions. These enemies will have the ability to move and hit the playable character. The enemies can be seen or hidden depending on where they have been placed in the level. For instance, enemies to be placed inside a tunnel where both playable character and enemies are hidden from the camera. The appearance of each enemy may vary.

Coins and special coins will be placed all over the level mostly in hard-to-reach places aiming to challenge players and motivate them to get all the coins and beat the game. Hidden platforms exist across the level containing special coins for the players who dare to explore Code Cats 2D.

### *Playable Character*

The main playable character will have the ability to run (forward or backwards in case any coins are missed) and to jump over obstacles and enemies, that are placed across the level mostly in tricky situations. Jumping on top of enemies will kill them and grant the players points, which are then added to the scoreboard. Similarly, touching enemies will result in losing health and eventually death if the health bar is completely depleted.

Running or jumping through coins and special coins will add them to the player total, in turn updating the scoreboard.

### *Game design*

The game has a time-base reward system in which if you beat the game with less time the reward you get will be better.
Upon completing the game, the player will receive a special message based on their score congratulating them on completing Code Cats 2D.

The game is over when the playable character is dead, alternatively, it can be restarted if the player chooses to try again.

The scoreboard and player best records will be stored locally on an XML file within the game data. Upon deleting the game, all the saved data will also be deleted.

### *Animation*

Certain elements of the game have animations. These animations will give the game more depth and feel. Elements will only animated when visible, to increase performance.

Elements to be animated are as follows:

1. Main playable character:
1.1. Walking animation
1.2. Jumping Animation
2. Enemies:
2.1. Moving animation
3. Coins:
3.1. Rotating animation
4. Background
4.1. Sky and Clouds move as the character starts moving around

### *Sound*

Elements have sound effects to create tension and add emotion while building immersion in the game.

Elements to have sound effects are as follows:

1. Main playable character:
1.1. Falling off a platform
1.2. Touching an enemy
1.3. Collecting coins
1.4. Completing the game
2. Environment:
2.1. Theme music for the game track
3. Enemies:
3.1. Sound effects
4. Beating the game
4.1. Based on time and score, a different special sound effect is triggered



## Technical Specifications

- The game is to be run on PCs, Macs and Linux based operating systems that support the latest versions of macOS, Windows 10 and Linux OS.
- Minimum hardware and software to support (Unity Documentation, 2019).

### *Software:*

- Operating system:
- Windows 7 SP1+
- macOS 10.12+
- Ubuntu 16.4+

### *Hardware:*

- CPU: SSE2 Instruction set support
- GPU: Graphics card with DX10 (Shader model 4.0) capabilities

### *Game design specifications:*

- The game is to be developed using Unity 2D template
- Scene view: Side world view
- Platformer design

### *Animate functionality:*

- Running, jumping, falling and moving
- Dying when hit by an enemy
- Rotation of the coins
- Movement of the background
- Animation to be active only when objects are visible by the camera.

### *2D physics:*

- The main character to fall off if not on the platforms (present the game over menu).
- Coins to float where they are placed

*C# script:*

- Control the character to move left and right
- Control the character to jump
- Enemies to move left and right (enemies to start moving when visible by the camera only.)
- Recording score and time to be saved locally on an XML file.

*Release version 1.0:*

- HD video: The game to support widescreen 16:9 aspect ratio
- Surround Sound: Stereo surround sound support
- Single Player
- Keyboard Support to interact with the game
- Desktop version only
- Direct download: Education purpose only
- One-click deployment no installation required

## Technology

The minimum hardware and software specifications required to run unity engine alongside Visual studio are as follows (Unity 3D, 2019):

*Software:*

- Windows: 7 SP1+, 8, 10, 64-bit versions only
- macOS: 10.12+
- Linux: Fixed at: Ubuntu 16.04, 18.04 and CentOS 7

*Hardware:*

- CPU: SSE2 instruction set support
- GPU: Graphics card with DX10 (Shader model 4.0) capabilities

*Development IDE:*

- Unity game engine by Unity technologies LTS release 2019.4.24f1
- Visual Studio by Microsoft Version 16.9.3

*Programming Language:*

- C# programming language developed by Microsoft, which is used in Unity engine.

## Skils Required

- Ability to install, update and run Unity engine alongside Microsoft Visual Studio
- Creating and Importing assets
- Creating animations and adding physics to objects
- Basic C# programming language knowledge
- Basic XML knowledge to store data

## Outcome

Code Cats 2D is a side scroller single-player desktop game. The difficulty of the game increases as the player progresses to the end of the level. The game is one level consisting of hidden platforms for players to discover and coins to collect that contribute to the player high score. Players have to restart the game upon falling off of a platform or after being hit by an enemy throughout the level. The level consists of obstacles, enemies and objects that players have to overcome in order to be able to finish the game. Each action will have its specific sound effects for instance collecting coins will have a different sound effect than falling off a platform. Beating the game grants the players a special message based on the player score and saves the best scores locally on the device.

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# Group Reflection

# individual

**Chelsea:**

*What went well?*

Our group was formed very quickly and organically, which allowed us to really take our time with our tasks instead of rushing to get things done. With people from all backgrounds and varying skill sets, we were able to break our tasks down and assign them based on the skills best suited to each of us.

As we all joined the group independently and early on, as opposed to waiting for an automatically allocated group, we were able to build a great rapport, which definitely made a difference in terms of communication and collaboration.

*What could be improved?*

As we all worked very well together, any improvements would be minor. I think that as we are all very supportive individuals, when it came to providing feedback or suggestions to others concerning their individual contributions, we were a bit hesitant to speak up so as not to offend anyone. Going forward into A3, we should be a bit more open in terms of providing constructive feedback.

*What is one thing that surprised you?*

With course content being delivered completely online, I initially thought our group might struggle with communication. However, early on, we set our group up in MS Teams and decided on days/times for group meetings. We also set up a team server on Discord where we could discuss topics outside of our assignment, such as gaming and our pets, which played a defining role in coming up with our team name, Code-Cats.

*What is one thing that you have learned about groups?*

Overall, I have learnt that building a great foundation of communication and trust is essential for a group to run smoothly. I have also learnt that assigning defined tasks early on is vital when it comes to meeting deadlines.



**Jake:**

*What went well?*

The way that our group formed so quickly and proactively was fantastic and changed my perspective on how I thought the task was going to be moving forward. Previously I had always felt that group tasks were an inherent struggle; however, with how quickly our group formed and how friendly/ready everybody in the group was, it has made for a really wonderful experience. The communication around all of our tasks has been great and everyone in our team is so helpful, honest, and understanding when it comes to task completion.

*What could be improved?*

I think I could have communicated a bit better individually with my group mates one on one. Most of my communication with everyone was through the group chat and I did not really devote much time to building rapport outside of the group context. I think this is a bit of a shame because we have such a good group and I did not make the time to learn about their lives and families and hobbies.

*What is one thing that surprised you?*

The main thing that surprised me was that everyone in the group was reliable and no one slacked off. In all of the group work that I have done in the past, even playing in bands, there are one or two people who create a dragnet that either slows down the group's progression, or you have to chase them to keep them on track.

*What is one thing that you have learned about groups?*

One major thing that I have learnt about groups from this assessment is that joining a group early increases the chance that you will be paired up with like-minded proactive people. I feel that it is a self-explanatory phenomenon; however, until I joined this group, I did not think that a group like ours would be a realistic experience for me. In the future, I am definitely going to join project groups well ahead of the assessment start date.

**Yvette:**

*What went well?*

I think our group works particularly well because we all respect one another, and we all put in the effort to make things work. Due to this, I find that the group is very considerate and are always happy to help each other out, even when things don't go according to plan.

I believe that the aforementioned is perhaps the most important aspect of group work. People can have different personalities, communication styles, or ideas; so long as we are deferential to each other, we will always be able to find a balance and make it work.

*What could be improved?*

Given that I really enjoy working with my group, this is perhaps just a bonus and an aspect we may wish to work on altogether.

I usually find it easier to work in an environment where people are more openly analytical or commentative because it allows each member to bounce off each other's ideas more freely. If we were all more aligned with being more openly critical, it would help generate better ideas as a whole and be more beneficial for us as well as the outcome. There is always something that can be improved.

*What is one thing that surprised you?*

As this is my first time working with people I have never met online, I have noticed how much I rely a lot on none-verbal cues offline and that I need to learn how to overcome this challenge in an online context. This experience is surprising and challenging but it also gives me the chance to learn and adapt to the online aspect of group work.

*What is one thing that you have learned about groups?*

With the help of my group I have learned how to structure a group project more effectively such as having a task-based timeline and keeping well documented minutes through MS Teams. signing defined tasks early on is vital when it comes to meeting deadlines.



**Ashwin:**

*What went well?*

I think that, for the most part, this group has been one of the better group experiences I have had so far. Everyone does their own part and work is done promptly and well. Communication is good too, with issues and uncertainties cleared up quickly and efficiently. I liked that everyone was very supportive and understanding of each other.

*What could be improved?*

The only thing that could be improved is that we should have defined more apparent leadership early on and managed dividing tasks a little better. For most of the start of this assignment, we did not assign a leadership role as it did not seem like one was necessary at the time. I feel that this might have been a mistake as it made delegation and a better structure to our work a little harder to assign. Fortunately, we did realise this, and Chelsea took the initiative to fill a leadership position. After this, our work became a lot more structured and organised.

*What is one thing that surprised you?*

One thing that surprised me is how diligent and earnest my groupmates are. Everyone was dependable and met deadlines promptly. Criticism was always constructive, and everyone had a strong mutual respect.

*What is one thing that you have learned about groups?*

I have learnt that groups can work well together if everyone is clear about what roles they need to fill and if they all trust and support each other. I have also learned that communication is key and not to be afraid to speak up to resolve any issues that are faced.

**Eun Mi:**

*What went well?*

Meeting new people causes me to feel anxious, regardless of the context. Fortunately, every member was kind, friendly, and polite, which quickly made me comfortable enough to open up. It was a great decision to start having small talks via Discord, sharing our hobbies, details of pets and daily life stories. Through continuous casual conversation every day, we came to understand each other's personalities, build our relationships, and learn how to collaborate. Throughout the assignment period, we also kept communicating by sharing information and feedback, and offering help. There was not a single day we failed to speak: we stayed close and always connected regardless of what we were doing and where we were.

*What could be improved?*

We could have nominated a leader sooner, which could have helped us move forward more efficiently with tasks and create a productive team structure in which we could exchange our suggestions or feedback more freely without worrying too much about hurting others' feelings. Now that we have a lead role and a better-structured team, it will improve our efficiency in working on future assignments.

*What is one thing that surprised you?*

I often hear the lack of bonding and response are the common challenges in a group, but we did not experience such issues. Everyone must have had other matters to deal with, such as other courses, work and family, but our group members have always been reliable and responsive. It was a pleasant surprise to find out every one of us was responsible and accountable.

*What is one thing that you have learned about groups?*

Throughout the assignment, I learned that good communication and building relationships are the keys to success. There were many challenges, especially as all of our work is conducted online, but engaging everyone and continuing to converse online was a significant contribution to our team's success.



**Arian:**

*What went well?*

Everyone is considerate and happy to help; we were able to communicate effectively and complete the tasks that everyone was assigned to. Everyone was reliable and helpful. The group was able to maintain the in-group due dates and show effort towards completing the initial drafts. I did not feel under pressure as everyone was able to contribute equally and ready to help others at any point upon request.

*What could be improved?*

Communication could be improved as sometimes I found myself lost and had to ask about how to go about tasks. I had to refer to the assignment information PDF, which is mostly my own problem.

*What is one thing that surprised you?*

I was surprised at how easy it was to organise and complete tasks online. I was assigned tasks that I could complete without too much trouble, and I was able to contribute to the group work effectively.

*What is one thing that you have learned about groups?*

I have learned how to deal with groups in an online environment. Additionally, I have learned how to manage my time and distribute equal time to work and study simultaneously and not compromise any of them in any way. Overall, it was a wonderful experience for me, and I learned a lot from it.

# group

*What went well?*

Each team members comments were pretty consistent on what we thought went well. We all agreed that forming our group early played a defining role when it came to communication and the delegation of tasks. We were able to build a foundation of trust and mutual respect, which in turn made collaboration between the group efficient and effective. With a friendly and supportive environment, we were able to set and meet in-group deadlines for tasks that were assigned based on everyone's individual strengths, of which everyone made their best effort to contribute equally.

*What could be improved?*

When it came to thoughts on what could potentially be improved, two main suggestions came up amongst the group, the first being leadership. Although we currently have leadership in the form of Chelsea as Group Co-ordinator, we did not assign one for the first couple of weeks. This, in turn, led to uncertainty when it came to assigning and following up on tasks. After implementing a leadership role, our work became more structured and efficient, and so going into assignment three, organising leadership should be one of the first things that we do. It was also suggested that improvements could also be made when it came to providing feedback. As everyone in our group is so supportive, there have been instances where members were hesitant to provide anything but positive feedback. As we continued working together and building trust and respect, we slowly became more open to providing constructive feedback.

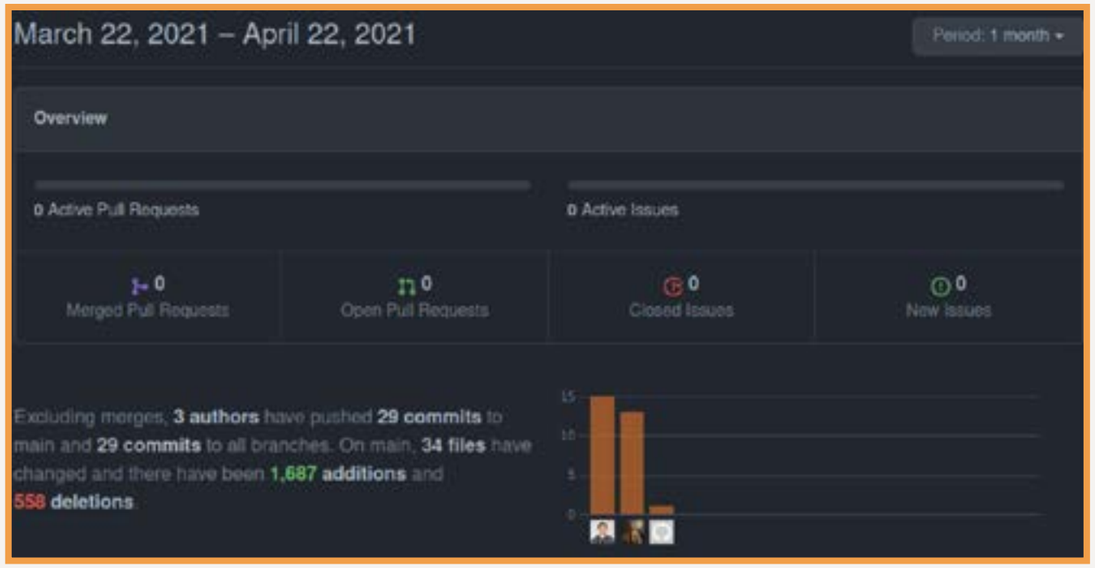
*What is one thing that surprised you?*

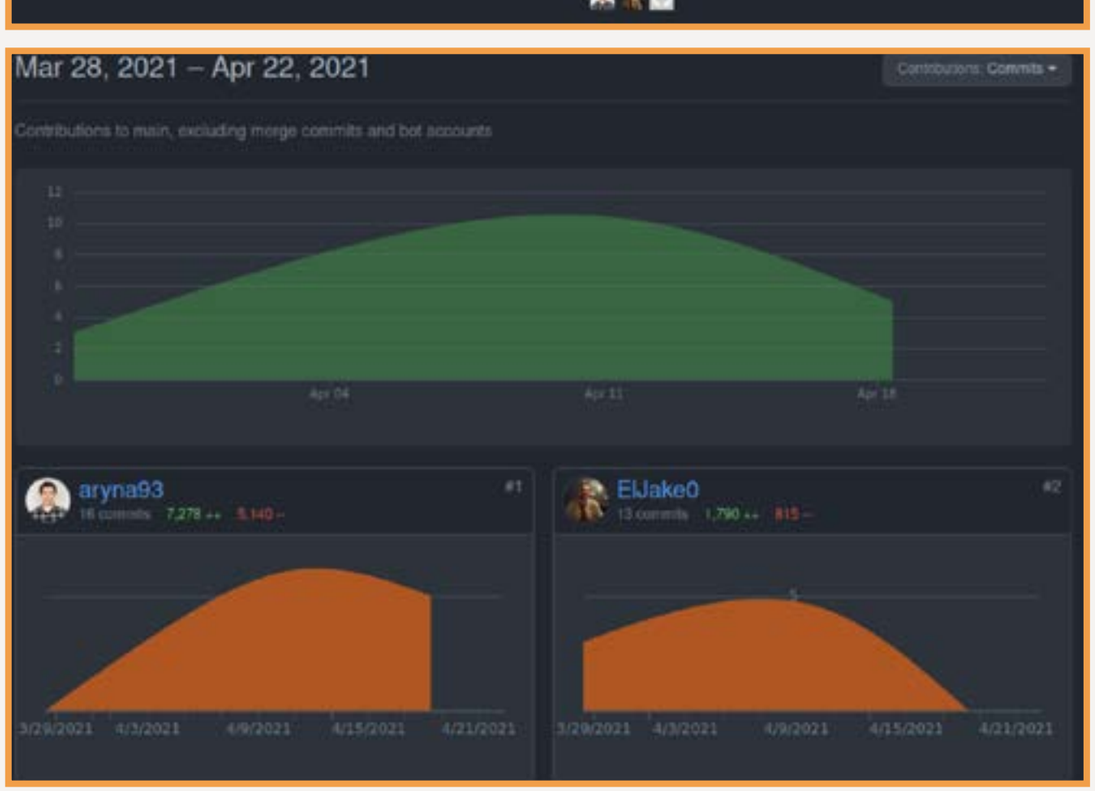
One thought that ran constant throughout our group was that everyone was surprised by how easy it was to communicate with each other, even though we had all only just met online. In many group situations, there is usually the concern that a member is not going to pull their weight or just not communicate with the group at all. At no point throughout this assignment have we had those concerns. Everyone has been equally reliable when it came to organising and completing tasks as well as communicating.

*What is one thing that you have learned about groups?*

Overall, we have all learned a lot about groups. We have found that joining a group early is a great way to ensure your linked with like-minded, proactive individuals. We have learnt that when it comes to making sure a group runs smoothly and efficiently, communication is key and that in order to establish effective communication, you need to trust and support those in your group.

# TOOLS




# Github

**Group GitHub Website:** https://eljake0.github.io/CodeCats/

**Group GitHub Repository**: https://github.com/ElJake0/CodeCats

Using Git has been a new and interesting collaborative experience for our team members. Arian and Jake were the designated web developers in charge of building the website and integrating all of the assessment content generated by the other group members. They are responsible for all of the commits on the current group project and, while also consulting the other group members, they held the most conversations regarding how the site should be constructed from a technical standpoint. Taking advantage of the learning experiences that GitHub was offering, both our web developers relied on the command line to make commits and push content to the repository.

In total our project to date has had 29 commits split 16 and 13 respectively between Arian and Jake. Most commits were significant changes to the website layout or major content alterations, with our communication style any minor tweaks were made and committed along with broader changes to the website.

Early on in the process of this website building Arian designed a website template which the group agreed would be the foundation of this component of the assessment. With the template in mind Jake determined that the most efficient and effective way to transpose the template design into HTML and CSS would be to use his experience with CSS grid.

Due to already being familiar with the framework provided by CSS grid Jake volunteered to initialise the GitHub repository and begin building the framework for the website, this is illustrated in the graph by many early commits and a peak just before the 8th of April. When it came to the more nuanced aspects of the website, such as the JavaScript dropdown menus and mobile inclusive layout, Arian's expertise shone through, as this work was more detailed it is evidenced through a similar peak in commits around the 10th of April. Both trend lines of commits are bearish after the 11th as primarily this period was mostly dedicated to content integration.

We feel as if the trend lines do reflect the respective work that was put in. While Jake's entries were earlier in the project they focused on establishing an efficient base that Arian could build on top of. The trend lines accurately depict the hand over of who was taking charge of the website building at the beginning stage and the end stage.

# MS TEAMS MEETINGS

MS TEAMS INVITE LINK

# Meeting 1

**24/03/2021 8PM**
**Chair and Minute Taker:** Eun Mi Seo
**Attendees:** Chelsea Bragg, Jake Kent, Arian Najafi Yamchelo, Ashwin Royan, Eun Mi Seo, Yvette Yang

**Agenda:**
- Meeting group – Introduce yourself
- Share high and low of A1
- Reading and understanding A2 brief
- MS teams meeting
  - Group name
  - Schedule meetings
- Plan for A2 roles

**Minutes/Action Notes**
**Item 1: Introductions**
Team members introduced themselves, providing some insight into the reasons why they were taking this course, their interests, and strengths and areas for development. Each member also shared a highlight and lowlight related to the first assignment.

It was agreed that the team is composed of a wide variety of skills and experience, which should make completing assignments more achievable and efficient.

**Actions**
Nil

**Item 2: MS Teams Meetings**
Each person shared their availability and thoughts regarding the nature and frequency of meetings required each week.

Everyone agreed to meet twice a week, at 8pm on Wednesdays and Sundays. This week the next meeting was scheduled for 5pm Sunday. A team name is required for MS Teams.

**Actions**
Think about potential names for the team.
Create agenda for next meeting
Decide who will chair next meeting

**Item 3: Assignment 2 Brief**
Members shared their understandings of the requirements of Assignment 2.

Though the group has a broad understanding of the assignment, it was agreed that the group should reconvene next meeting to discuss further, once everyone had read the brief in detail.

**Actions**
Read Assignment 2 brief and come to the next meeting prepared with ideas, concerns, and questions.

**Item 4: Planning Roles for Assignment 2**
Based on the different sections of the assignment, members talked about tasks could be divided equally; individuals volunteered to work on specific sections based on their personal interests and strengths.

**Actions**
Send link for third test
Create GitHub Group Repo and invite the team
Estimate your assigned tasks and plan timeline
Take Big Five Personality Test and send the result to Eun Mi
https://openpsychometrics.org/tests/IPIP-BFFM/



# Meeting 2

**28/03/2021 5PM**
**Chair and Minute Taker:** Chelsea Bragg
**Attendees:** Chelsea Bragg, Jake Kent, Arian Najafi Yamchelo, Ashwin Royan, Eun Mi Seo, Yvette Yang

**Agenda:**
- Meeting 1 recap
- Present team name suggestions (min 1 per team member)
- Confirm tasks and timelines
- A2 ideas, concerns and questions
- Confirm tasks to be actioned by next meeting

**Minutes/Action Notes**
**Item 1: Meeting 1 Recap**
Team members recapped topics discussed in meeting 1.

**Actions**
Nil

**Item 2: Team Name Suggestions**
Each team member shared their potential suggestions for the team's name.

Everyone decided on Ashwin's suggestion of Code Cats

**Actions**
Nil

**Item 3: A2 Ideas Concerns and Questions**
Team members put forth ideas and raised any concerns around individual tasks.

Team members discussed a number of questions raised around tasks. These questions addressed a number of items, including:

- In regard to the website what template/tools will be used? It was confirmed that no template will be used.
- Is a personal summary to be provided with third test results? It was confirmed that a personal summary is to be provided.
- Are we to create announcement via Canvas Group as per page 3 of assignment brief? Further clarification needed.

**Actions**
Get clarification on Canvas Group aspect of assignment

**Item 4: Confirm Tasks and Timelines**
Team members reviewed and confirmed induvial responsibilities based on previous meetings discussions. Members also discussed potential timelines for tasks to be submitted to MS Teams

There have been no changes to assigned tasks.

**Actions**
Create GitHub Group Repo and invite the team
Take Big Five Personality Test and send the result to Eun Mi
https://openpsychometrics.org/tests/IPIP-BFFM/
Personal Information - 1 paragraph per person to be submitted to MS Teams for Eun Mi
Progress update for all assigned tasks
IT Technologies complete draft
Website design mockup
IT Work - Interview Confirmation

# Meeting 3

**31/03/2021 8PM**
**Chair and Minute Taker:** Yvette Yang
**Attendees:** Chelsea Bragg, Jake Kent, Arian Najafi Yamchelo, Ashwin Royan, Eun Mi Seo, Yvette Yang

**Agenda:**
- Meeting 2 recap – unanswered questions
- Questions/concerns
- Discussion of next meeting (Easter Sunday)
- Confirm tasks to be actioned by next meeting

**Item 1: Meeting 2 Recap**
Following up on any unanswered questions from the last meeting

As per Anthony's response to Chelsea via Canvas A2 discussion, we will need to post a group #5 announcement on Canvas. As per Thomas's advice, PDF report can be in booklet.

**Actions**
Post announcement to Canvas

**Item 2: Ideas, Questions and Concerns**
Members discussed the following:

- The length of our individual summaries of personality test results
- Arian's website design via Adobe XD
- PDF report design

It was decided that our individual summaries would make up 2 paragraphs whereby the first would summarise the test results and the second would be our personal reflection.
Consensus reached regarding the colour (orange, black, white), functionality and overall aesthetics. For consistency, the PDF report will also be themed colour (orange, black, white)

**Actions**
Summarise personality test results (2 para)
Draft PDF report design

**Item 3: Discussion of Next Meeting (Easter Sunday)**
Team members discussed whether the next meeting, 4/4/21, is good for everyone to meet.

All members agreed to 4/4/21

**Actions**
Nil

**Item 4: Confirm Tasks and Timelines**
Team confirmed already set tasks and timelines then discussed whether we should start on Ideal Jobs & Industry Data.

It was decided that we would go ahead with Industry Data while we wait to receive feedback for Ideal Jobs. Additional timelines were also confirmed for the draft website and draft report.

**Actions**
IT Work – Interview Confirmation
Summarise personality test results (2 para) for Eun Mi
Post canvas announcement
Progress update for all assigned tasks
Draft website html/css
Draft PDF report
IT Technologies complete draft
Industry Data complete draft



# Meeting 4

**04/04/2021 8PM**
**Chair and Minute Taker:** Jake Kent
**Attendees:** Chelsea Bragg, Jake Kent, Arian Najafi Yamchelo, Ashwin Royan, Eun Mi Seo, Yvette Yang

**Agenda:**
- Meeting 3 recap – unanswered questions
- Questions/concerns
- Discussion of next meeting Wednesday 7th
- Confirm tasks to be actioned by next meeting

**Minutes/Action Notes**
**Item 1: Meeting 3 Recap**
The group followed up on any unanswered questions from the previous meeting.

Discussed an update on a question posted to Canvas.

**Actions**
Nil

**Item 2: Ideas, Questions and Concerns**
Members discussed the following:

- IT Technologies research task
- IT Work interview task and timeline
- Initial framework of the website
- Summary of test results and reflection

Arian finished the task early. Other group members were on track to finish the task on time.
Interview will be with Jake's flatmate who is a Customer Experience Representative at Dropbox, the interview is planned for the following Tuesday.
The framework of the website has been set up and displayed.
Arian had finished and uploaded. Chelsea to upload in the evening. Others to complete and upload before the next meeting.

**Actions**
IT Work
IT Technologies
Test Results

**Item 3: Discussion of Next Meeting**
Timeline + due dates for the next meeting on Wednesday 7th.
Group project discussion + assessment 1 results.

Meeting time confirmed and Ary hosting.
Each member to select their favourite project idea from the assessment 1 and review their results from assessment 1.

**Actions**

**Item 4: Confirm Tasks and Timelines**
The group discussed reamining tasks and timelines.

**Actions**
Summary personality test results
Look at assessment 1 feedback
Draft PDF report
Burning Glass data 4 questions, Ideal Jobs

# Meeting 5

**07/04/2021 8PM**
**Chair and Minute Taker:** Arian Yamchelo
**Attendees:** Chelsea Bragg, Jake Kent, Arian Najafi Yamchelo, Ashwin Royan, Eun Mi Seo, Yvette Yang

**Agenda:**
- Questions and concerns
- Task progress so far
- Discussion of next meeting

**Minutes/Action Notes**
**Item 1: Questions and Concerns**
The team discussed a number of topic inclusing, group coordinator, PDF design, website design, status of IT works interview and tasks added to Microsoft Teams.

It was decided to have Chelsea as our group's coordinator
Jake to complete his interview on Friday 9/04/2021
Tasks added to Microsoft teams
One meeting before Sunday for A1 review

**Actions**
Nil

**Item 2: Discussion of Next Meeting**
The team discussd whether an interim meeting would take place before the next to discuss A1 results.

It was decided that the interim meeting would be coordinated by Chelsea and the following meeting by Eun Mi

**Actions**
Nil

**Item 3: Confirm Tasks and Timelines**
Members discussed outstanding tasks, including, ideal jobs, interview and the PDF report

**Actions**
Summary personality test results
Look at assessment 1 feedback
Draft report
Burning Glass data
Interview
IT technologies
Project Idea



# Meeting 6

**11/04/2021 8PM**
**Chair and Minute Taker:** Eun Mi Seo
**Attendees:** Chelsea Bragg, Jake Kent, Arian Najafi Yamchelo, Ashwin Royan, Eun Mi Seo, Yvette Yang

**Agenda:**
- Check tasks progress
- Feedback on completed tasks
- Plan for a project idea

**Minutes/Action Notes**
**Item 1: Check Task Progress**
The team has reviewed the progress and confirmed the following tasks were completed:

- Team profile/Ideal job - Eunmi
- IT technologies
  - Clouds, services, severs – Arian
  - Blockchain and cryptocurrencies – Yvette
  - Machine Learning – Eunmi
  - Autonomous vehicles – Chelsea
- IT work – Jake

Ashwin has made a draft of Industry data and requires individual contribution. Everyone agreed to write about one paragraph and submit it to Ashwin.

Everyone completed tasks on time, and we are on the right track.

**Actions**
Industry data - individual contribution.

**Item 2: Feedback on Completed Tasks**
The team has shared feedback on completed tasks.

For the team profile table, it would be nicer to add more information to Myers-Briggs.

**Actions**
Add more info to Myer-Briggs

**Item 3: Plan for a Project Idea**
The team has discussed whether we should wait for A1 feedback. Given that there is only one week remaining, the group decided to choose the project idea without A1 assignment feedback.

Everyone agreed to select Arian's project idea, 'Side Scroller 2D Game'.

**Actions**
Project idea

# Meeting 7

**15/04/2021 8PM**
**Chair and Minute Taker:** Chelsea Bragg
**Attendees:** Chelsea Bragg, Jake Kent, Arian Najafi Yamchelo, Ashwin Royan, Eun Mi Seo, Yvette Yang

**Agenda:**
- A1 discussion
  - What was your first thought when reviewing your feedback?
  - Do you agree with the feedback you received? Provide one example each of what you do agree with and what you don't agree with (can be positive or constructive).
  - What was the biggest challenge you faced when completing A1?
  - Was there anything in particular you were most confident with?
  - Looking back, would you do anything differently, regardless of the feedback you received?
- Task update
  - Website
  - Tools
  - MS Teams Usage PDF
  - Industry Data - Individual Contribution (Refer to task in MS Teams)
  - Group Reflection - Individual Contribution (Refer to task in MS Teams)
  - Group Reflection - Group Contribution (Refer to task in MS Teams)
  - SparkPlus Feedback (Instructions to be posted on Canvas sometime this week)
  - Project Idea
- A2 contribution form

**Minutes/Action Notes**
**Item 1: A1 Review**
The team discussed individual feedback received from A1.

The team openly discussed feedback received from A1 based on set questions sent out earlier in the week. Overall, everyone agreed the feedback was very fair.

**Actions**
Nil

**Item 2: Task Update**
The team discussed tasks outstanding as well as revised due dates based on A2 extension.

Overall, we are on track to meeting the new submission deadline of 23/04.

**Actions**
Tools
Industry Data - (Individual Contributions)
IT Work
Feedback - SparkPLUS
Group Reflection - (Individual Contributions)
Group Reflection
PDF Assignment Report
PDF MS Teams Info

**Item 3: A2 Contribution Form**
The team briefly discussed the parameters of the A2 contribution form.
It was decided that this should be discussed further at the next meeting.

**Actions**
Sign A2 Contribution Form



# Meeting 8

**18/04/2021 8PM**
**Chair and Minute Taker:** Yvette Yang
**Attendees:** Chelsea Bragg, Jake Kent, Arian Najafi Yamchelo, Ashwin Royan, Eun Mi Seo, Yvette Yang

**Agenda:**
- Following up on the last meeting
- Group Project (Motivation)
  - Motivation (100-300) words: This should be a description of why the project will be interesting or useful. This may include statistics or other evidence, such as: "There service. are 1.5 billion cat owners in Australia, and so there is a huge market for an automated cat feeder. Using Raspberry Pi technology is a cheap and easily assembled solution to this problem."
- Task update & timeline
  - Website
  - Tasks completed to date
  - Tasks left to do/timeline
- Questions

**Minutes/Action Notes**
**Item 1: Meeting 7 Recap**
Team to update on tasks due today:
- Industry data (individual) updated with gaming industry - Jake
- Group reflection (individual) - Jake, Arian

Industry data confirmed as complete.

**Actions**
Group reflection (individual)

**Item 2: Group Project (Motivation)**
The team discussed the following topic in regards to project idea (Motivation):
- How much platform games influences or is influenced by culture (e.g. 'Donkey Kong')
- Feasibility (e.g. Developing a game in Unity)
- Generational (80 above for health reasons / App store: targeting kids, e.g. 2-4 years old).
- Gaming industry - significant growth in the past, still trending.
- Platform games generally are still popular via the App store (e.g. Though 3D, e.g. 'Limbo')

**Actions**
Project Idea (Motivations)

**Item 3: Task Update and Timelines**
Team discussed poll results, website, tasks completed or to be completed, signatures for A2 contribution form.

Poll results were unanimous, website to be showcased at next meeting, signatures to be uploaded onto the form on MS Teams

**Actions**
Project idea (motivation)
Group reflection
Website
Git rep report
Sign A2 Contribution Form
SparkPlus
PDF Assignment Report
PDF MS Teams Info

# Meeting 9

**21/04/2021 8PM**
**Chair and Minute Taker:** Chelsea Bragg
**Attendees:** Chelsea Bragg, Jake Kent, Ashwin Royan, Eun Mi Seo, Yvette Yang
**Apologies:** Arian Najafi Yamchelo

**Agenda:**
- Following up on the last meeting
- Final Tasks & Timeline for the last few days
- Questions
- Wrap up for this assessment and next assessment discussion

**Minutes/Action Notes**
**Item 1: Meeting 8 Recap**
The team followed up on the previous meeting, as well as any remaining tasks still outstanding for A2.

All tasks have been completed.

**Actions**
Nil

**Item 2: Final Tasks Due for Tomorrow**
The team discussed the following items:
- Finalisation/group approval of website
- GitHub Tools
- Submission
- Chelsea's checklist

Github tools and website touch ups to finalise.

**Actions**
Add final GitHub tools doc, meeting minutes, and touch up group website.

**Item 3: Questions**
The group discussed any outstanding questions before assignment compeltion.

There were no questions or concerns.

**Actions**
Nil

**Item 4: Wrap**
The group discussed dates for A3

First meeting to take place 28/05/21

**Actions**
Schedule meeting

Chelsea Bragg, Jake Kent, Joseph Ashwin Royan,
Eun Mi Seo, Arian Najafi Yamchelo, Yvette Yang