Team Project (Group 8)

Assessment 2

COSC2196 Introduction to Information Technology

Anthony Clapp

Bryce McKerlie

Hannah Sons

Noah Etherington

Daniel Coles

Rhiannon Lloyd

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Table of Contents

tools **2**

Team Profile **3**

Personal Information 3

Psychometric test data 5

Ideal Jobs **8**

Industry Data **11**

IT Work **21**

IT Professional Video Interview..... 2

IT Technologies **23**

Cyber Security 23

Machine Learning 26

Autonomous Vehicles 29

Blockchain and Cryptocurrencies 32

Project Idea **35**

Overview 35

Motivation 35

Description 37

Tools and Technologies 40

Skills 41

Outcome 41

Group Reflection **42**

Reference List **44**

Appendix **49**

Tools

Group Webpage: https://kerlie5591.github.io/The_Internet_Explorers/

Group Repository: https://github.com/Kerlie5591/The_Internet_Explorers.git

MS Teams Link:

https://teams.microsoft.com/l/channel/19%3aNQ8MTVyeNs5T9S6SUFQx4oc49LIjDsB6ASDpmwdKbsI1%40thread.tacv2/General?groupId=a92e7889-ccf9-4855-923d-6100571277b3&tenantId=d1323671-cdbe-4417-b4d4-bdb24b51316b

Meetings:

Please click here to access our video meetings, agendas, and minutes!

Overall, we believe that the audit trail on our Git repository reflects our groups work quite well. It shows individual documents our group members all uploaded for each section we were assigned to. Regarding the completed work, it reflects accurately. The areas we believe is reflected poorly is the extra work that went into the assignment, such as providing advice to each other and clarification on specific tasks, referencing assistance, proof reading and report structure, writing agendas and minutes, and chat discussions based on the content.

Back to Table of Contents

TEAM PROFILE

Team Name

The Internet Explorers

Personal Information

Bryce McKerlie

s3935787

s3935787@student.rmit.edu.au

https://kerlie5591.github.io/My_Profile/index.html

I am 30 years old and was born in Australia. I am Caucasian and Indigenous Australian, and I only speak English. I enlisted in the Australian Army as an Advanced Medical Technician early in life. During my time in the Army, I received my Diploma in Nursing and Diploma in Paramedical Science as well as other Certificates in the medical field. I went on to study my Bachelor of Nursing, and after discharging I completed my Certificate IV in Business Management and my Certificate IV in Security Management. I love spending time with my small family, my wife Tanya and daughter Katara. I enjoy living an active lifestyle and every week go skating, boating, or hiking as a family. I also enjoy online gaming and reading fantasy novels. I love IT and enjoy building computers; I have dabbled in app and webpage creation; I quite enjoy programming and app development. My current IT experience is limited, I have only ever pursued it as a hobby, never having worked in the field. I joined RMIT's Bachelor of Information Technology to learn as much as possible about IT and start a career that I will enjoy, I hope to gain the knowledge to become a software developer or work in cyber security.

Hannah Son

S3923902

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https://s3923902.github.io/HannahProfile/

My name is Hannah, I was born and raised in Sydney. I fluently speak Korean and lived in China for a short period of time just before the pandemic to learn Chinese Mandarin. I enjoy playing music and majored in classical piano. During the pandemic, I started learning to play the guitar on my own

while watching YouTube tutorials. My favourite hobby is travelling and during peak holiday seasons, I am usually holiday-hopping. My main interests in IT are Cyber Security and Artificial Intelligence. During my studies in diploma of IT, I was interested by methods which cyber criminals use to infiltrate computers and access data as well as ways that could mitigate it. My interest in artificial intelligence peaked after learning about Tesla's revolutionary Autopilot features and the ethics attached to artificial intelligence.

Noah Etherington

S3932976

s3932976@student.rmit.edu.au

https://noahj97.github.io/ITHome/

My name is Noah Etherington. I grew up in Hobart, Tasmania and started my working career as a chef. My hobbies include Gaming, Social sports, Listening to music and most importantly bush walking. I am currently running a fundraising campaign for the Cancer Council Australia in support of my terminally ill grandmother, for every Tasmanian Abel I summit I will be donating $10 to the foundation in hopes to raise awareness and aid in prevention of the illness. My interest in IT stems from building custom computers for friends and family and I hope to develop further knowledge in the software side of computing. The Internet Explorers is a team made up of myself, Daniel, Hannah, and Bryce (Name creator) and we hope to aid each other in upcoming projects.

Daniel Coles

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https://danseloc.github.io/Assignment1/index.html

Hi, I'm Daniel, I'm a member of The Internet Explorers along with Bryce, Hannah, Noah and Rhiannon. I was born and raised and currently live in Canberra, ACT. I'm Australian with a Māori heritage and I speak English. My passions include gaming, travelling, science, and hiking. I am interested in artificial intelligence, what it can offer humanity, and the ethics involved in a quickly growing field with huge potential impact. I am specifically interested in the field of machine learning and its ability to make sense of vast amounts of information. I'm also interested in computer

hardware; I enjoy building computers (then gaming on them) and keeping on top of current technology. For the past seven years I've worked as a polysomnographic technician. This job requires acquisition, handing, and analysis of large amounts of biological data and a fair bit of client interaction. My goal is to get the skills that will allow me to be a player in the developing field of artificial intelligence.

Rhiannon Lloyd

S3932870

s3932870@student.rmit.edu.au

https://rhio77.github.io/mywebsite/

Hi, I'm Rhiannon, I live and work in Port Augusta, South Australia. I work full time as a data administrator in the rail industry. I'm a wife, mum, and dog owner. In my spare time I like to create art and watch movies. I grew up in the 80's and 90's around computers and AV technology inspired by my dad who had a love for all things IT. During quarantine I had a conversation with my best friend who is currently a year and a half into her Batchelor of Social Work which she is completing online. I investigated what was now on offer and seeing that a wide variety of IT courses were available to me I jumped at the chance. I am interested in software development, learning more about computer programming and cyber security.

Team Profile

Myers-Briggs Test Results		
Name:	**Personality Type:**	**Personality Title:**
Bryce	INTJ-A	Architect
Rhiannon	INTJ-A	Architect
Daniel	INFP-T	Mediator
Noah	ENFP-A	Campaigner
Hannah	ENFP-A	Campaigner

Learning Style Test Results

Name:	Category 1		Category 2		Category 3		Category 4	
Bryce	Visual	**39%**	Auditory	**26%**	Kinaesthetic	**35%**		
Rhiannon	Visual	**33%**	Auditory	**30%**	Kinaesthetic	**37%**		
Noah	Visual	**40%**	Auditory	**25%**	Tactile	**35%**		
Daniel	Thinking	**16**	Feeling	**12**	Watching	**12**	Doing	**2**
Hannah	Visual	**9**	Aural	**2**	Kinaesthetic	**10**	Read/Write	**8**

Other Psychometric Test Results

Name:	Test name:	Test Results:
Rhiannon	Learning/personality Style	**Visual - ISTJ**
Daniel	RIASEC	Realistic – **20** Investigative – **29** Artistic – **20** Social – **14** Enterprising – **14** Conventional - **15**
Noah	Emotional Intelligence	**100/200 Average**
Bryce	Big Five Personality	Openness – **79%** Agreeableness – **71%** Conscientiousness – **83%** Extraversion – **63%** Negative Emotionality – **21%**
Hannah	Big Five Personality	Openness – **81%** Agreeableness – **75%** Conscientiousness – **56%** Extraversion – **81%** Negative Emotionality – **31%**

Psychometric tests can help to determine the ideal composition of a group, and our combined test results show that we are well matched. In our group, according to the test results, we have an assertive leader type with a strong sense of commitment and great attention to detail, a confident mediator that can ensure everyone's voices are heard and are treated fairly, two enthusiastic and strong communicators that are creative and capable of exploring new ideas, and a determined, rational, and versatile individual that can bring focus to the group. With our group members knowing each other's personality and learning types, this enables effective communication and collaboration. For example, Architects tend to appear standoffish, yet this is due to them being logical and can be perceived as being blunt. By understanding this, situations where tensions may arise due to other personality types perceiving Architects as being dismissive can be discussed or understood before occurring. Another advantage is knowing who may be best suited to certain situations before they occur. For example, we have a Mediator, this will be good because they are creative, passionate, open-minded, and empathetic. However, they can have tendencies to be self-critical, which can lead them to have unrealistic expectations for themselves and beat themselves up when they don't live up to these expectations. We also have 2 Architects and 2 Campaigners. This means we know we have two members who may need help to abide by deadlines and can be disorganised or unfocused, but are talented in communication, enthusiastic, and perceptive. We also have two people who are solution focused and determined but can be single minded.

The advantage of knowing each group member's learning style is also important, especially when collaborating over the internet. It allows the group to utilise techniques such as virtual whiteboards or transcripts of meetings to ensure each member can learn in the opportune way for them. Even if these psychometric tests are not 100% accurate for everyone, they provide a basis on which the group can utilise to work effectively, particularly at the start of a collaboration when individuals may not have experience with group work or specific team members. With all our team members understanding each other's personality and learning styles, we will be well-equipped to handle any challenges that may surface, and ensure we work well together to complete all tasks efficiently and effectively.

Back to Table of Contents

Ideal Jobs

When it came to selecting an ideal job Bryce, Noah and Rhiannon had all initially selected the same role, that of Software Developer. Hannah had chosen Cyber Security Analyst and Daniel listed a very specific job, Research Scientist with company called OpenAI. These three jobs, while being very different from each other, also have a lot of elements in common. Personal skills differed little between the three careers. The importance placed on being able to communicate effectively, both orally and in written form, ranks very highly for all three jobs. The need to be able to integrate well into a workgroup, no matter the size or project, is also very important. You must be able to organise yourself and your workload effectively to succeed in these jobs. Attention to detail is important and presentation skills are required so that you can effectively share your ideas with clients, employers, and co-workers.

There are also technical skills that are similar in both jobs. Knowledge of programming languages SQL, JavaScript and JAVA were the top three requisites in the IT Specific Skills list from Burning Glass for all three jobs. Experience with operating systems also ranked highly, with Windows and LINUX featuring predominantly on the list. The differences between them are predominantly down to the level of education required for each career. Software Developers don't necessarily require a degree or formal education, just a provable knowledge and experience with the programming languages required by the employer. Cyber Security Analysts, often need a degree in IT, Cyber Security, or Computer Science. They must also have or be able to quickly acquire an understanding of the required knowledge and industry specific laws and standards, as these differ from company to company, as well as from country to country. Research Scientists need the highest level of education out of the three, a master's degree or doctorate in either Computer Science or a similar tech field. Their knowledge base must be more technical, with provable experience in machine learning, algorithms, and computer architecture. They must also provide proof of research skills with either first author publications or projects.

In conclusion, the basic skills for these roles are very similar. An understanding of IT technology and the industry is important. The need to be able to work well and communicate with others is also important. The main difference for these roles is the level of further education required for each job, mostly because of the technical skills required.

Baseline Skills	Software Developer	Cyber Security Analyst	Research Scientist
Communication	✓	✓	✓
Problem Solving	✓	✓	✓
Organisational Skills	✓	✓	✓
Writing	✓	✓	✓
Teamwork/ Collaboration	✓	✓	✓
Troubleshooting	✓	✓	✓
Planning	✓	✓	✓
Detail-Orientated	✓	✓	✓
Creativity	✓	✓	✓
Research	✗	✓	✓
Leadership	✗	✓	✓
Time Management	✓	✓	✓
Mentoring	✗	✗	✓
Quality Assurance	✓	✓	✓
Presentation Skills	✓	✓	✓
Meeting Deadlines	✓	✓	✓
Analytical Skills	✓	✓	✓
Team Building	✗	✗	✓
Management	✗	✗	✓
Multi-tasking	✓	✓	✓
English	✓	✗	✗
Building Effective Relationships	✓	✓	✓
Articulate	✓	✓	✓
Self-Starter	✗	✗	✗
Decision making	✓	✓	✓

Specialized Skills	Software Developer	Cyber Security Analyst	Research Scientist
SQL	✓	✓	✓
JavaScript	✓	✓	✓
JAVA	✓	✓	✓
Windows Microsoft	✓	✓	✓
Project Management	✓	✓	✓
SAP	✗	✗	✗
Business management	✗	✗	✗
Building relationships	✓	✓	✓
Business Analysis	✗	✗	✗
Graphic Design	✗	✗	✗
Technical Support	✓	✓	✓
Microsoft C#	✓	✓	✓
LINUX	✓	✓	✓
Customer Service	✓	✗	✗
Software Engineering	✓	✓	✓
.NET programming	✓	✓	✓
Website production	✓	✗	✗
Microsoft Office	✓	✓	✓
Oracle	✓	✓	✓
ITIL	✗	✗	✗
Git	✓	✓	✓
Python	✓	✓	✓
Scrum	✗	✗	✗
Systems Engineering	✓	✓	✓
Business Process	✗	✗	✗

[Back to Table of Contents]

Industry Data

Ideal jobs for group members:

Bryce, Noah, and Rhiannon: Software Developer

This job ranked first on the list for top 25 occupations listed in the industry data from Burning Glass Technologies between March 1, 2017, and February 28, 2018, per Figure 1.1 below:

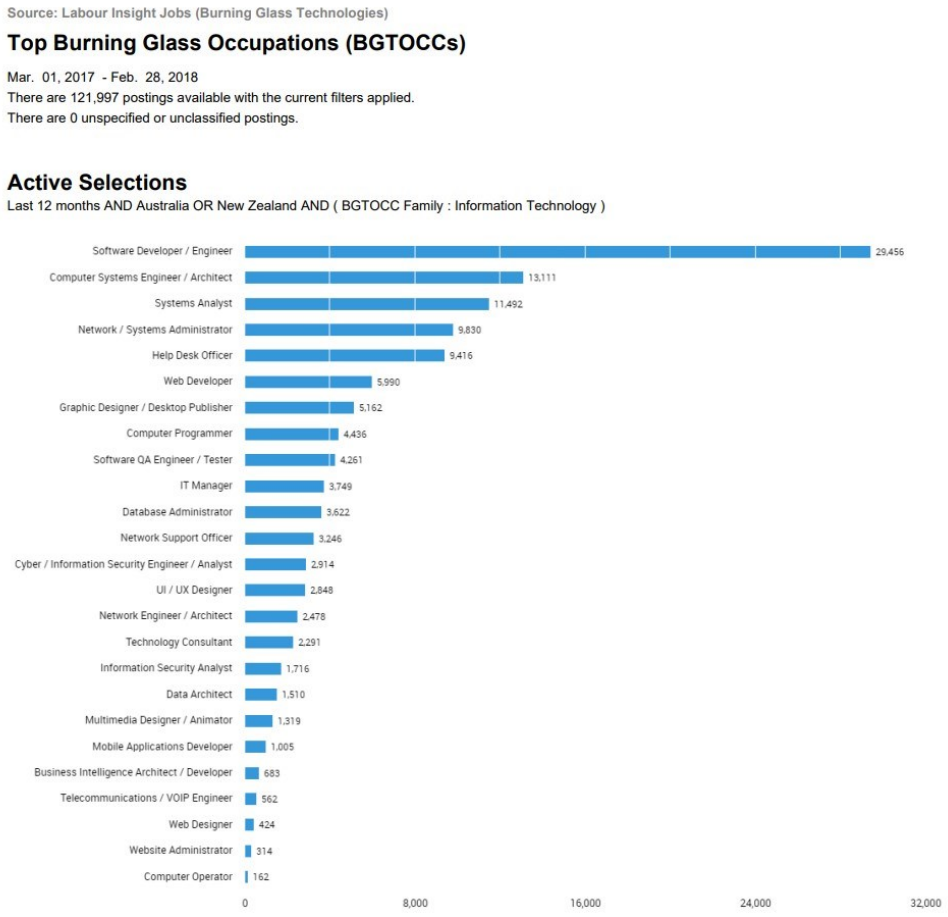

Figure 1.1

Generic skills and IT specific skills required for this position, as noted by the Australian Department of Labour (2021a), were high to mid-level ranked requirements for employers (see Figure 1.2 and 1.3)

Source: Labour Insight Jobs (Burning Glass Technologies)

Skills in Greatest Demand (Baseline Skills)

Mar. 01, 2017 - Feb. 28, 2018
There are 121,997 postings available with the current filters applied.
There are 16,729 unspecified or unclassified postings.

Active Selections

Last 12 months AND Australia OR New Zealand AND (BGTOCC Family : Information Technology)

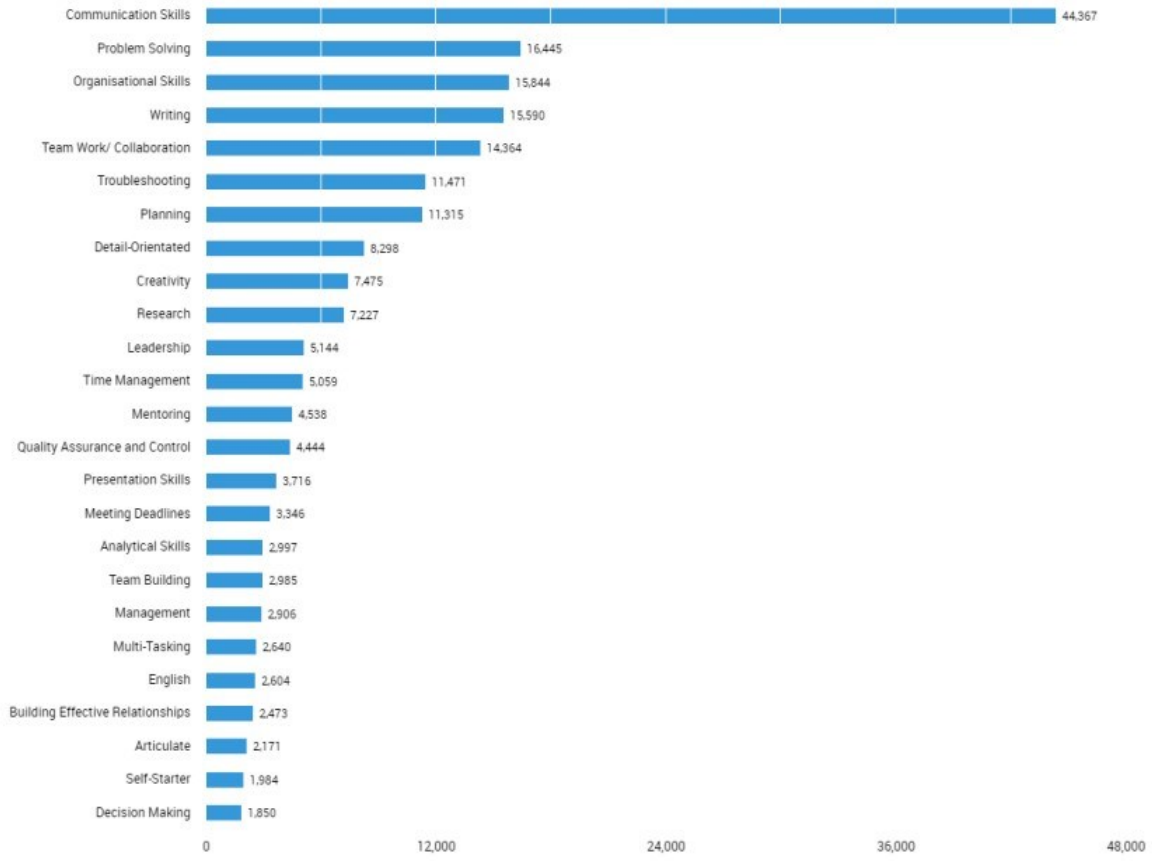

Figure 1.2

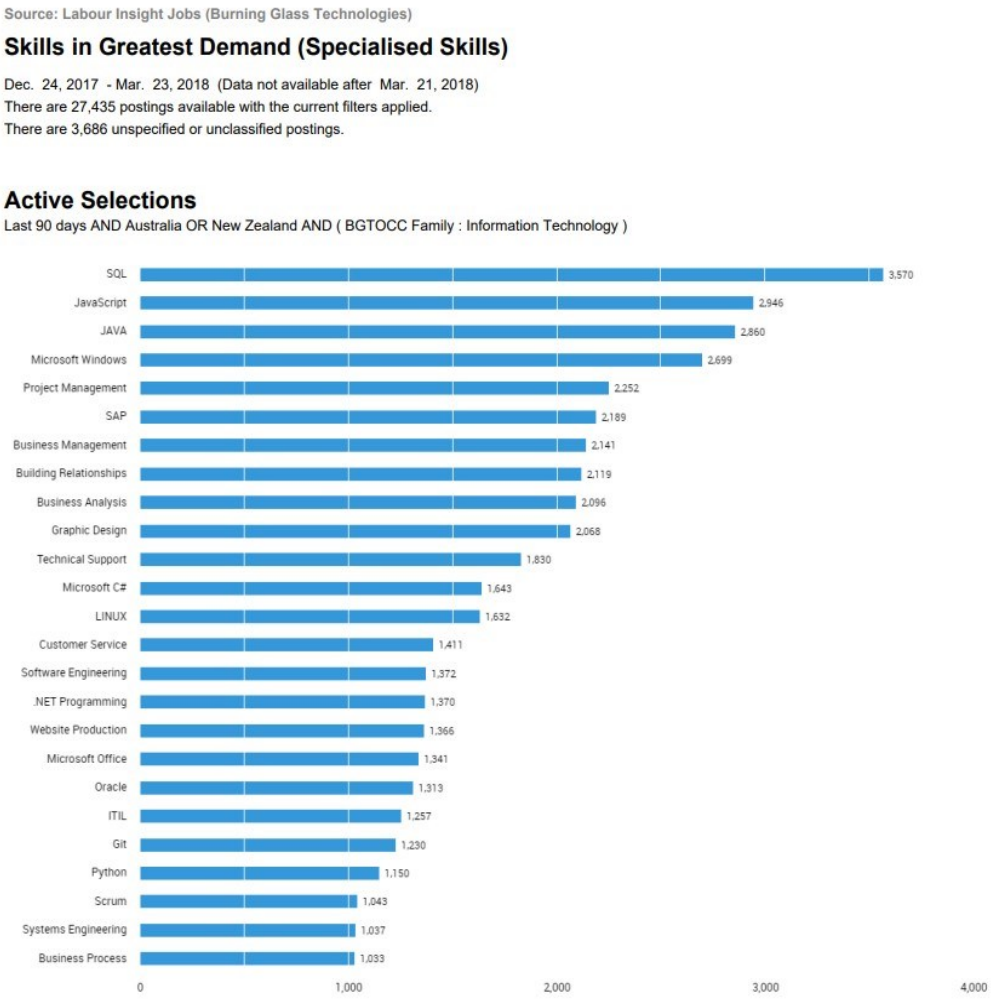

Figure 1.3

Generic Skill	Burning Glass Rank /25 *(Figure 1.2)*
Communication, oral and written/Articulate	1, 4, 23
Problem Solving/Trouble Shooting/Analytical Skills/Decision Making	2, 6, 17, 25
Organizational Skills/Planning/Time Management/Meeting Deadlines/Multitasking	3, 7, 12, 16, 20
Teamwork/Team Building/Building Effective Relationships	5, 18, 22
Detail Orientated	8
Creativity	9
Presentation Skills	15
Quality Assurance and Control	14

IT Specific Skill	Burning Glass Rank /25 *(Figure 1.3)*
Programming Languages:	
SQL	1
JavaScript	2
JAVA	3
MS C#	12
Python	22
Database Management:	
SQL	1
Oracle	19
Source Control:	
Git	21
Text Editing Software:	Not listed in top 25
Operation Systems:	
Windows	4
LINUX	13

Hannah – Cyber Security Analyst

In the results of the Top 25 Burning Glass Occupation list, this role is listed as 13th out of 25 (see Figure 1.1).

Like the Software Developer role, generic skills and IT specific skills required for this position, as noted by the Australian Department of Labour (2021b), were also high to mid-level ranked requirements for employers (see Figure 1.2 and 1.3).

Generic Skill	Burning Glass Rank /25 *(Figure 1.2)*
Communication, oral and written/Articulate	1, 4, 23
Risk Assessment/Critical Thinking (Problem Solving/Trouble Shooting/Analytical Skills/Decision Making)	2, 6, 17, 25
Understanding of laws and standards specific to industry (Detail Orientated)	8
Creativity	9
Active Learning (Research)	10
Organizational Skills/Planning/Time Management/Meeting Deadlines/Multitasking	3, 7, 12, 16, 20
Teamwork/Team Building/Building Effective Relationships	5, 18, 22
Presentation Skills	15
Quality Assurance and Control	14

IT Specific Skill	Burning Glass Rank /25 *(Figure 1.3)*
IT/Cyber Security/Computer Science qualification	
Programming Languages:	
SQL	1
JavaScript	2
JAVA	3
MS C#	12
Python	22
Database management:	
SQL	1
Oracle	19
Operating Systems:	
Windows	4
LINUX	13
Project Management	5
Text Editing Software	Not listed in top 25
Remote Access Systems	Not listed in top 25

Daniel – Research Scientist at OpenAI

While this role did not appear in the Top 25 Burning Glass Occupation list (*Figure 1.1*), it is the most industry specific of the roles and the most technologically involved (OpenAI 2021). Additional information about the importance of the role in the AI field was found online (Verma 2021).

Generic Skill	Burning Glass Rank /25 *(Figure 1.2)*
Communication, oral and written/Articulate	1, 4, 23
Risk Assessment/Critical Thinking (Problem Solving/Trouble Shooting/Analytical Skills/Decision Making)	2, 6, 17, 25
Creativity	9
Proof of first author publications or projects (Research)	10
Detail Orientated	8
Organizational Skills/Planning/Time Management/Meeting Deadlines/Multitasking	3, 7, 12, 16, 20
Leadership/Management	11, 19
Teamwork/Team Building/Building Effective Relationships	5, 18, 22
Presentation Skills	15
Quality Assurance and Control	14

IT Specific Skill	Burning Glass Rank /25 *(Figure 1.3)*
Masters or Doctorate in Computer Science or related tech field	
Programming Languages:	
SQL	1
JavaScript	2
JAVA	3
MS C#	12
Python	22
Database management:	
SQL	1
Oracle	19
Operating Systems:	
Windows	4
LINUX	13
Project Management	5
Text Editing Software	Not listed in top 25
Computer Architecture	
Software Engineering	15
Systems Engineering	24
Algorithms	Not listed in top 25
Machine Learning	Not listed in top 25

The three highest ranked IT specific skills not listed for each role (see Figure 1.3) are:

Bryce, Rhiannon, Noah – Software Developer

- Research
- SAP
- Business Management

Hannah – Cyber Security Analyst

- SAP
- Business Management
- Business Analysis

Daniel - Research Scientist at OpenAI

- SAP
- Business Management
- Business Analysis

The three highest ranked generic skills not listed for each role (see Figure 1.2) are:

Bryce, Rhiannon, Noah – Software Developer

- Research
- Leadership
- Mentoring

Hannah – Cyber Security Analyst

- Leadership
- Mentoring
- English

Daniel - Research Scientist at OpenAI

- Mentoring
- English
- Self-starter

Having looked at the Burning Glass data, has your opinion of your ideal job changed? Why or why not?

Bryce

My ideal job is Software Developer, after reading the Burning Glass data, my opinion has still not changed. A lot of the general and IT-specific skills required for my ideal job are all within the top section of the data. I still want to gain a career in programming as I really enjoy writing code, especially seeing it finished and watching my work come to fruition, therefore my ideal job is still Software Developer.

Hannah

The Burning Glass data has not changed my opinion of my idea job. It appears that the field of cyber security is ranked within the list, and it is currently a field growing in demand. Also, some of the more popular roles in the occupations list are positions which can improve further skills to become a cyber security analyst and grow relevant experience. If it's not possible to jump straight into the cyber security field, it will be possible to develop the necessary skills and experience in other fields and use those assets to pursue my ideal job.

Noah

After studying the burning glass data, I have still decided on software development to be my ideal job. Even though software development was low on the list of jobs the other data could easily be compared to a job in software development. All the skills and languages required could all be achieved in this position. At the end of the day, it is not about the quantity of the jobs going around but about the quality of them.

Daniel

Despite my ideal job not being represented in the Burning Glass data I still wish to be a research scientist at openAI. The field of machine learning and data science is growing incredibly fast, and I don't believe this was captured in the Burning Glass data. I still want to be in a company at the forefront of research and development with the skills to assist in those tasks.

Rhiannon

No, my opinion of my ideal job has not changed. The Burning Glass data provided is already four years old and the IT industry has evolved and improved since then. There are coding languages used today that weren't listed, as well as IT roles that are becoming popular and important in the field. I am still interested in pursuing a career as a Software Developer.

Back to Table of Contents

IT Work

Video interview link:

https://rmiteduau.sharepoint.com/:v:/s/demo334/EbeUZUYSpiZDkli5HQTWJR8B3afq1xH94H8BViH68mHQeA?e=yrLbee

See Appendix (p.49) for transcript of video interview. At the beginning of the Appendix are links directly to the questions being asked. At the start of each question is a link to return to beginning of Appendix to make navigation of the video transcript easier.

Our video interview with a Software Developer, Joel, was very informative and provided a strong insight of what it's like to work in his field. Joel works for a company called Bigtincan, a sales enablement platform. His job as a Software Developer is to design and create web API's, make them publicly accessible for clients to create their own tools with, and for the company to use in their own applications. Joel works for the Hobart branch, the main branch is in Sydney, they also have branches in the US which generates around 99% of their revenue. As part of his job, Joel also works with a ticketing system, sorting by priority and marking as completed so the Project Managers can

keep track. Due to the nature of his work, Joel coordinates a lot through Zoom meetings, especially when working on integration, and performs peer code reviews ~~and~~ including sometimes debugging of software. As Joel works in a small office, he only interacts with a small group of people such as the team supervisor, other developers, and sometimes the project managers. Joel rarely has contact with clients unless following up a request for help or to receive feedback, and never interacts with the investors as this is the Project Manager's job. In Joel's everyday work schedule, he mostly writes code for software, organises tickets, and attends meetings. Not all of Joel's job is easy-going. He finds code reviewing to be the most challenging aspect of his job as it can be quite boring when reviewing large amounts of code and can be difficult to offer valuable feedback. Joel also likes to code when he isn't at work, consequently he is currently working on a multiplayer gem matching game and an automated scraper for 4Chan and 8Chan.

Joel loves working as a Software Developer, however, before joining this company he considered game development until he started writing his own software and realised there are more opportunities for him to stay in Tasmania as a Software Developer as opposed to a Game Developer. Joel provided us with an example of the work he does that he feels captures the essence of the IT industry. His first project with the company was a product integration to Salesforce which existed six months prior to starting his current job, during a meeting he was asked how he thinks they should go about the Salesforce integration. When he came onto the project it was mostly done but had some problems he helped resolve then it was submitted for security review by Salesforce, where it was denied due to authentication issues. Joel came up with an idea and presented a prototype that creates pairs of keys, one public and one private. After presenting this idea, they passed the security review. Salesforce then mentioned that it should be written as a canvas app, making all their work redundant and now the entire project needs to be completely rewritten. According to Joel, this example captures the essence of the current IT industry; getting messed around by external forces, time constraints, not being able to do things the way you want, and having to make do with what you have, much like most industries. Joel has been a Software Developer for this company for around one year and he seems to really enjoy his work, a few of us in our group see Software Developer as an ideal job and this interview has reinforced that for us.

Back to Table of Contents

IT Technologies

Cybersecurity

What does it do?

Cybersecurity is the utilisation of technology to protect and reduce the risk of unauthorised entry and exploitation of computer systems, programs, devices, networks, and data (IT Governance Ltd 2021). Cybersecurity is a rapidly growing field; in response to an increase in data breaches with 1,291 breaches in 2021, compared to 1,108 in 2020 (Morris 2021). IT professionals are constantly seeking new ways to deal with cyber-attacks, leading to the development and incorporation of state-of-the-art technologies, policies, and procedures. When referring to state-of the-art, people think of new and exciting technologies. However, in the case of cybersecurity, it also encompasses an overview of the best policies and procedures on security measures. VPNHaus (2019) claims that state-of-the-art in this field refers to the best performance of a subject available on the market to achieve an object. Therefore, the state-of-the-art of cybersecurity refers to the Cyber Security Guidelines within the Information Security Manual (ISM) which instructs organisations on how to best protect their data from cyber threats (Australian Cyber Security Centre 2021). These guidelines are comprehensive, including personnel security, physical security, governance, and Information and Communications technology security matters. Alongside these guidelines, machine learning technology, and cybersecurity simulation are also considered part of the state-of-the-art of cybersecurity.

Machine Learning is a sub-field of AI, Gottsegen (2019) states that machine learning utilises previous datasets and statistical analysis to create algorithms that can make assumptions related to a computer systems behaviour. This data is used to change its actions and can even perform functions it has not been programmed to. Machine learning is increasingly being used in cybersecurity due to its ability to identify potential hazardous files and sort through millions of files in a short period of time to uncover threats and automatically deal with them (Gottsegen 2019). Machine learning uses more statistical techniques as opposed to mathematical ones to find unhidden trends, incorporating the AI tool, this data can then be used to predict future patterns and the cyber threat landscape to prevent threats (Das 2021). With the development of AI and task automation through machine learning, the cybersecurity field has greatly benefited regarding automatic Penetration Testing and

Threat Hunting, which frees up IT professionals to focus on more important tasks. Alongside machine learning is cybersecurity simulations, this refers to creating simulated environments in important areas such as representative environment building, tests, evaluations and explorations, risk analysis and assessments, and exploring humans to predict threats and learn the best way to deal with them (Kavak et al. 2021).

Cybersecurity simulations are advancing rapidly, in the next few years Kavak et al (2021) predicts that there will be processes to establish data collection and access which will inform new models, utilising existing social theories to create new theoretical constructs specific to the field of cybersecurity. This will allow the use of psychology behavioural models to be used in cybersecurity as the means to develop sociotechnical solutions. Kavak et al. (2021) argues that these simulations should play a bigger role in the field as securing cyberspace requires not only great technical ability, but also behavioural insights. For the development of these new focused simulations to be viable, behavioural complexities need to be included in cyberattack simulations rather than just focusing on the cognitive approach that is currently used (Kavak et al. 2021). Incorporating psychologists as part of the multi-disciplinary team to study behavioural patterns during cyberattack simulations is a crucial part of this development happening. Utilising the previous mentioned simulations combined with machine learning and updated cybersecurity guidelines, the prevalence of large data breaches and other cyberattacks will be reduced and cause less overall damage.

What is the likely impact?

With the development of new theoretical constructs that use behavioural models in relation to cybersecurity simulations, existing cyber space defence mechanisms will be greatly improved. As stated by Mejia-Ricart (2019), this approach will aid in the early detection and prevention of cyber-attacks and assist in identifying potential adversaries and repeat offenders with similar modes of operating. The potential impact of this development will be a lowered prevalence of cyberattacks due to being more aware of potential offenders, allowing cybersecurity personnel to catch them before any real damage is wrought. Mejia-Ricart (2019) believe these behavioural studies will also allow for collaborative internet-wide security infrastructures through sharing of organisational security intel and improved system security automation, further improving cyber space defence mechanisms. This approach is similar in nature to criminal investigative analysis, otherwise known as “Profiling”, currently used by law enforcement to develop a description of an unknown offender

(Bonn 2017). The methods used have seen great results in predicting future offenders, which is the premise for using it for cybersecurity. This will help keep people who are vulnerable to scams and those who struggle with using technology to keep their information and details safe. Utilising these behavioural models to update the algorithms of automated threat detection systems will be ground-breaking in the field. With machine learning being used to detect key behavioural patterns, IT professionals in the field will have more time for other important tasks. The combination of machine learning and focused simulations utilising behavioural models will reduce some cybersecurity jobs due to the automation of threat detection. However, IT staff will still need to check the validity of the profiles once they have been generated and decide on a course of action, so I believe some job roles will change but not many will be made redundant.

How will this affect you?

The previous mentioned developments will improve cyber space safety and allow everyone to feel more secure when using computer systems. In my daily life, I will feel more confident knowing my personal details are protected and I can share photos and details with my family and friends overseas, via social media or email, without the worry that my details or photos will be stolen and used for nefarious purposes. Since technology is increasingly integrated into our daily lives and we are becoming more dependent on it, we are also more vulnerable and at risk of data breaches. The social impact of cyber-attacks may not be as apparent as the financial impact but can still cause lasting psychological damage. With these advancements in cyber security, I will feel more comfortable using the internet without concerns for my privacy or physical safety being threatened. After Sony's last data breach, I stopped entering my credit card details online for worry that my hard-earned money could be stolen. Labrecque et al. (2021) found evidence that consumer decisions following a data breach are adversely affected and perceptions of affected organisations are changed after social contract violations, increasing stress and anxiety levels. I look forward to knowing cyber space is safe enough again so I can order games online with confidence that my details are secure and won't be stolen. I believe that these developments in cybersecurity will not only affect me positively, but also my family and friends. It will mean my daughter can use the internet to contact her family overseas to build and maintain her own relationships with family without relying on me to do it for her, as I won't need to worry about censoring the information she is sharing for fear that it can be breached and used against her.

Machine Learning

What does it do?

Machine learning is a component of the larger field of artificial intelligence pertaining to furthering our understanding of computation theories and the human learning process with the idea of imparting such abilities on a machine through programming (Mitchell & Jordan 2015). Further, machine learning is a tool used in data analysis which automates analytical model building. The goals of machine learning models are to analyse data, identify patterns within the dataset and using this knowledge make predictions and inferences regarding future data. A machine learning algorithm can; correct its own errors, improve from past mistakes, and learn to perform new tasks based on old tasks (Chen 2020). Machine learning provides humans with a tool to analyse datasets that are far beyond the scope of human capability and to come up with predictions and inferences that can be acted upon. The assistance of machine learning would be sought if; very high accuracy was not vital, the dataset is very large and unanalysed, the question being asked is novel with very little historical data, or the problem is dynamic and in a constant state of change (Award & Khanna 2015).

There are two common types of machine learning: supervised and unsupervised. Supervised machine learning systems use training data to generate predictions. Training data is a set of data with known relationships generally in the form of an input *x* and an output *y*, though the inputs and outputs can vary greatly in their nature, for example inputs can be entire documents, images, DNA sequences, or graphs (Mitchell & Jordan 2015). Outputs may be binary or regressive in nature, for example, identifying spam emails(binary), or predicting house prices using a regressive model (regressive) (Imran et al. 2021). Unsupervised learning does not require a training data set and instead looks at relationships between points of data within a set. Some areas that unsupervised machine learning is used are recommendation engines, anomaly detection within datasets, natural language processing, image processing and computer vision (IBM Cloud Education 2020).

The forefront of machine learning applications are AI neural networks. An AI neural network is a series of interconnected artificial neurons and synapses that act together to process information in a method analogous to a human brain. AI neural networks are layered with the first layer being the input layer, a middle layer that contains most of the nodes and synapses which attenuate the data based on trained coefficients, and finally an output layer which distributes the information to a point outside the network (March 2021). Ai neural networks are used in many disciplines for classification, clustering, pattern recognition and prediction (Abiodun et al. 2018).

The ability of machine learning is directly tied to the computing strength of processing units. Quantum computing will greatly increase the ability of machine learning algorithms to process large amounts of data. An experiment conducted in 2019 pitted a state-of-the-art supercomputer against a quantum computer, the results showed that a task which would take a supercomputer 10,000 years to accomplish was achieved by a quantum computer in 200 seconds (Arute et al. 2019). This is an obviously giant leap in computational power that is likely to become mainstream technology within a decade, and a very powerful combination when coupled with advanced machine learning algorithms.

What is the likely impact?

AI neural networks are currently commonly used in e-commerce for recommendation engines that are tailored to the user based on what the neural network has learned about their habits, and in search engines. More recently, AI neural networks are being used in the health care industry to assist in diagnostic imaging, clinical decision making, and many other areas clinical and enterprise related (IBM 2021). In the specific case of IBM Watson, an AI neural network, it was trained for two years on millions of pages of medical data to the point where the network can now prompt diagnosis and propose treatments based on patient complaints and anamnesis (Mach 2021). Other areas that AI neural networks are used include information security, big data, cloud computing, agriculture, science, medical science, education, finance, management, security, engineering, trading commodity, art, and forensic science (Abiodun et al. 2018).

The process of developing machine learning algorithms that are tailored for specific purposes is being automated. This means that people or business who are not trained in coding or machine learning can benefit from what complex machine learning algorithms have to offer (AutoML.org 2021). This process of automating machine learning has already begun with Keras offering a user-friendly python interface to the TensorFlow library. TensorFlow is a free and open-source software library for machine learning and artificial intelligence. Machine learning is predicted to have a specifically large impact on the healthcare and pharmaceutical industries by improving prediction and prevention of possible diseases, rather than focusing on treatments after diagnoses. Currently disease predictions are based on limited variables such as age, weight, gender, etc. With machine learning, however, the data set can be greatly widened to include things like, patient demographic and health records. By using machine learning techniques such as natural language processing and image processing, electronic health record data can be fed into a machine learning algorithm where patterns can be established which will lead to better prediction results (Jones et al. 2018). Further,

machine learning will assist in drug development by using datasets of drug compounds and chemical structures to predict the impact they may have on different biological functions causing side effects. Machine learning will result in shorter drug testing times (Zhydik 2021).

As machine learning becomes more ubiquitous in society more and more jobs will not require a human presence. The benefit will be that productivity and effectiveness will increase to levels that humans can't achieve. Some jobs that are likely to be replaced by machine learning are bookkeeping and data entry, receptionist, customer service, manufacturing and pharmaceutical work, doctors, market research analyst, and retail services. All members of society will benefit from a medical system augmented by machine learning, as diagnosis will be quicker, preventative measures will be stronger and faster, and care will be more tailored to specific needs.

How will this affect me?

Machine learning will greatly affect me personally in the years to come. From my google searches being more efficient, to my overall online experience being more personalised, my car being automated, my medical services being more effective, machine learning will affect almost every aspect of my life. Previously my doctor would have to sift through towers of medical data to make a diagnosis, but with the aid of machine diagnosis can be done accurately and swiftly by an algorithm in a matter of minutes or seconds freeing up doctors to put more time and effort into treatment decisions and actions. Note that treatment decisions and actions will come under machine learning too although other fields will need substantial advancements alongside machine learning for example robotics. Machine learning image recognition and classification technology will affect me by providing a smart and adaptive automated logistical supply chain. As we have seen recently with the various Covid outbreaks, supply chains can quite easily be disrupted by disasters. Machine learning would add a layer of flexibility and adaptivity to a supply chain by analysing vast amounts of data, predicting disruptions effectively and taking pre-emptive actions, this would result in adequately stocked supermarkets in times of crisis. As the information technology progresses the amount of data being acquired is going to grow meaning we are going to steadily rely more on machine learning. It is already a major part of many aspects of our lives and is only going to get more important.

Autonomous Vehicles

What Does It Do?

Autonomous vehicles are better known as self-driving cars. They are vehicles which replace all or some of the human driving factor with electrical and mechanical devices (Faisal et al. 2019). Autonomous vehicles depend on multiple software, Artificial Intelligence (AI) and different disciplinarians such as computer science, electrical engineering, and mechanical engineering to be designed and built (Singh & Saini 2021). Pagano et al. (2020) state that every autonomous vehicle should be fitted with sensors, cameras and lidar to detect obstructions on the road and built-in navigation systems to remember lane geometry and road signs. Sensors and cameras not only detect obstructions, but they should also have the ability to build a picture to distinguish pedestrians, cyclists, other moving and stationary vehicles for a safer travel experience (Piper 2020). To combat changes in weather, temperature or any external changes, environmental sensors should be fitted to identify temperature and precipitation to adjust its systems accordingly to the driving conditions in real-time (Pagano et al. 2020).

With multiple technological issues and research still going underway with building safe autonomous vehicles, it's unclear when self-driving cars will be available to consumers and emerge as a norm. Although self-driving vehicles are not currently available for purchase in consumer markets, recent Tesla car models are all geared with self-driving capabilities. Tesla uses the Autopilot feature which uses cameras to detect objects, steer the car, brake automatically, and keep the car within road lanes, but constant engagement with the car is required to avoid fatal accidents (Metz & Boudette 2021).

There are currently on-going trials and experiments with autonomous vehicles, such as driverless shuttles for airports and campuses, ride-hailing services as well as delivery robots in different areas (Pagano et al. 2020). UK based company Oxbotica has been trialling driverless taxis in the UK and Europe while China based company AutoX has already launched its driverless taxis in Shanghai, China and are expected to expand these services to other cities in the next couple of years (Cusack 2021).

Many companies promise autonomous vehicles will be available soon for the consumer market. However, there is more involved in autonomous vehicles than mechanical, engineering, and technological advancements. Raue et al. (2019) indicates, there are overall safety concerns and reliability issues with technology including unexpected occurrences such as hacking, personal data

tracking and equipment failure. Questions involved in the decision-making processes of autonomous vehicles also continue to be researched and further studied. Metz & Boudette (2021) claim that autonomous vehicles should be subjected to further real-life data and training in its reactions and decision-making procedures to real-life obstacles and sudden occurrences before they should be available to the consumer market. Therefore, although currently there are vehicles with autonomous features available, it is unlikely that complete autonomous vehicles will be accessible in private homes soon.

What is the likely impact?

Autonomous vehicles are expected to have substantial impacts to road safety, time and efficiency, cost of travel, and in the manner of travel. Faisal et al. (2019) conveys autonomous vehicles will "facilitate dynamic ridesharing" which will "guarantee high traffic capacity and vehicle density and reduce traffic congestion". Ridesharing will give people the option to share ownerships of cars which will be a financial alleviation due to the shared costs of maintenance, ownership, and other legal fees (Meyer et al. 2017). With companies offering driverless taxi services, there is a likelihood of more people without personal cars which will save expenses that is currently being used towards owning and maintaining a personal vehicle. In this way the number of cars on the road will be reduced, which will free up traffic congestion and parking spaces in urban areas which can be utilised for other operations (Faisal et al. 2019). However, driverless taxi services will result in decreased job prospects for taxi and ride-sharing drivers since autonomous vehicles are expected to provide better services and lower fees compared to traditional taxi services (Faisal et al. 2019).

Although many researchers expect traffic congestion to be reduced, Meyer et al. (2017) proposes another theory that there may be an increase in traffic since autonomous vehicles will open up travel for children, elderly, people with disabilities, and other user groups who currently do not hold a driver's license. Faisal et al. (2017) justifies the reliability and comfort provided will assist in expansion of cities and towns, generating more work in the real estate and building industries. It is also predicted that more employees will consider long commutes since autonomous vehicles will allow multitasking on the road which validates the theory of urban sprawls. Singleton (2019) anticipates that "if travellers can make better use of their time in AVs, they may be willing to drive more, farther, and for a longer time". Autonomous vehicles are expected to contribute to saving time with other features such parking and valet. Consumers will be able to use the time required to look for parking spots and walking from their car to their destination towards other tasks if

autonomous vehicles can achieve that purpose instead (Faisal et al. 2019). Current valet drivers will see a reduction in work as it will be replaced by driverless cars taking on the role itself.

Other than time saving elements and heightened convenience, autonomous vehicles are predicted to create a safer driving environment. Pagano et al. (2020) explains “since a high fraction of vehicle crashes are caused by driver errors, driverless vehicles have the potential for significantly improving roadway safety.” Autonomous vehicles equipped with multiple sensors, cameras and radars will be better at lane changes, lane keeping, queue assists and crash avoidance as elements such as tiredness and distractions will be mitigated. The need of these features in autonomous vehicles will see increased job prospects in the IT and engineering industry including artificial intelligence engineers, mechanical engineers, electronical engineers, data analysts, data scientists, intelligence designers and more.

How will this affect you?

Autonomous vehicles will have a definite impact on my daily life. Many times, I have chosen my work based on how long it takes to commute to work. However, if I could multitask while commuting to work in comfort and without the lack of space and noise that must be tolerated on public transports, I would be more willing to find work outside of the city and further from home. In contrast, autonomous vehicles would open options to friends and family who live further from the city to commute to the CBD with less hassle and without being stuck in traffic, dealing with rude or cranky drivers.

This new technology will also impact many of my friends and family who are elderly, are caring for elderly parents, have children and other members of the family who cannot drive. Since autonomous vehicles will offer driverless taxi services which are affordable, friends and family could use the time they use to drive family members in other ways needed. However, this will affect friends or people who are currently working as taxi drivers, since they will possibly lose their jobs when driverless taxis will start becoming more common and popular. On the other hand, friends who are working as engineers or in the IT sector, will increasingly find career development opportunities.

Blockchain and Cryptocurrencies

What does it do?

Cryptocurrency has been an enormous success in recent years with the first initial boom of Bitcoin. Since then, multiple different cryptocurrencies have surfaced and words like blockchain and NFTs have become popular., But what do they all mean? The origins of cryptocurrency can be traced back to the late 2000s with a paper called “Bitcoin - A Peer to Peer Electronic Cash System” but one thing that is not clear is who published the paper. It was published under the name Satoshi Nakamoto and till this day no one has ever seen them, and it is not clear whether Satoshi is one person or a group of people (Marr 2017).

Satoshi created Bitcoin as the first digital currency to have no middleman or authority. Unlike organizations like PayPal, Bitcoin was completely P2P, so users had complete control over where their money was going and who even saw it existed. With technology becoming a more dominate part of our lives and people wanting to become more in control of all their belongings Bitcoin seemed to be the best idea for the future economy. The first known commercial transaction of P2P payment using Bitcoin was believed to be in Florida in the United States. It is said that a person by the name of Ladzio Hancenyz spent 10,000 Bitcoin on 2 pizzas by trading them to anyone who would complete the purchase for him. At the time this only cost Ladzio $40 but in today's world that would total to $641837197 US dollars, that is a lot for 2 pizzas (NDTV 2021). But with this transaction cryptocurrency trading was born and today multiple organizations have been created to trade and buy these currencies.

But how does Bitcoin work? Essentially Bitcoin and other cryptocurrencies are online currencies that have been created to start an online economy. It is believed that Satoshi had pumped the online economy with 1 million bitcoins in 2010 before handing the repository over to a colleague by the name of Gavin Andersen who went on to create the Bitcoin Foundation (PC Dr 2020). For Bitcoin to exist in the online economy, it is required to be mined. Crypto mining is the act of using computer hardware to process transactions by solving mathematical equations at a speed unknown to humans. Once a transaction is completed the computer that solved the algorithm is awarded the block of Bitcoin then the process is repeated. Bitcoin mining also increases the maintenance and development of the blockchain that it is built around (Hong 2021).

Blockchain is a word that is constantly seen alongside cryptocurrency. Blockchain technology was first reported as early as 1990 but its success is credited to non-existent people other than Satoshi Nakamoto (Iredale 2020). Blockchain in a simple explanation is a P2P ledger system that records and

stores data that cannot be tampered or deleted. To edit data on a blockchain a new block of data must be added whilst remaining linked to the previous block, so no data is lost or tampered with. Satoshi used this platform to ensure no bitcoin transactions needed a middleman and could not be traced no tampered with. For a transaction to be completed though a mathematical equation is required by mining (Hong 2021).

What is the most likely impact?

Cryptocurrencies could completely replace physical currency soon if they are to continue in the right path. The world has already seen a huge decline in cash sales and with COVID-19 this has affected that dip even more (ABA 2021). If cryptocurrency is to succeed in the world, we must first find a use for them. At the current time only 2 of the main currencies have a real-world use (Bitcoin and Ethereum) with multiple organizations accepting them as payment. Smaller coins have started to find their place in online gaming, replacing cash rewards with copious amounts of coins in hopes that in the future they will be worth more than the initial cash prize. In recent years cryptocurrencies cards have been becoming more popular to the point where even Visa is allowing cryptocurrencies as a form of payment, ingoing and outgoing. One of the biggest impacts though comes down to a political standpoint, What Governments and higher bodies think of it.

Cryptocurrencies are protected by a blockchain system, and most wallets are heavily encrypted there is no way for an outside source to trace how much crypto you have or where you are spending it. From a consumer standpoint this is a positive, you will always be in control of your money, where it goes and where it is stored. But with the growth of crypto comes the growth of governing control. The main issue is Bitcoin was created to completely give the user 100% control which has created a cause for concern for a lot of governments. The first of those issues is Tax, without the government having no access to your wallet or access to any information about that wallet it is up to the user to claim the tax on their yearly report. Cryptocurrency now is often seen as white-collar gambling though so many users choose not to pay tax on it as with similar activities like gambling winnings are not required to pay tax.

The second biggest issue is how this will affect national economies if cryptocurrency is to replace our traditional ways of payments. With a complete online economy controlled by the sole users the government will most probably suffer massive losses if their currency because a least satisfactory option and with the growth of crypto cards it is a possibility that traditional cash will become a thing

of the past. If governing bodies cannot see how much income is coming in and where it is going it will become increasingly hard to write and study reports of yearly economical spendings.

How will this affect you?

Cryptocurrencies could replace all forms of currency as we know if they are exposed to the correct conditions. Already an increased number of companies are taking on Cryptocurrencies as a form of payment with consumers already being able to purchase Tesla's with Crypto. This will affect me most probably in my lifetime with increased cryptocurrency and cryptocurrencies planforms being developed which is making it easier for the everyday person to invest and buy these currencies. Visa and larger platforms also adopting cryptocurrency will be more appealing to most people as they will have more control over their money than ever before.

Blockchain technology could also affect my future career in IT (Information and Technology) with these advancements in Crypto. Blockchain technology could also be used in a lot of IT companies to store data in a secure and recorded fashion with no way to alter or destroy previous renditions. We can already see programs like GitHub using similar functionality properties of Blockchain, so it is safe to say this formatting will be much more present in any future job I hold.

As we become a more technologically based race our mobile phones and computers will eventually become more of an artificial limb than an accessory. Cryptocurrencies may replace our traditional currencies and that will perfectly integrate with our constant connection with technology. Humans are always striving to become more independent and in control of what they do with their belongings and when the word circulates that crypto is your money and your money alone, I think we will see a larger boom than ever before.

Back to Table of Contents

Project Idea - Versatile Fitness

An exercise app for time-constrained parents

Overview

Versatile Fitness is a wherever-whenever workout application that will be affordable and target a demographic ranging from busy parents to the casual enthusiast. Most of our workouts will be designed to focus on those that are time sensitive and will feature many motivational boosting features that will promote both physical and mental health positively through exercise. This app will appeal to many parents who have had kids for a while or those who have had their first child and struggle to find the time to balance care for their children and themselves. Finding the perfect balance between working, doing chores, family time and study can be hard itself. But a lot of people find even those tasks hard when caring for a child. The aim for this app is to achieve that perfect balance by creating a platform that is suited to your time with the information to guide you while keeping you motivated and interested in working out!! It will benefit parents in all stages of life and even those who are yet to take that step.

Motivation

A current study concluded that only 17.6% of parents exercised regularly, this can be attributed to many factors, the biggest one being parents saying they would prefer to spend their free time interacting with their children (Sukys et al. 2014). As cited by Samataro (2015), a recent study from the University of Pittsburgh revealed that couples or singles without children were less sedentary than parents. This is a problem as children's fitness levels, which are vitally important to their personality development, are closely attributed to their parent's exercise habits (Sukys et al. 2014). Samataro (2015) believes this issue is due to the commitments, prioritisation, and unpredictability of parenting. This results in parents finding it difficult to create and maintain a schedule, often neglecting exercise. Our project offers a solution by providing a time-effective workout routine with varying intensities that can include children. The features of the app will allow parents to easily slot exercise into their busy days and help provide motivation through motivational quotes/pictures, and an advanced notification system. Hargreaves (2021) discusses the importance of regular exercise and fitness levels being associated with improved well-being, enhanced life, and overall happiness. For centuries regular exercise has been associated with a longer life span and a healthy immune system, however it is only recently that the biological bases of this association has been clearly proven and explained (Hargreaves 2021). This is important when considering our motivations for designing this

app. Parents have high levels of stress when concerning time-management and often neglect themselves to ensure their children are well-cared for.

With the most recent studies proving the positive effects of exercise on mental health and overall feelings of happiness, parents who exercise will find themselves being more satisfied with themselves and are more likely to live more fulfilling lives. As of 2018, the Australian Bureau of Statistics (2018) found that 67% of Australian adults were either overweight or obese, which is an increase from 63.4% in 2015 as seen below in figure 1.1. This study was done on 12.5 million people. With the increase in overweight and obese Australians, it is more important than ever to include exercise in our daily routines. Our app, Versatile Fitness, is aimed primarily at time-constrained parents, however anyone can use it. Our goal is to create an app that will prompt the users throughout the day to consider working out, our main selling point is based around the ability to workout in short periods and still reap the benefits listed previously. The biggest drawback we foresee is visibility, there are currently similar apps, and they may not have all the same features, but they have been in the market for a while, making it harder to convince people that our app will be beneficial. Besides visibility, another drawback would be marketing the product. As our app is aimed mainly at time-constrained individuals or people without much motivation to exercise, potential users may not initially see the benefit of utilising our app. This is where it is our job to make sure the app is presented and marketed in a way that is very appealing to potential users and iterates the main features in a way that draws these potential users into trying it out.

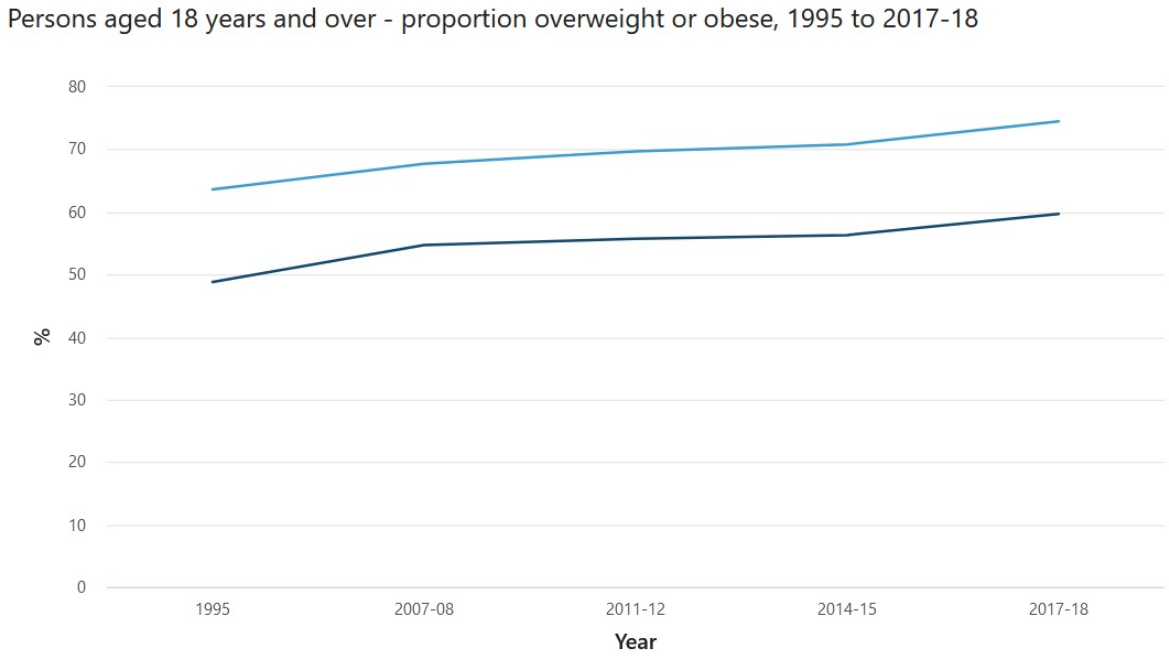

Figure 1.1

Description

The Versatile Fitness application aims to have a user-friendly interface that initially guides the user through the experience of finding the right workout for them. The first time a user opens the application they are asked a sequence of questions with one question per screen. These will include age, weight, height, experience level, fitness goals, time restraints, and if the user would like to involve their children in their workouts, note that these can be changed at any time within the app. The user can choose to go with the exercise program that is suggested by Versatile Fitness based on the introductory questions, or they can pick from the in-app selection of expertly curated programs sorted by time constraints, experience level and child involvement. Once a workout routine has been selected the user will see an overview screen outlining each exercise, the number of repetitions, the time taken per exercise, and the time taken for the entire routine. On the pre-workout screen there will be a large 'start' button which will take the user to the exercise introduction screen. Before each exercise there will be an informational screen that displays the basic movements of the exercise in gif format, the number of exercises left in the workout routine will also be displayed here. There will also be a link to a more in-depth video tutorial of the specific exercise which if chosen will show a workout that is designed to engage children and adults. This exercise introduction screen will have a countdown until the exercise starts automatically allowing the user to prepare themselves. Once the exercise starts there will be a timer based on the difficulty level and repetitions per exercise, which are set depending on the workout selection process, but can be changed at any time in the settings. There will also be a 'previous', 'pause' and 'next' button at the bottom of the exercise screen.

The Versatile Fitness app will also allow users to link their account to their favourite social media platforms through a button located in the settings. This button will appear as a small cog in the top right-hand corner of the main screen. This will allow the option to share the details of the user's completed workouts on social media, showing simple information like the time it took to complete, the intensity of that workout, and a motivational graphic, picture, or quote. Suggested social media options to offer connection to, based on popularity, would be Facebook, Facebook Messenger, and Instagram. When the user wants to share content for the first time, they select the social media site they want to post to, the login page to that site will then open so that the user can connect the two. The ability to add a comment to the post will be available as well as a list with checkboxes of the information they would like to post. For example, the user can choose to just share the name of the workout and the overall time for completion, or they can include all the details of the workout including their own comments. The user will be offered the option to keep the two apps linked for future posting, avoiding the need to login again.

The app will include an options menu so that the user can personalise the audio and visual aspects, notification settings, and workout intensity level. The user can personalise the display with a few colour and style themes on offer. The volume of the background music and general audio can be raised or dimmed to suit the user's preferences. They can also select their workout intensity with selections ranging from beginner, easy, medium, and hard. All of this will be in a clean, easy to read format. They can also change the frequency of notification settings and choose if they would like a picture, graphic, quote, or just a standard notification to accompany the alert sound, offering a handful of basic sound options.

Due to the busy schedule parents manage, this app will come with an advanced notification system which will remind the user multiple times throughout the day. However, instead of repetitive or even at times irritating notifications, these notifications will have inspirational and motivational quotes. These inspirational quotes may prompt the users into the motivation they need to start the workout despite being tired or busy. Users have the choice to pre-set their workout times and the notifications will start ringing before the set time to stimulate the users before the workout begins. Notifications will also be sent when the workout has been scheduled so the user will not forget to start their workout. Notifications will also include the progress of the user, including commendations for their achievements and a reminder of how close they are towards reaching their next goal. Versatile Fitness app will include a goal system which will be created by how many days and the duration they exercise for. Consecutive days of workouts will boost the points higher, helping them to complete a level. The difficulty of the workouts will increase gradually with the intensity of the workout and how many times they workout.

Users can decide to make their progress and achievements private or public and share it on the forum available to all users on the main screen of the app. The purpose of this forum will be for users to share their progress with everyone and encourage each other to keep going. Users can interact with each other about their challenges and struggles, how they have overcome such challenge, what schedule works for them or what doesn't and have the option share workout videos with themselves and their children. This could motivate other parents who are starting off or going through a slump to pick up and continue. Further, this forum could promote the fun sides of working out, especially participating with children together. Workouts will have an automatic save function when each workout is completed as well as the user's progress. If the user decides to create an account, they can save their progress onto the cloud storage to back it up. This means the user can use multiple devices with their account and keep their progress. Also, if the user loses the data on

their app, since the cloud storage will still have the data that was saved, the user can restore their lost data at any time.

When a user signs into Versatile fitness, they will be able to create a profile with multiple attributes and have the option to create their own routines. From the main screen there will be a section that takes them to their profile where they will have access to their saved routines, or a button to create a routine. When selecting to create a routine, a page will open that allows the user to drag individual exercises into a list and rearrange the order of the exercises. After all exercises are added they will have the option to select how long the workout should go for and how long for rest periods, or choose how many reps to complete per exercise, how many sets of each exercise needs to be performed, and how long the rest periods are. When the user selects a max workout time the app will automatically assign reps to each exercise and how many sets to perform (a single set is considered completing all the reps and exercises, so two sets is performing all exercises and reps twice through). The other option is to select how many reps to perform per exercise, how many sets of the entire workout to perform, and how long the rest period is between sets. For example, the user adds squats, calf raises, lunges, and burpees to their list, they select 30 reps per exercise, followed by 2 sets of the workout with 1 minute rest time. The app will then calculate how long the exercise should go for, using the example, it will estimate a total of 2 seconds per rep, equaling 2 minutes to complete one set so a total workout time will be 5 minutes (including the rest time).

Versatile Fitness will include a unique function to incorporate children that may be joining their parents in the selected workout. This feature will be available via a prompt asking if any children will be working out with you; after you select your desired workout from the main workout page. If you select “no”, the workout you selected will begin. However, if you select “yes”, a list will appear of pre-set workouts you can choose from that are more child friendly. This means that exercises such as running in place, jumping movements, and other movements that can potentially be dangerous If a child gets too close, will be removed from the workout and replaced with more static exercises. Furthermore, there will be a history page from the main screen for viewing your workout history. It will include a list that has the date, time, the name of the pre-selected or custom workout, intensity, workout length, if any exercises were skipped, and if a child was working out with you. There will be a graph when you first open the page that combines your data and displays it in a way to show your progress, so you can see how far you have come. Another vital feature is an automated voice that announces the workout name and the reps to be completed when you start an exercise or select the next button. This feature is to allow the user to focus on the exercises rather than needing to stare

at the screen while working out. The final feature will allow the user to run a music app in the background such as Spotify. This feature will allow music to play during your workout without cutting off the music when the app has sound output. Instead, the app's sound output will be 100% volume (as selected by mobile devices sound settings), and the music player's sound output will dim to 50% of total volume during the announcement.

Tools and Technologies

To create the Versatile Fitness smartphone app, multiple tools will be required. Firstly, extensive consultation with knowledgeable fitness professionals will be required to ensure the fitness advice is accurate and suits the goals of Versatile Fitness; to provide people with fast, accessible, and family friendly fitness alternatives. For development of the application a computer with 64bit Windows 8 or 10 will be required with at least 8GB of RAM, 8GB storage space and a screen with minimum resolution of 1280 x 800 (Google Developers n.d). Due to development being a collaborative effort an internet connection will be required with at least 10Mbps download and upload speed for sharing large files with the team. We have chosen Kotlin/Java as the language for Versatile Fitness because of the powerful development tools that come with it. We will be using Android SDK which is a free opensource software development kit that contains Android Studio, the Gradle build tool, Android Emulator, and many other tools that are useful in the development process.

To assist in writing the code the development team will use Android Studio which is an Integrated Development Environment (IDE) that is specifically designed for developing Android applications and is compatible with both Kotlin and Java programming language. An IDE "enables programmers to consolidate the different aspects of writing a computer program" (Codecademy 2021, para. 2). We have chosen Android Studio over other options such as Eclipse or Visual Studio because it is the recommended tool for development by Google. Furthermore, Android Studio uses Gradle as a build tool, rather than the more dated and broad Apache ANT tool used by Eclipse (StackShare 2021). A build tool assists with compiling, packaging, deploying, and testing code which are all very time-consuming tasks if done manually. Finally, an android emulator will be essential in the development process, this will allow the development team to implement and test the application on their PC or laptop rather than having to own an android device. An emulator allows developers to test their application on many different devices through software without needing to have access to the physical devices.

Skills Required

The main skills required for this project will include advanced programming skills with knowledge in Java and Kotlin programming languages (Percival & Stock 2021). An understanding of how Android Studio operates and how to navigate this software would also be of importance. The team's current level of experience with Java and Kotlin, and experience with Studio, are basic to minimal. A quick online search shows that there are paid courses in everything required as well as free YouTube videos on the topics, all which should aid in the creation of the Versatile Fitness app. The online courses available teach everything from the basic skills necessary to advanced options. With a bit of extra study and lots of practice the team believe that attaining the skills required for this project will be plausible. A basic understanding of fitness and workout routines would also be an advantage but as the team would be working with an experienced Personal Trainer or Fitness Instructor in the creation of the workout videos then that knowledge can also be learned.

Outcome

As previously mentioned, many parents choose to neglect fitness within their busy schedules and find it difficult to create and maintain a workout routine. Also, as much as fitness is important for parents promoting a healthier lifestyle it is important to children in developing their personality. Hence, if this project is successful, busy parents could use this app to achieve their fitness goals, step by step, whether it be weight loss, being more active, or adding to their current exercise routines so they could spend more time with their kids. Parents will not feel the pressure to be away from their children, especially if they are younger in age, to exercise. Rather, this app will encourage parents to exercise in the space and time they have, and the equipment available to them while spending time with their children. The features of this app will assist in eliminating the original problems of time limitations or motivation to become more active and start exercising. We believe the overall impact will be more active parents that are less sedentary, healthier, and happier with their body image. This in turn will promote children to be more active and will support a healthy home environment.

[Back to Table of Contents]

Group Reflection

Bryce

Our group meshed well together with great communication. We set our meetings and deadlines early and all completed our sections by the deadlines. We started out well but needed to increase our pace towards the end, I feel we can improve on our motivation and priorities during the festive seasons. I was surprised at the trust level involved when relying on everyone to meet deadlines. I learned when working in a group, managing deadlines and expectations requires lots of communication.

Hannah

I believe our group had fantastic communication. This had a positive effect on the group environment, and everyone was always respectful. It was surprising that everyone was honest about their schedule, and everyone was respectful and cooperative with each other. Despite unexpected occurrences all members strived to complete their assigned tasks. One thing we could improve is maintaining our pace with our studies. Especially working through the pandemic, many of us seemed worn out and this presented a challenge.

Noah

I consider myself lucky when it comes to our group for assignment 2. What started as a bond over general interests has turned into a solid foundation for a group. Everyone turned up to every meeting on time and all contributed a satisfactory amount. Throughout the assignment we supported each other's work through MS team's chat. While it was work focused, we managed to slip support and interest for each other's personal lives into the chat and for that I am grateful.

Daniel

Our group worked very well together, we were motivated and supportive of each other. We effectively identified the project areas that required the most effort and set deadlines early to get them out of the way. I was surprised by how much communication is required in a group setting to organise deadlines. I learned that meetings work much better when they are well organised with an agenda. One area we could improve on is providing feedback on each other’s work.

Rhiannon

Our team worked well together, our communication was great, and we completed the work while enjoying ourselves. Everyone was polite and respectful. I joined late and had trepidations about having enough to contribute but I wasn't made to feel that way, we all supported each other. I think our group could improve on our motivation, especially towards the end. Overall, the Internet Explorers are a great group of people and I look forward to working with them again.

Back to Table of Contents

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Back to Table of Contents

Appendix

Back to Table of Contents

1. Please tell us about your IT work. What exactly do you do?

2. What is the main programming language you use?

3. Please tell us about the industry you work in.

4. What other kinds of work do you have to do?

5. Is debugging a program a long process?

6. Do you use Github?

7. Who are all the different people you interact with in your work? Please tell us about them.

8. Please tell us about your interactions with other IT professionals.

9. How helpful are other programmers comments when looking at their code?

10. What about your interactions with clients or investors?

11. What aspects of your work do you spend most time on? Please tell us about these.

12. Which aspects of your work do you find most challenging?

13. Are you working on any projects related to the field, outside of work?

14. You work in Software Development, did you consider any other IT fields? If so, why did you choose current field?

15. Finally, can you share an example of the work you do that best captures the essence of the IT industry?

Video Interview transcript:

00:00:00.000 --> 00:00:08.880
Noah Etherington
And with solid right? I guess I'll just introduce everyone to everyone, so this is Joel. Here's the IT professional we've chosen to interview.

00:00:09.680 --> 00:00:10.170
Noah Etherington
Uhm?

00:00:10.680 --> 00:00:12.460
Noah Etherington
Gelwicks a big tin can.

Return to start of Appendix

1. Please tell us about your IT work. What exactly do you do?

00:00:13.380 --> 00:00:17.240
Noah Etherington
Now Joe, would you like to tell us about your idea working exactly what you do?

00:00:18.030 --> 00:00:23.390
Joel (Guest)
Yeah, sure, So what I do is design and create a web API's.

00:00:24.480 --> 00:00:32.910
Joel (Guest)
Uh, so we make them publicly accessible so that we can write use them for our own applications, and clients can use them to make their own tools as well.

00:00:34.030 --> 00:00:37.210
Joel (Guest)
Uhm, we use C sharp and ASP net core.

00:00:38.220 --> 00:00:41.470
Joel (Guest)
Roll that up and it's works really smoothly.

00:00:42.460 --> 00:00:46.870
Joel (Guest)
Uh, and then in my team the Hobart team, which is a small part of the company.

00:00:48.130 --> 00:00:51.550
Joel (Guest)
We work on integrating a bunch of our different products together.

00:00:52.580 --> 00:00:56.130
Joel (Guest)
So that people can jump between them and do fancy things like that.

00:00:57.630 --> 00:00:58.200
Noah Etherington
Sorry.

Return to start of Appendix

2. What is the main programming language you use?

00:00:59.700 --> 00:01:05.510
Bryce McKerlie
So you said C sharp was it is that one of the main ones in software development this day and age?

00:01:05.830 --> 00:01:08.180
Joel (Guest)
If you ask me, I think it's the only one you should be using.

00:01:09.310 --> 00:01:10.030
Bryce McKerlie
Too easy.

00:01:10.160 --> 00:01:23.780
Joel (Guest)
Uh, it's been on the up and up if you know it. It's Microsoft's language and they've supported it really well over the last two decades, and it just keeps getting better every year. Unlike its languages like Java, there's stagnated.

00:01:10.190 --> 00:01:10.730
Daniel Coles
But tonight.

00:01:24.380 --> 00:01:26.670
Joel (Guest)
And never improved.

00:01:25.440 --> 00:01:25.890
Daniel Coles
OK.

00:01:28.090 --> 00:01:28.600
Bryce McKerlie
Too easy.

00:01:29.160 --> 00:01:29.590
Joel (Guest)
Yeah.

Return to start of Appendix

3. Please tell us about the industry you work in.

00:01:29.740 --> 00:01:32.320
Bryce McKerlie
Would you be able to tell us about the industry you work in?

00:01:33.290 --> 00:01:37.870
Joel (Guest)
Yes, so I'm we make salesman sales enablement software, so there's some.

00:01:38.960 --> 00:01:44.160
Joel (Guest)
The software for helping salespeople sell more stuff and be better salesman.

00:01:42.930 --> 00:01:43.310
Bryce McKerlie
Oh

00:01:45.340 --> 00:02:04.960
Joel (Guest)
Uh, so it involves letting its software as a service. You've probably heard that. So we sort and subscriptions to different clients, and they have their own admins and they set up their own instance and they have content for their employees to use. So it's kind of a multi leveled thing going on.

00:02:07.110 --> 00:02:13.270
Joel (Guest)
It's it's interesting. There's a quite a few big names we've got. Apple Google Naik DXC.

00:02:14.900 --> 00:02:19.770
Joel (Guest)
They all really like it and keep asking for more and bringing on more clients so.

00:02:20.770 --> 00:02:23.900
Joel (Guest)
About it's a yeah, it's pretty good.

00:02:20.910 --> 00:02:22.340
Daniel Coles
Just some big clients.

00:02:21.070 --> 00:02:21.710
Bryce McKerlie
that's awesome.

00:02:23.970 --> 00:02:27.860
Joel (Guest)
Uhm, the company is from Sydney.

00:02:28.850 --> 00:02:34.180
Joel (Guest)
And quickly spread to the US about 99% of our revenue comes from the US now.

00:02:28.870 --> 00:02:29.270
Bryce McKerlie
Yep.

00:02:34.870 --> 00:02:42.590
Joel (Guest)
And the split of employees is about, I'd say 30% Australia and the other half.

00:02:35.450 --> 00:02:35.800
Rhiannon Lloyd
Correct?

00:02:43.380 --> 00:02:49.950
Joel (Guest)
Not the other half. The remaining is a lot in the USA, couple in Israel, couple in Glasgow.

00:02:51.100 --> 00:02:52.400
Joel (Guest)
One or two in Hong Kong.

00:02:54.110 --> 00:02:54.950
Joel (Guest)
Uhm?

00:02:57.100 --> 00:02:58.810
Joel (Guest)
Most of the US teams in Portland.

00:02:59.700 --> 00:03:00.680
Joel (Guest)
Some in New York.

00:03:01.450 --> 00:03:02.140
Bryce McKerlie
Yeah, well.

00:03:02.450 --> 00:03:02.770
Joel (Guest)
Yeah.

00:03:02.710 --> 00:03:03.230
Rhiannon Lloyd
OK.

00:03:03.660 --> 00:03:06.890
Joel (Guest)
Now I'm down there, so what's the people in Australia in Sydney?

00:03:07.470 --> 00:03:10.210
Joel (Guest)
The Sydney office. And then there's about 10 of us down Hobart.

00:03:12.600 --> 00:03:13.150
Daniel Coles
Cool.

00:03:13.680 --> 00:03:14.160
Bryce McKerlie
Yeah, that.

Return to start of Appendix

4. What other kinds of work do you have to do?

00:03:13.710 --> 00:03:18.830
Rhiannon Lloyd
So what other kinds of work do you have to do as a part of your job?

00:03:21.020 --> 00:03:28.540
Joel (Guest)
So we have a ticketing system, JIRA. Some of you might have used. It's like creating tickets that project managers love to create lots of tickets.

00:03:29.230 --> 00:03:30.280
Joel (Guest)
And we.

00:03:31.020 --> 00:03:34.820
Joel (Guest)
Tick them off 1 by 1, sort them by priority, things like that.

00:03:35.560 --> 00:03:41.210
Joel (Guest)
There's a lot of meetings. Zoom meetings because it's a global company. Before COVID, they're still using zoom.

00:03:40.770 --> 00:03:41.260
Rhiannon Lloyd
Uh-huh

00:03:41.630 --> 00:03:42.000
Daniel Coles
Yep.

00:03:43.060 --> 00:03:50.650
Joel (Guest)
Uh, so let's uh coordination has to happen, especially when because I work on the integration. Like I mentioned before, linking different products I've had to talk to a lot of different people.

00:03:51.250 --> 00:03:58.310
Joel (Guest)
And it gets quite annoying with time zones and things like that, so it's quite a bit of time wasted doing coordination.

00:03:59.110 --> 00:04:02.960
Joel (Guest)
Some sometimes doing meetings after work hours with other Glasgow team.

00:03:59.230 --> 00:03:59.700
Bryce McKerlie
uh.

00:04:04.310 --> 00:04:04.890
Joel (Guest)
Uhm?

00:04:04.610 --> 00:04:05.100
Daniel Coles
Umm?

00:04:05.520 --> 00:04:13.260
Joel (Guest)
There's peer code reviews, so doing reviewing each other's work and that's really great for learning really quickly.

00:04:13.990 --> 00:04:17.720
Joel (Guest)
A little bit in the last year, just from the feedback you get.

00:04:14.290 --> 00:04:14.600
Rhiannon Lloyd
K.

00:04:18.760 --> 00:04:23.510
Joel (Guest)
Every now and then I just work on the back end API stuff, but every now and then I do a little bit of front end.

00:04:19.000 --> 00:04:19.320
Daniel Coles
2.

00:04:25.240 --> 00:04:29.680
Joel (Guest)
For making tests, applications or just to help out the front end teams if they need it.

00:04:30.590 --> 00:04:38.520
Joel (Guest)
And another part is chasing down bugs so our bugs in the production systems that you have to check through the logs and.

00:04:39.220 --> 00:04:48.200
Joel (Guest)
Look through the diagnostics and try and track down. You can some if you're lucky fish outs their clients email to find out who experienced the bug and chase them up.

00:04:49.410 --> 00:04:51.350
Daniel Coles
Yeah, but it detective work.

00:04:50.480 --> 00:04:52.150
Bryce McKerlie
Can that be? Yeah yeah.

00:04:51.090 --> 00:04:51.580
Rhiannon Lloyd
OK.

00:04:51.710 --> 00:04:52.920
Joel (Guest)
Yeah, Detective work, yeah?

00:04:53.180 --> 00:04:53.690
Daniel Coles
That's cool.

00:04:53.210 --> 00:04:53.780
Rhiannon Lloyd
Uh-huh

[Return to start of Appendix]

5. Is debugging a program a long process?

00:04:53.490 --> 00:04:58.490
Bryce McKerlie
Is that a lengthy process like trying to debug? If you can't find the person that experienced it?

00:04:59.400 --> 00:05:02.050
Joel (Guest)
If you can't find the person makes a lot more tricky, yeah?

00:05:02.740 --> 00:05:05.760
Joel (Guest)
We tried to set up logging as best we can.

00:05:06.520 --> 00:05:13.230
Joel (Guest)
So 'cause your production systems, you know that you're not running them like in Visual Studio or where you can just debug one by line. You just have a few.

00:05:13.820 --> 00:05:15.560
Joel (Guest)
Aligns spit out into a.

00:05:16.690 --> 00:05:23.000
Joel (Guest)
As Pro Stream processing program called Fluent Bit and then that gets put into another one called Cabana.

00:05:23.720 --> 00:05:29.020
Joel (Guest)
Uhm, Cabana lets us look through the logs and put tons of filters and sort by and stuff like that.

00:05:29.680 --> 00:05:31.650
Joel (Guest)
And because we use structured logging.

00:05:33.810 --> 00:05:39.190
Joel (Guest)
It it puts the logs out in understandable Jason format and we can actually filter by the text.

00:05:40.120 --> 00:05:40.680
Joel (Guest)
Uhm?

00:05:40.230 --> 00:05:44.460
Daniel Coles
Till what we're talking about looks. Did you guys get caught up in that log 4 J scandal?

00:05:45.120 --> 00:05:46.290
Joel (Guest)
No, because we've heard Java.

00:05:47.110 --> 00:05:48.580
Daniel Coles
Ah, that's just Java. Or is it?

00:05:48.870 --> 00:05:50.690
Joel (Guest)
Yeah, log 4 J is logged for Java.

00:05:49.280 --> 00:05:50.070
Daniel Coles
Yeah, right?

00:05:51.360 --> 00:05:53.770
Daniel Coles
OK, cool, so you're you're safe.

00:05:52.170 --> 00:06:01.030
Joel (Guest)
Yeah, I found we used it on one internal tool that does our tests and it wasn't. It was like a plug in for that internal tool so we just disable that is all good.

00:06:01.500 --> 00:06:02.070
Daniel Coles
Nice.

00:06:02.070 --> 00:06:05.210
Joel (Guest)
But yeah, that look for J stuff was horrible. Four different vulnerabilities.

00:06:05.760 --> 00:06:08.080
Daniel Coles
It's pretty crazy. Yeah, writing about it.

00:06:08.390 --> 00:06:08.810
Joel (Guest)
Yep.

Return to start of Appendix

6. Do you use Github?

00:06:09.570 --> 00:06:16.420
Daniel Coles
And so I just want to expand on the one where you said you you work with colleagues and like over their code. Do you use GitHub for that?

00:06:17.620 --> 00:06:19.680
Joel (Guest)
Uh, it's very similar to GitHub. We use Bitbucket.

00:06:20.170 --> 00:06:20.660
Daniel Coles
OK.

00:06:20.470 --> 00:06:21.540
Bryce McKerlie
Ah yes.

00:06:21.330 --> 00:06:22.160
Rhiannon Lloyd
Alright, yeah.

00:06:22.300 --> 00:06:25.190
Joel (Guest)
If you know Bitbucket is made by Atlas Ian.

00:06:25.960 --> 00:06:27.280
Joel (Guest)
Uh Australian company.

00:06:28.150 --> 00:06:38.480
Joel (Guest)
And they also make JIRA and sultry in confluence, so they kind of just sell it to us as the whole packet. All those things at once and we use I. I actually kind of like GitHub more.

00:06:39.190 --> 00:06:40.060
Daniel Coles
yeah it's a.

00:06:39.660 --> 00:06:45.410
Joel (Guest)
But then there's things like JIRA where the ticket is the ticket management system is way better than what GitHub has so.

00:06:46.140 --> 00:06:46.560
Daniel Coles
OK.

00:06:47.080 --> 00:06:55.570
Joel (Guest)

And they integrate well together, like, Umm, when I make a PR like pull requests for hurting ticket, you can click the title of the PR and we'll take it to the ticket so it just works better.

00:06:56.680 --> 00:06:57.020
Daniel Coles
Right?

00:06:57.790 --> 00:06:58.170
Joel (Guest)
Yeah.

Return to start of Appendix

7. Who are all the different people you interact with in your work? Please tell us about them.

00:06:58.730 --> 00:07:02.240
Hannah Son
And in your job, who are the different people you get to interact with?

00:07:03.460 --> 00:07:04.400
Joel (Guest)
I'm so.

00:07:05.800 --> 00:07:12.160
Joel (Guest)
It's quite small, office down Hobart. I have my team lead supervisor who's mentored me and.

00:07:12.730 --> 00:07:14.290
Joel (Guest)
Manages the projects that I work on.

00:07:15.000 --> 00:07:25.750
Joel (Guest)
Uh, maybe they told me what to do and what's priority. If there's customers that need help, then I chased that up and they give me the valuable feedback that I've learned so much from.

00:07:26.680 --> 00:07:34.890
Joel (Guest)
Every now and then I interact with some of the project managers, so they're the people that managed the clients, as in like.

00:07:35.830 --> 00:07:42.790
Joel (Guest)
Nakia whatever, and they talked to them and they figure out what the customer wants and then give that to the lead dev.

00:07:44.380 --> 00:07:49.180
Joel (Guest)
But 'cause I've been working on some new projects I've been mixing with the project managers a bit and.

00:07:50.290 --> 00:07:53.310
Joel (Guest)
They mostly based in America and they kind of got that.

00:07:54.890 --> 00:07:58.270
Joel (Guest)
Big thinking ahead on where they think everything is the next big deal.

00:08:00.110 --> 00:08:00.880
Daniel Coles
I gotta sell it.

00:08:01.020 --> 00:08:02.660
Joel (Guest)
Yeah, they gotta fill it. Yeah, that's right.

00:08:03.640 --> 00:08:04.140
Daniel Coles
Nice.

00:08:03.650 --> 00:08:08.480
Joel (Guest)
Uh, and then there's just some software engineer. P is just like me who were just writing software.

00:08:10.520 --> 00:08:17.280
Joel (Guest)
I don't. I don't have many 'cause I work on a couple of small like a variety of other small projects, so it's usually just want two or three devs.

00:08:18.380 --> 00:08:21.310
Joel (Guest)
But one of our products do nose has like.

00:08:22.260 --> 00:08:24.400
Joel (Guest)
15 coders.

00:08:25.570 --> 00:08:25.940
Daniel Coles
K.

00:08:26.260 --> 00:08:27.780
Joel (Guest)
Which I sometimes have to talk to.

Return to start of Appendix

8. Please tell us about your interactions with other IT professionals.

00:08:29.990 --> 00:08:41.080
Daniel Coles
Alright, well I think my question is kind of answered that I was gonna ask you about your

interaction with other IT professionals may be outside your job or outside your company. Do you interact with other IT professionals?

00:08:41.860 --> 00:08:45.490
Joel (Guest)
A tiny bit, uh, I do some open source development.

00:08:47.350 --> 00:08:58.000
Joel (Guest)
Not terribly, not like Linux kernel. We'll have to talk a lot, but I make some of my own projects and some people use them and sometimes they make PR's really.

00:08:58.740 --> 00:08:59.900
Joel (Guest)
So that's nice.

00:08:59.030 --> 00:08:59.380
Daniel Coles
OK.

00:09:01.820 --> 00:09:05.010
Joel (Guest)
In the company there's a little bit of.

00:09:02.130 --> 00:09:02.480
Daniel Coles
Movie.

00:09:06.090 --> 00:09:11.460
Joel (Guest)
Splitting into teams, and there's the Sooners team and hub team in Sydney and.

00:09:12.310 --> 00:09:18.530
Joel (Guest)
They kinda. There's like boundaries between them and when you start to so I every now and then because I integrate things I find a lot of problems in teams.

00:09:19.160 --> 00:09:28.090
Joel (Guest)
And I fanfan problems in all the time, not to bad talk them, and sometimes they have to go talk to them and as soon as you cross that boundary.

00:09:28.700 --> 00:09:30.120
Joel (Guest)
Between the teams, there's a.

00:09:30.860 --> 00:09:31.700
Joel (Guest)
Assumed.

00:09:32.680 --> 00:09:34.790
Joel (Guest)
Extra level of professionalism where you talk.

00:09:35.590 --> 00:09:43.860
Joel (Guest)
More eloquently, you just say how this gets broken. You try and write it up. Makes make a step of steps of how to reproduce.

00:09:44.590 --> 00:09:49.060
Joel (Guest)
And things like that, or what company were using? Did you find the bug and things like that?

00:09:49.810 --> 00:09:56.750
Joel (Guest)
Uhm, every now and then I do try and if I can fix it myself, contribute code to their repo, which is pretty rare.

00:09:57.430 --> 00:10:03.370
Joel (Guest)
Feels like I'm on this team. Your teams over there, but I'll try and modify your stuff and say hey, how's this change look?

00:10:04.070 --> 00:10:04.560
Daniel Coles
Right?

00:10:04.390 --> 00:10:04.940
Joel (Guest)
Uhm?

00:10:05.760 --> 00:10:09.600
Joel (Guest)
So that's a bit different. It feels almost like working with a different company sometimes.

00:10:10.230 --> 00:10:12.680
Joel (Guest)
Between the teams, just because they're pretty separated.

00:10:10.800 --> 00:10:11.680
Daniel Coles
That's interesting.

00:10:13.230 --> 00:10:13.680
Daniel Coles
Yeah.

[Return to start of Appendix]

9. How helpful are other programmers comments when looking at their code?

00:10:14.360 --> 00:10:18.270
Daniel Coles
And how and when you're looking at other peoples codes? How helpful is there? Are there comments?

00:10:19.780 --> 00:10:20.560
Daniel Coles
In the cards.

00:10:20.950 --> 00:10:24.050
Joel (Guest)
I'm I have this stupid thing where I skip over the comments.

00:10:24.200 --> 00:10:24.540
Daniel Coles
OK.

00:10:25.630 --> 00:10:28.280
Daniel Coles
You think it's louder than the comments? He's going straight for the code.

00:10:25.920 --> 00:10:26.370
Joel (Guest)
Uh.

00:10:27.920 --> 00:10:32.350
Joel (Guest)
Yeah I guess so. Yeah, uh, some stupid is assumed that I.

00:10:29.780 --> 00:10:30.170
Daniel Coles
Fair enough.

00:10:33.020 --> 00:10:37.980
Joel (Guest)
The comments are not useful 'cause a lot of people write bad comments. They they right? What's the obvious is.

00:10:38.400 --> 00:10:38.790
Daniel Coles
Yep.

00:10:38.910 --> 00:10:44.920
Joel (Guest)
Whereas sometimes, though, be trying to work something yeah, and then I'll notice there's a big comment block in arenas. OK, that works.

00:10:45.530 --> 00:10:45.940
Joel (Guest)
Uh.

00:10:46.750 --> 00:10:52.760
Daniel Coles
It's now it's better, I mean processor and intro to programming. We're just getting slammed with comments at the moment.

00:10:47.860 --> 00:10:48.610
Joel (Guest)
Yeah, the.

00:10:53.180 --> 00:10:55.190
Bryce McKerlie
Ah, so it's justification comments.

00:10:55.220 --> 00:10:55.680
Daniel Coles
Horrible.

00:10:56.950 --> 00:10:59.140
Joel (Guest)
So what's that they want you to run? More comments or?

00:10:57.120 --> 00:10:57.620
Daniel Coles
That's good.

00:10:59.330 --> 00:11:02.610
Daniel Coles
Well, yeah, they're just driving home. How important they are, so I figured I'd ask you.

00:11:03.240 --> 00:11:04.010
Daniel Coles
Important.

00:11:03.360 --> 00:11:07.870
Bryce McKerlie
Yeah, every code block we do we have to say what now alternative?

00:11:08.820 --> 00:11:09.890
Bryce McKerlie
Code would have been.

00:11:10.560 --> 00:11:13.640
Daniel Coles
Yeah, every single variable has to be justified as well.

00:11:14.590 --> 00:11:20.460
Joel (Guest)
Yeah, I'm a big believer in self documenting code, so the code documents what it does despite it looking at it.

00:11:20.910 --> 00:11:21.270
Daniel Coles
Yeah.

00:11:21.030 --> 00:11:21.500
Joel (Guest)
Uhm?

00:11:22.260 --> 00:11:26.440
Joel (Guest)
Saying the variable length holds the length is not too useful.

00:11:26.780 --> 00:11:27.210
Daniel Coles
Yeah.

00:11:28.390 --> 00:11:34.380
Bryce McKerlie
Yeah, I spend a lot of time sitting there going. I only know one way to do this. How am I supposed to create an alternative here?

00:11:34.060 --> 00:11:36.540
Daniel Coles
Exactly, yeah, it's beautiful.

00:11:35.790 --> 00:11:43.270
Joel (Guest)
Yeah, now it's writing alternative. Sounds like something just for the markers soaked. Understand to see that you know that's not something that would do.

00:11:41.770 --> 00:11:42.330
Daniel Coles
Yeah.

00:11:44.390 --> 00:11:44.870
Bryce McKerlie
Awesome.

00:11:44.500 --> 00:11:45.200
Joel (Guest)
In the industry.

00:11:45.580 --> 00:11:47.270
Daniel Coles
Not a field in fairness.

[Return to start of Appendix]

10. What about your interactions with clients or investors?

00:11:48.640 --> 00:12:00.990
Noah Etherington
So I guess you've already talked about your interactions with the clients, because if it is examples of Nike and stuff like that, but I'm so I can ask you. If yeah, if you're happy too early, could even touch on the investors if you are familiar with those.

00:11:55.400 --> 00:11:56.830
Joel (Guest)
Uh, I can touch on that a bit more.

00:11:57.990 --> 00:11:58.450
Joel (Guest)
Yeah.

00:12:01.430 --> 00:12:05.410
Joel (Guest)
Yeah, he's not. I'm touching on is that I'm not familiar with them.

00:12:06.400 --> 00:12:10.750
Joel (Guest)
Because it's quite a big company, there's many layers and I don't.

00:12:08.230 --> 00:12:09.320
Noah Etherington
Yeah, it's fair enough.

00:12:11.700 --> 00:12:14.620
Joel (Guest)
Usually ever talk to the client, so it goes through like.

00:12:15.280 --> 00:12:22.670
Joel (Guest)
Project manager to product owner to lead Dev to, then to scheduler and you know it's all that sort of scheduling in project management. Bull crap.

00:12:24.100 --> 00:12:27.890
Joel (Guest)
It goes through all the layers and I don't really ever have to talk to the outside.

00:12:28.630 --> 00:12:29.220
Joel (Guest)
Uhm?

00:12:30.570 --> 00:12:35.310
Joel (Guest)
Different company, I didn't think I'd ever be like that until I got in a big company and then.

00:12:35.920 --> 00:12:39.260
Joel (Guest)
It's like 'cause, uh, the other previous Java experience I had.

00:12:39.890 --> 00:12:44.410
Joel (Guest)
This to myself and my dad. He has a big client that we had some.

00:12:45.420 --> 00:12:48.740
Joel (Guest)
Like for plant management software systems.

00:12:49.390 --> 00:12:51.810
Joel (Guest)
And it's just him constant back and forth with the client.

00:12:52.610 --> 00:13:00.860
Joel (Guest)
And it works really well because they talking straight to the developer. You can get the needs across really well and they can say do you want to work with this? You want to look like this.

00:13:01.300 --> 00:13:01.580
Noah Etherington
Yeah.

00:13:01.840 --> 00:13:05.500
Joel (Guest)
When it works in the V company, sometimes the client doesn't exactly get what they wanted.

00:13:06.870 --> 00:13:10.780
Joel (Guest)
Uhm, well, sometimes you write too much. They didn't want that much.

00:13:11.780 --> 00:13:12.330
Joel (Guest)
Uhm?

00:13:13.420 --> 00:13:15.280
Joel (Guest)
But that can be remedied, UM.

00:13:15.930 --> 00:13:19.810
Joel (Guest)
It doesn't have to be like that in a big company, just they need to sort this stuff out.

00:13:22.530 --> 00:13:22.930
Joel (Guest)
1.

00:13:22.890 --> 00:13:31.800
Joel (Guest)
One thing I've heard is that when having meetings with the client, have the project manager, the product owner and stuff, but also include a senior developer.

00:13:32.660 --> 00:13:50.920
Joel (Guest)
Now that can be good to say to temporary expectations or get better accurate, more accurate expectations about timelines or features that can be delivered. But then you're taking the senior dev away from actually doing what they're supposed to be doing, which is writing and managing the code base.

00:13:42.080 --> 00:13:42.420
Bryce McKerlie
Uh-huh

00:13:52.310 --> 00:14:02.700
Joel (Guest)
So yeah, As for that number six? Yeah, basically don't interact with the clients investors, especially with the investors. There's a whole board of directors and the I've never. I don't know who any of them are.

00:14:04.290 --> 00:14:09.400
Bryce McKerlie
so is it like the project manager that usually does clients that you say earlier or.

00:14:04.440 --> 00:14:04.790
Noah Etherington
Yeah.

00:14:10.280 --> 00:14:19.530
Joel (Guest)
Yeah, it could be depending on the how big the project is. There could be someone who's actually dedicated to just being the client liaison.

00:14:20.150 --> 00:14:20.900
Bryce McKerlie
Ah, OK.

00:14:20.330 --> 00:14:20.980
Joel (Guest)
And.

00:14:21.890 --> 00:14:22.540
Joel (Guest)
Uhm?

00:14:23.140 --> 00:14:30.670
Joel (Guest)
You can hear the term sales engineer or customer success engineer, which is someone who doesn't actually engineer anything but they just talked to customers and help.

00:14:31.290 --> 00:14:34.610
Joel (Guest)
Uh, you know, get the project, get the product of work for them.

Return to start of Appendix

11. What aspects of your work do you spend most time on? Please tell us about these.

00:14:35.520 --> 00:14:40.490
Bryce McKerlie
Yeah, OK, So what aspects of your work do you spend most of your time on?

00:14:36.580 --> 00:14:37.020
Joel (Guest)
Yeah.

00:14:41.860 --> 00:14:42.410
Joel (Guest)
Uhm?

00:14:43.420 --> 00:14:47.800
Joel (Guest)
I like to think writing actual code and doing work, but like I said, there's a lot of.

00:14:48.520 --> 00:14:49.780
Joel (Guest)
Bullishness around.

00:14:50.500 --> 00:14:54.950
Joel (Guest)
Uhm, doing meetings and organizing tickets and doing code review.

00:14:55.750 --> 00:14:56.410
Joel (Guest)
Uhm?

00:14:57.010 --> 00:15:00.840
Joel (Guest)
I still think most the time would be spent on actually writing code.

00:15:02.110 --> 00:15:03.280
Joel (Guest)
Uh.

00:15:04.930 --> 00:15:12.010
Bryce McKerlie
Well that sounds great. I was kinda hoping for that. 'cause I was looking at or a couple of us are looking at going into software development I believe.

00:15:12.150 --> 00:15:12.430
Noah Etherington
Yeah.

00:15:12.920 --> 00:15:13.590
Bryce McKerlie
And yeah.

00:15:14.220 --> 00:15:20.110
Bryce McKerlie
Starting to wonder about what the actual thing would be like, but if we're writing code that still sounds good to me.

00:15:21.280 --> 00:15:33.060
Joel (Guest)
Yeah, I mean that's the part I enjoy. Uh, I really enjoy writing features are not fixing bugs, which was like the first first six months of my employment was hey go fix this bug and then they started. Trust me with features.

00:15:31.090 --> 00:15:31.610
Daniel Coles
Hello.

00:15:37.360 --> 00:15:38.370
Noah Etherington
It's only US 2.

00:15:39.020 --> 00:15:40.800
Noah Etherington
Uh, Rhiannon.

00:15:39.110 --> 00:15:40.340
Daniel Coles
#8

00:15:40.870 --> 00:15:41.620
Rhiannon Lloyd
Oh sorry.

00:15:41.920 --> 00:15:47.130
Rhiannon Lloyd
Uh, which aspects of yeah, sorry, I've got a dog trying to get up on my lap and.

00:15:45.800 --> 00:15:46.190
Daniel Coles
Oh good.

00:15:47.280 --> 00:15:48.610
Rhiannon Lloyd
'cause I click out shopping.

00:15:49.160 --> 00:15:49.670
Rhiannon Lloyd
Ah.

Return to start of Appendix

12. Which aspects of your work do you find most challenging?

00:15:50.820 --> 00:15:54.310
Rhiannon Lloyd
Which aspects of your work do you find most challenging?

00:15:55.490 --> 00:15:57.290
Rhiannon Lloyd
Go and try and scare itself.

00:15:55.800 --> 00:15:56.270
Joel (Guest)
Uhm?

00:15:59.710 --> 00:16:05.040
Joel (Guest)
I don't wanna scare you off. I mean it's a great job. Let's chat, let's challenging, but I'd probably say is the.

00:16:06.220 --> 00:16:13.280
Joel (Guest)
Code reviewing 'cause it can be a little boring, especially if it's a big review.

00:16:14.420 --> 00:16:20.030
Joel (Guest)
Uhm, that if there's a lot to look through and also sometimes it's just hard to offer any.

00:16:20.650 --> 00:16:24.690
Joel (Guest)
Valuable feedback is he saying, is this actually worth saying like questioning yourself?

00:16:25.250 --> 00:16:25.730
Rhiannon Lloyd
OK.

00:16:25.370 --> 00:16:36.960
Joel (Guest)
Uh, maybe that might just be because I'm a bit junior and I'm only reviewing my lead developers code then who's got like 30 years of experience? So like, yeah.

00:16:34.870 --> 00:16:36.280
Rhiannon Lloyd
Don't wanna upset the boss.

00:16:36.490 --> 00:16:36.910
Daniel Coles
Wow.

00:16:37.940 --> 00:16:45.920
Joel (Guest)
Uh, he's really great like he actually comes to me and asked sometimes, how do you think I should do this? But when I'm reviewing his code, it's like he's already thought of everything.

00:16:39.970 --> 00:16:40.220
Rhiannon Lloyd
Yeah.

00:16:46.240 --> 00:16:46.560
Daniel Coles
No.

00:16:47.470 --> 00:16:54.760
Joel (Guest)
So I just said go through it and look for it. Picks up sounds most challenging, but it probably go away in.

00:16:55.630 --> 00:16:59.430
Joel (Guest)
A few years when I have more experience, more opinions.

00:17:00.300 --> 00:17:04.040
Joel (Guest)
Uhm, and have maybe some juniors below me to coach.

00:17:05.530 --> 00:17:05.920
Rhiannon Lloyd
Yep.

Return to start of Appendix

13. Are you working on any projects related to the field, outside of work?

00:17:06.300 --> 00:17:20.320
Hannah Son
Wow, and actually Noah was telling us that when you're not working, you're developing this. You've got this really cool project going on, so we were wondering what kind of projects related to your field are you working on at the moment?

00:17:21.340 --> 00:17:21.910
Joel (Guest)
Uhm?

00:17:22.560 --> 00:17:26.340
Joel (Guest)
My one of them focused on at the moment is a game, UM.

00:17:27.170 --> 00:17:29.760
Joel (Guest)
It's a gem matching game. You know, like bejeweled.

00:17:30.550 --> 00:17:31.590
Joel (Guest)
But it's actually.

00:17:31.100 --> 00:17:32.440
Hannah Son
So like Candy Crush.

00:17:33.910 --> 00:17:36.650
Joel (Guest)
Candy Crush I don't like to think it's like any cuts, but there's a little bit.

00:17:37.320 --> 00:17:38.930
Rhiannon Lloyd
Let's say my mum would love it.

00:17:37.830 --> 00:17:38.280
Joel (Guest)
Uh.

00:17:40.740 --> 00:17:47.670
Joel (Guest)
Yeah, they love that stuff. They did up a. It's a it's two player so you both work on the same board.

00:17:48.410 --> 00:17:51.960
Joel (Guest)
And you take turns it if anyone paid puzzle quest, it's bit like that.

00:17:52.480 --> 00:17:53.210
Rhiannon Lloyd
OK, cool.

00:17:52.640 --> 00:17:53.210
Joel (Guest)
Uhm?

00:17:54.150 --> 00:18:05.590
Joel (Guest)
And it started off, uh, years ago where I just like I want to make like a a match three game. 'cause that's challenging my skills and I'd have to work with two D arrays. And you I'm writing in unity, by the way.

00:18:05.980 --> 00:18:12.210
Joel (Guest)
Uh, and all that sort of stuff, and then I found that gem matching code few months ago.

00:18:05.980 --> 00:18:06.370
Rhiannon Lloyd
Uh-huh

00:18:13.160 --> 00:18:14.500
Joel (Guest)
And I thought, uh?

00:18:15.120 --> 00:18:20.160
Joel (Guest)
Still challenge myself again. I'm going to try and make this multiplier and over a network, so I wrote my own networking stack.

00:18:20.880 --> 00:18:32.550
Joel (Guest)
It's all asynchronous, such As for games as like there's a server client, it's all separate into different projects. Learning all the things are using all the things that I learned from actual my employment.

00:18:33.330 --> 00:18:35.540
Joel (Guest)
And it's a really cool, UM.

00:18:36.180 --> 00:18:41.080
Joel (Guest)
I'm trying to get it polished up. I'm terrible at like old program is so.

00:18:41.630 --> 00:18:44.460
Joel (Guest)
Uh, it it looks like Ms paint at the moment.

00:18:45.090 --> 00:18:47.050
Joel (Guest)
But UM, functionally it works great.

00:18:47.250 --> 00:18:49.570
Daniel Coles
Cool, so do you actually host it yourself on a server?

00:18:50.240 --> 00:19:16.270
Joel (Guest)
That's the plan. When I release it. Yeah, so there's a server application that runs and I'll get the input that I can put that on Amazon. I could put it downstairs on my own server and get all the clients to point to that with a domain name and connect to that. At the moment I'm just using IPS, but yeah, I'll always pretty well and I've refactored the server. All the game logic code which was on the server to be in a shared library.

00:18:52.370 --> 00:18:52.680
Daniel Coles
OK.

00:19:16.970 --> 00:19:22.180
Joel (Guest)
And that means that I can have offline play and online play using this exact same code.

00:19:23.120 --> 00:19:23.690
Joel (Guest)
Uhm?

00:19:23.550 --> 00:19:24.480
Daniel Coles
That's awesome.

00:19:24.560 --> 00:19:26.540
Joel (Guest)
Yeah, using using interfaces.

00:19:25.710 --> 00:19:25.960
Daniel Coles
What?

00:19:26.750 --> 00:19:29.570
Daniel Coles
What platform are you aiming for? Is it on phone?

00:19:28.890 --> 00:19:36.600
Joel (Guest)
Everything so I want to write controls support soon so I can get it on like the consoles and also for accessibility support because.

00:19:30.610 --> 00:19:30.930
Daniel Coles
OK.

00:19:34.340 --> 00:19:34.870
Daniel Coles
Yeah.

00:19:37.320 --> 00:19:43.390
Joel (Guest)
Uhm, say what people have to use joysticks and things like that all the time. Some of them actually use touch screens or lot.

00:19:44.170 --> 00:19:49.120
Joel (Guest)
And a mobile, UM NPC like get it on steam and stuff.

00:19:49.430 --> 00:19:50.020
Daniel Coles
Yeah, cool.

00:19:50.680 --> 00:19:56.070
Joel (Guest)
OUA maybe to use all the same code base for all platforms, because you can do that sort of stuff with unity.

00:19:57.270 --> 00:19:57.710
Daniel Coles
Right?

00:19:58.240 --> 00:20:04.330
Joel (Guest)
And a couple other projects. I got one my biggest project G chains almost got 1000 downloads now.

00:20:05.030 --> 00:20:06.680
Joel (Guest)
It's open source on GitHub.

00:20:05.140 --> 00:20:05.850
Hannah Son
Well.

00:20:05.880 --> 00:20:06.320
Rhiannon Lloyd
Oh

00:20:07.290 --> 00:20:11.070
Joel (Guest)
And that's a automated scraper for 4 Chan and 8 Chan.

00:20:11.910 --> 00:20:17.210
Joel (Guest)
Uhm, I picked that up as a fork a few years ago and greatly improved it.

00:20:12.050 --> 00:20:12.460
Daniel Coles
Right?

00:20:19.020 --> 00:20:26.920
Joel (Guest)
And that's definitely one that gets the most attention. And I have another one called Solder Express, which I've put way more attention to. But on these like 20 downloads.

00:20:27.920 --> 00:20:28.440
Joel (Guest)
Uhm?

00:20:28.050 --> 00:20:28.660
Daniel Coles
What's it do?

00:20:29.130 --> 00:20:41.670
Joel (Guest)
It's made for this sorting through images manually, so you can do that by hand. Obviously using Windows Explorer, but it's aimed aimed to greatly increase the speed that you do it it so it has a tagging system.

00:20:41.720 --> 00:20:49.010
Joel (Guest)
Uh, image recognition system to find duplicates in your file structure file. Like it directories and stuff.

00:20:49.690 --> 00:20:55.430
Joel (Guest)
Uh, it's all. It's all all that stuff. The game and those two projects or C sharp as well.

00:20:56.230 --> 00:20:56.580
Daniel Coles
OK.

00:20:56.470 --> 00:21:05.580
Joel (Guest)
Uhm, the two software there genius of expressive both win forms, which is an outdated technology for writing Windows applications, but.

00:21:06.300 --> 00:21:07.050
Joel (Guest)
I still like it.

00:21:08.320 --> 00:21:10.410
Joel (Guest)
But you can't write cross platform stuff with it.

00:21:08.340 --> 00:21:08.770
Daniel Coles
Yeah.

00:21:10.530 --> 00:21:10.880
Rhiannon Lloyd
He

00:21:10.630 --> 00:21:12.000
Daniel Coles
Ah, OK limitation.

00:21:11.630 --> 00:21:14.170
Joel (Guest)
But that was the ones that I started in.

00:21:15.800 --> 00:21:16.490
Joel (Guest)
College.

00:21:19.020 --> 00:21:24.710
Joel (Guest)
And that was when I found that software development is actually can be a lot of fun.

00:21:25.530 --> 00:21:28.680
Joel (Guest)
And before that I do sister right mess around writing games all the time.

00:21:30.590 --> 00:21:38.470
Joel (Guest)
And that really the two different base, right it? Writings, programming, games and programming software is really two different paradigms.

00:21:40.650 --> 00:21:41.060
Joel (Guest)
The.

00:21:40.740 --> 00:21:41.860
Daniel Coles
Which one is harder, do you think?

00:21:45.840 --> 00:21:46.780
Noah Etherington
it's not even the defense.

00:21:46.440 --> 00:21:49.790
Joel (Guest)
I think games are harder to get your head around because.

00:21:50.540 --> 00:22:04.730
Joel (Guest)
You have lots of things all happening at the same time, like you have five enemies on screen and the player and the camera and they're all executing their logic at the same time, and that's quite hard to get your head around, especially when you don't know anything about thread safety.

00:21:54.350 --> 00:21:54.780
Daniel Coles
Yeah.

00:22:05.730 --> 00:22:07.020
Joel (Guest)
Uh, multithreading?

00:22:07.790 --> 00:22:08.120
Daniel Coles
OK.

00:22:08.570 --> 00:22:09.260
Joel (Guest)
And.

00:22:11.180 --> 00:22:19.840
Joel (Guest)
But which is really fun to think about and get your head around? And when you do it feels really rewarding. But software development has its own rewards, like setting up your.

00:22:20.720 --> 00:22:21.280
Joel (Guest)
Design.

00:22:21.540 --> 00:22:23.680
Joel (Guest)
Uhm, patterns probably in.

00:22:24.310 --> 00:22:28.110
Joel (Guest)
Like, uh, it's older express. I want to add it under radio system.

00:22:29.030 --> 00:22:36.070
Joel (Guest)
So that means every single action the user does, you actually set the details of their action in an object and you put it onto a stack.

00:22:36.820 --> 00:22:41.070
Joel (Guest)
And in that object you have the details on how to do that action and had to undo that action.

00:22:37.070 --> 00:22:37.500
Daniel Coles
Right?

00:22:41.710 --> 00:22:44.140
Joel (Guest)
And you just create the object and then say do.

00:22:44.750 --> 00:22:45.550
Joel (Guest)
Put it on the stack.

00:22:46.140 --> 00:22:50.440
Joel (Guest)
And then we went on a do you take the take the first thing off the stack and do the undo method?

00:22:51.170 --> 00:22:52.500
Joel (Guest)
And add it to an undo stack.

00:22:51.240 --> 00:22:51.580
Daniel Coles
Wow.

00:22:53.540 --> 00:22:53.890
Noah Etherington
Sorry.

00:22:53.550 --> 00:23:01.740
Joel (Guest)
Uh, and when you get design patterns like that done correctly, it's really rewarding and the code becomes so much more neater and readable.

Return to start of Appendix

14. You work in Software Development, did you consider any other IT fields? If so, why did you choose current field?

00:23:02.250 --> 00:23:10.260
Daniel Coles
So that's interesting. OK, so you're in software development at the moment. Did you consider any other fields?

00:23:11.460 --> 00:23:11.750
Joel (Guest)
Uh.

00:23:11.480 --> 00:23:14.540
Daniel Coles
And if you did, what made you choose software development?

00:23:11.810 --> 00:23:12.070
Joel (Guest)
Come.

00:23:15.440 --> 00:23:19.850
Joel (Guest)
Yeah, so it's once do game dev like a little kid. I wanted to make Mario.

00:23:22.160 --> 00:23:22.630
Joel (Guest)
Uh.

00:23:23.990 --> 00:23:27.090
Joel (Guest)
I over the years when I started trying software.

00:23:27.580 --> 00:23:32.910
Joel (Guest)
Uh, my my gap year end riding the my own software and I found him fun it can be.

00:23:33.630 --> 00:23:36.120
Joel (Guest)
I thought, hey, this is actually pretty good.

00:23:37.990 --> 00:23:38.960
Joel (Guest)
I'm gonna do this.

00:23:39.840 --> 00:23:44.150
Joel (Guest)
And as you probably all know, game Dev is a very shaky.

00:23:44.800 --> 00:23:57.120
Joel (Guest)
Industry, you hear better the news all the time like stuff happening in Blizzard and Rockstar like the creating issues and payroll issues and abuse allegations and things like yeah.

00:23:50.520 --> 00:23:50.990
Daniel Coles
Oh yeah.

00:23:55.180 --> 00:23:56.510
Rhiannon Lloyd
Are there issues?

00:23:56.820 --> 00:23:59.390
Daniel Coles
Yeah, it's in a bit of turmoil. The whole industry at the moment.

00:23:58.690 --> 00:23:59.310
Rhiannon Lloyd
Miller

00:23:59.560 --> 00:24:06.310
Joel (Guest)
Yeah, I mean, and even at one point like video games, industry crashed and like they thought would never come back. Yeah, I don't think will happen again, but.

00:23:59.930 --> 00:24:00.450
Rhiannon Lloyd
yeah.

00:24:05.020 --> 00:24:05.330
Daniel Coles
Yeah.

00:24:06.210 --> 00:24:06.700
Daniel Coles
No.

00:24:07.370 --> 00:24:08.100
Joel (Guest)
There's a lot of.

00:24:09.280 --> 00:24:13.650
Joel (Guest)
Lot of weirdness in the game Dave Industry and it's also just a lot harder to get your foot into.

00:24:14.760 --> 00:24:15.380
Daniel Coles
So I've heard.

00:24:14.860 --> 00:24:16.680
Joel (Guest)
I don't doubt that you could go and find some.

00:24:18.450 --> 00:24:26.070
Joel (Guest)
Candy Crush Knockoff Mobile studio to work for UH, there's a few mobile studios in Hobart that actually have a few employees but.

00:24:27.000 --> 00:24:41.730
Joel (Guest)
When you when you as an aspiring game Dave, you either want to go 100% in D and that means you have to make your own revenue or you want to work for someone big like Activision or Nintendo or Valve. Valve is always my true 'cause I love valve games.

00:24:43.020 --> 00:24:46.660
Rhiannon Lloyd
I like the fact that a lot of the indie games that are coming out now or just.

00:24:43.180 --> 00:24:43.730
Joel (Guest)
Uhm?

00:24:47.290 --> 00:24:48.780
Rhiannon Lloyd
Really good quality.

00:24:49.120 --> 00:25:03.540
Joel (Guest)
Yeah, I mean, indie games have come so far lately and the amount you can do with all the engines that come out now like back in the day, there was no engines. You had to roll your own. My dad rolled his two of his own engines.

00:24:49.160 --> 00:24:49.490
Noah Etherington
Yeah.

00:24:49.850 --> 00:24:50.340
Rhiannon Lloyd
Yeah.

00:24:51.850 --> 00:24:52.290
Rhiannon Lloyd
Yeah.

00:24:51.940 --> 00:24:52.290
Daniel Coles
Yeah.

00:24:57.100 --> 00:24:57.510
Rhiannon Lloyd
Uh-huh

00:25:04.100 --> 00:25:04.480
Daniel Coles
Wow.

00:25:04.240 --> 00:25:04.560
Rhiannon Lloyd
yeah.

00:25:06.180 --> 00:25:06.710
Daniel Coles
That's like.

00:25:06.190 --> 00:25:07.960
Joel (Guest)
And now you can just pick up unity and start writing.

00:25:08.140 --> 00:25:08.700
Daniel Coles
Yeah.

00:25:09.460 --> 00:25:09.780
Joel (Guest)
Or

00:25:09.590 --> 00:25:10.730
Daniel Coles
Most of the work is already done.

00:25:10.980 --> 00:25:11.980
Joel (Guest)
yeah, I mean that's.

00:25:12.640 --> 00:25:18.560
Joel (Guest)
It's like crazy love so much work and you don't do it anymore and all the tools they come with as well, like building AI and stuff.

00:25:18.950 --> 00:25:20.220
Daniel Coles
Wow, yeah.

00:25:19.840 --> 00:25:28.130
Joel (Guest)
Uh, so yeah, I want to game Dev, but then I found software devs actually quite fun and it seems like you guys are into that as well, which is great.

00:25:28.910 --> 00:25:29.520
Joel (Guest)
Uhm?

00:25:31.040 --> 00:25:36.780
Joel (Guest)
Because I think you also can't go very far in game dev like you can get to lead developer.

00:25:37.710 --> 00:25:44.000
Joel (Guest)
And then he kinda gets stuck and then it goes into game design territory. I mean I'm talking about wages here, like getting an extra salary.

00:25:41.520 --> 00:25:41.890
Daniel Coles
Right?

00:25:44.290 --> 00:25:44.770
Daniel Coles
Yeah.

00:25:46.670 --> 00:25:58.160
Joel (Guest)
And when it gets kinda game design territory, your programming skills have nothing to do with that, and I think it's harder to progress higher up the wage chain, whereas software dev I think it's a lot easier to milk your employer.

00:26:02.070 --> 00:26:05.700
Daniel Coles
That's funny, but it's definitely what you want to think about when you think you're thinking of a career.

00:26:05.970 --> 00:26:14.920
Joel (Guest)
Yeah, definitely, and mostly also 'cause I found out that I don't really ever want to leave Tasmania, so there's a lot more software opportunities down here than gaming.

00:26:06.470 --> 00:26:06.920
Rhiannon Lloyd
Yeah.

00:26:06.650 --> 00:26:07.240
Daniel Coles
Sure.

00:26:15.770 --> 00:26:16.360
Daniel Coles
Yeah, OK.

00:26:16.470 --> 00:26:20.770
Joel (Guest)
Don't be fooled though, there is some gaming opportunities down here. There's a whole discord, I mean and.

00:26:16.990 --> 00:26:17.640
Bryce McKerlie
It's Hannah.

00:26:18.800 --> 00:26:19.460
Daniel Coles
Yeah.

00:26:21.510 --> 00:26:23.470
Joel (Guest)
Yeah, I mean if you guys sometimes when you roll from up.

00:26:24.160 --> 00:26:25.450
Daniel Coles
Uh ICT here.

00:26:24.360 --> 00:26:26.250
Rhiannon Lloyd
Add sample styling.

00:26:25.740 --> 00:26:26.060
Joel (Guest)
Yep.

00:26:26.700 --> 00:26:27.020
Joel (Guest)
Cool.

00:26:28.450 --> 00:26:29.390
Daniel Coles
Well, mainlanders.

00:26:29.760 --> 00:26:31.120
Joel (Guest)
Yep, but from Noah.

00:26:29.970 --> 00:26:30.510
Bryce McKerlie
Yeah.

00:26:30.700 --> 00:26:31.200
Rhiannon Lloyd
Yep.

00:26:31.550 --> 00:26:31.980
Daniel Coles
Yeah.

[Return to start of Appendix]

15. Finally, can you share an example of the work you do that best captures the essence of the IT industry?

00:26:32.940 --> 00:26:44.670
Noah Etherington
Right, so the last question, pretty much it's just. Could you share an example? Essentially the work that you do that best captures the essence of the IT industry. It's a bit of a bit of an interesting question, but if.

00:26:33.030 --> 00:26:33.390
Daniel Coles
See.

00:26:41.600 --> 00:26:43.600
Joel (Guest)
Yeah, I gotta stink. A good a good singer for you.

00:26:46.040 --> 00:26:55.830
Joel (Guest)
Uh, I'll tell you a little story. Definitely been in the industry one year and this is my world story. So first project I got put on when I came in was integration to Salesforce.

00:26:56.580 --> 00:26:58.660
Joel (Guest)
If you guys know Salesforce it's a.

00:26:59.390 --> 00:27:10.230
Joel (Guest)
The number one is a SAS in the world. It's more sales software helps people manage sales opportunities, contacts all that sort of stuff. It's one of the most complicated things I've ever seen.

00:27:10.940 --> 00:27:12.700
Joel (Guest)
Uh, when I've had to configure it, there's.

00:27:13.550 --> 00:27:19.930
Joel (Guest)
Thousands upon thousands of configuration screens and I couldn't find that they want and searching the documentation is hell.

00:27:18.160 --> 00:27:18.380
Daniel Coles
But

00:27:20.960 --> 00:27:22.420
Joel (Guest)
Because everything has similar names.

00:27:23.090 --> 00:27:29.420
Joel (Guest)
Uh, so we had a project that was to integrate our husbands UNOS products into Salesforce so.

00:27:30.010 --> 00:27:32.050
Joel (Guest)
Because Salesforce is so big, you can make plugins for it.

00:27:33.930 --> 00:27:35.610
Joel (Guest)
Before I came to the company.

00:27:36.270 --> 00:27:39.410
Joel (Guest)
So this project existed for about six months before I even came in.

00:27:40.260 --> 00:27:46.940
Joel (Guest)
They had a consultant in a Salesforce consultant. They're paying the big bucks. I don't know 20 grand for a consultation, it's crazy.

00:27:47.080 --> 00:27:47.410
Noah Etherington
Wow.

00:27:47.580 --> 00:27:52.540
Joel (Guest)
Uhm, how do you think we should go about doing this in Salesforce integration? And there you go and.

00:27:53.210 --> 00:28:01.850
Joel (Guest)
Do a canvas that to a canvas that you know. Use this canvas app framework and if OK and then the last second they changed their mind like I used this Lightning framework.

00:28:03.200 --> 00:28:15.770
Joel (Guest)
Uh, maybe it'll be better suited for your authentication needs because one of our our CEO is really big on. He never wants the user to log in because there's 50 products he wants them to be able to go from product to product without having to type in the password all the damn time.

00:28:16.600 --> 00:28:22.890
Joel (Guest)
So the consultant said use this slightly framework would be better for your offer needs, so they're like OK.

00:28:23.870 --> 00:28:26.690
Joel (Guest)
So I come into the company, uh, January.

00:28:27.400 --> 00:28:28.470
Joel (Guest)
Uh, just a year ago now.

00:28:29.370 --> 00:28:36.570
Joel (Guest)
On the 11th and this stuff is almost done, but there's some problems and hiccups, so I helped them iron those out.

00:28:37.860 --> 00:28:41.790
Joel (Guest)
Then about mid year 2021 it's ready to go.

00:28:42.580 --> 00:28:53.450
Joel (Guest)
And they submit it for security review to Salesforce for security. Salesforce reviews all the plugins that you want to put on the store for security, just like they would on the Android store Apple Store.

00:28:54.630 --> 00:28:55.480
Joel (Guest)
And dumb.

00:28:56.190 --> 00:29:12.420
Joel (Guest)
They say, oh this sum, you're using the session ID here and we don't want that being used at all and our entire authentication system like the log user logging in then cooking up into the other two products, husbands, UNOS, it completely depended on that.

00:29:13.760 --> 00:29:20.620
Joel (Guest)
Sorry, uh, that's like it's $15,000 security review to say, yeah, you screwed up, try again.

00:29:21.100 --> 00:29:21.880
Rhiannon Lloyd
oh wow.

00:29:21.420 --> 00:29:22.110
Joel (Guest)
Uhm?

00:29:21.550 --> 00:29:21.930
Daniel Coles
Should I?

00:29:24.060 --> 00:29:33.280
Joel (Guest)
So like OK **** uh, the big demander of this product aggression was DXC. If you guys know them they're like IBM. Massive are our biggest client.

00:29:31.630 --> 00:29:32.080
Daniel Coles
Now.

00:29:34.250 --> 00:29:36.460
Joel (Guest)
And a T&T which he probably know.

00:29:36.750 --> 00:29:37.430
Rhiannon Lloyd
Yeah, yeah.

00:29:37.310 --> 00:29:37.880
Joel (Guest)
Uhm?

00:29:39.040 --> 00:29:43.630
Joel (Guest)
They're banging the desk. We want this. We wanted this six months ago. Give it to us there.

00:29:40.660 --> 00:29:41.250
Rhiannon Lloyd
Uh-huh

00:29:43.790 --> 00:29:44.300
Noah Etherington
Oops.

00:29:45.520 --> 00:29:55.020
Joel (Guest)
Uh, and we're like, Oh well, it doesn't. It doesn't work. 'cause I'm getting a faster security review, so it comes back and we're looking at all the options. It was actually me that did most of this work. I don't know like.

00:29:55.760 --> 00:30:05.040
Joel (Guest)
'cause my supervisor went on leave and then he those his suit. Lead supervisor was like you gotta look into all the options of authentication as like oh God understand any of this.

00:30:06.860 --> 00:30:19.770
Joel (Guest)
So I had to look into a war and all that sort of thing. UM, lots of lots of big standard around how authentication should be done in the modern web, which is really interesting stuff, but super confusing. There's all these sorts of stuff that permissions and JWT's and encoding and signing it.

00:30:07.330 --> 00:30:07.700
Rhiannon Lloyd
Yes.

00:30:20.580 --> 00:30:30.210
Joel (Guest)
Uh, so I'm looking into it. I find one option, I get it to work in like a rough prototype and they're like, yeah, OK, that seems good. Maybe we can work with that so.

00:30:31.410 --> 00:30:31.960
Joel (Guest)
Uhm?

00:30:33.090 --> 00:30:40.560
Joel (Guest)
We make a little prototype and what it does is it like creates a private key and public key pair. You guys probably know a little bit about that.

00:30:41.600 --> 00:30:52.280
Joel (Guest)
Comes to cryptographically connected keys, where the public can be shared anywhere but the private car and needs to be kept secret and you can. You can verify data is being signed with one or the other.

00:30:53.280 --> 00:30:59.110
Joel (Guest)
And we do this golf thing where we hide the private key in Salesforce and UM.

00:30:59.790 --> 00:31:04.120
Joel (Guest)
Send the public key to Salinas and when they sign in.

00:31:05.260 --> 00:31:19.170
Joel (Guest)
In the public key forward and back and then make like a uh JWT, which is a users authentication token and now ZENOSS is the authority on the authentication even though they signed into Salesforce and it's really dodgy.

00:31:20.690 --> 00:31:24.310
Joel (Guest)
Anyway, it's been like three or four months riding that and.

00:31:25.790 --> 00:31:27.500
Joel (Guest)
Thank God I got past the next security review.

00:31:28.970 --> 00:31:33.690
Joel (Guest)
'cause they said this. This is fine for Salesforce like this is secure for Salesforce.

00:31:34.270 --> 00:31:37.160
Joel (Guest)
It might be really insecure for your stuff, but we don't care about your stuff.

00:31:37.900 --> 00:31:39.750
Joel (Guest)
We only care about Salesforce is security.

00:31:38.420 --> 00:31:39.840
Rhiannon Lloyd
OK, OK.

00:31:41.240 --> 00:31:41.730
Joel (Guest)
Yeah.

00:31:43.120 --> 00:31:43.690
Daniel Coles
Nice.

00:31:43.260 --> 00:31:51.300
Joel (Guest)
We find out in the end that what we should do is rewrite the whole thing as a canvas app, which is what the consultant said in the 1st place before he changed his mind.

00:31:52.090 --> 00:31:52.870
Joel (Guest)
18 months ago.

00:31:53.040 --> 00:31:54.090
Daniel Coles
I don't know.

00:31:53.840 --> 00:31:54.210
Noah Etherington
Yeah.

00:31:55.540 --> 00:31:56.130
Joel (Guest)
Anyway.

00:31:56.570 --> 00:31:57.040
Daniel Coles
Wow.

00:31:56.950 --> 00:32:09.130
Joel (Guest)
We finally get the product out like two months ago now and as soon as we get it out DXC who's like. Like I said, TCN AT&T, the two biggest clients and want this DXC says are we want to switch from Venus to the hub?

00:32:10.050 --> 00:32:30.220
Joel (Guest)
So now we have to do it all over and I think that captures the essence of the IT industry. He constantly going to get messed around by external forces and time restraints, and you're just not gonna be able to do things the way you want. But you have to do the best with what you got. And that's probably the truth with all industries but.

00:32:10.070 --> 00:32:10.620
Daniel Coles
Ah.

00:32:23.250 --> 00:32:23.850
Daniel Coles
Yeah, right?

00:32:26.990 --> 00:32:27.360
Daniel Coles
So.

00:32:29.420 --> 00:32:33.330
Daniel Coles
I was gonna say you're telling me it's the same as every other industry. Yeah, OK.

00:32:31.610 --> 00:32:32.040
Joel (Guest)
Yeah.

00:32:33.140 --> 00:32:41.180
Joel (Guest)
The same people understood all the health through all the all the bullshittery you have to rotate around with project management is gonna have to order here, but you could give your best shot.

00:32:38.510 --> 00:32:39.030
Daniel Coles
Yep.

00:32:41.870 --> 00:32:43.980
Daniel Coles
Yeah, right? Well, let's get the right code every now and then.

00:32:44.870 --> 00:32:45.170
Daniel Coles
Like

00:32:45.310 --> 00:32:46.760
Joel (Guest)
Every now and then, if you're lucky.

00:32:47.860 --> 00:32:48.550
Daniel Coles
OK cool.

00:32:48.810 --> 00:32:56.640
Noah Etherington
Well, yeah, that's another questions answered. It thanks Joe for taking the time out of your day to, you know, help us out get through this assignment.

00:32:51.550 --> 00:32:52.100
Daniel Coles
So right?

00:32:55.660 --> 00:32:56.330
Joel (Guest)
That's alright.

00:32:55.690 --> 00:32:56.660
Daniel Coles
Thank you so much.

00:32:56.830 --> 00:32:57.820
Bryce McKerlie
Yeah, thanks Joe.

00:32:57.620 --> 00:33:03.320
Joel (Guest)
Yeah, thank you Joe not appreciated. No worries, let me if you got any other questions. I'm alright to here or.

00:32:58.620 --> 00:33:00.460
Daniel Coles
Project that year.

00:32:58.750 --> 00:33:00.670
Noah Etherington
Is actually really interesting? Yeah, thank you.

00:33:03.130 --> 00:33:08.530
Daniel Coles
I do have one, but it's not related to this part of the assignment, it's it's a different part.

00:33:08.670 --> 00:33:10.220
Bryce McKerlie
Should we stop the recording?

00:33:09.870 --> 00:33:11.780
Daniel Coles
Yeah, yeah, maybe it's not the recording.

00:33:10.440 --> 00:33:11.790
Rhiannon Lloyd
Yeah or?

00:33:11.560 --> 00:33:14.040
Noah Etherington
Stop at now.

Return to start of Appendix

Back to Table of Contents