**Assignment 3 – Report (Aaron, Alina, Joshua)**

**Group’s Website:**

<input website link when done>

**Group’s GitHub Repo:**

<https://github.com/s3588914/Assignment3-Group23>

**Group’s Google Docs:**

<https://docs.google.com/document/d/1f9AGp4uO_NSoeJ6-G2ClmDe_Jcoav3Z9WyKuUPksXdQ/edit>

**Group’s Presentation Slides:**

<https://docs.google.com/presentation/d/1uFhPQWXhLHBsUhhBBj0FsZngzCNunnmFuIn6v5yhEno/edit?ts=5b0368a5#slide=id.g3b61b10202_1_7>

**Group’s Presentation Cue Cards:**

<https://docs.google.com/presentation/d/1r0_YU5Tl635hFj-pjEVAFx0o-OB5PhSbNv7VvoI2xFc/edit#slide=id.g3b6224b3b5_0_15>

**TEAM PROFILE**

***Personal Profile***

***Aaron Storey***

My name is Aaron Storey, s3501900 is my student number, and I am part of The Three MuskeTechs. My background is a heavy interest in IT, specifically programming and development. Some hobbies include building and woodworking, I enjoy the process of starting with nothing but an idea, and turning it into a finished product (this applies to physical and digital products).

My interest in IT like many kids born in or close to the 90s was apparent in my childhood, but really spiked when I first started learning how to program using PHP when I was 15.

My experience with IT started with working as a retail salesperson at a company selling all sorts of technology and worked my way up to the corporate IT department of said retail company, where I help maintain systems and tools that stores use.

***Alina Nguyen***

My name is Alina Nguyen, a member of The Three MuskeTechs that is currently studying Associate Degree of Information Technology - my student number is s3588914. Back when I was in high school, I focused on the business side of things, especially in Accounting.

Unfortunately, once I begun studying Business in University, I realized that it wasn’t something that I wanted to have a career in - so while looking for a different field to study, Information Technology caught my interest.

Therefore, I decided to give Information Technology a try, and so far my interest has grown. At the moment my experience in IT is very limited, what I have at the moment is what I have gained through my studies at RMIT.

***Joshua Lawerson***

My name is Joshua Lawerson, proud member of The Three MuskeTechs. I’ve spent several years working in advocacy and have come to a point now where I’m looking for a career change. I used to fence competitively and still enjoy the sport recreationally.

I’m a deeply competitive person and think that this would transition well into the IT field. My experience in IT so far has been limited to things that I’ve taught myself, largely revolving around working with excel.

My interest in IT has changed as I’ve grown, starting with an obsession with any video game I could get my hands on to now throwing myself into every programming language I have the opportunity to study.

***Group Processes***

***How well did your group work together in Assignment 2?***

Our group overall worked really well together, we were able to delegate tasks to each team member based on their strengths quite easily without any issues - also providing help to one another when needed. As a group we also came to a decision on what to do for our final project idea quite quickly, as it contains elements from each of our project ideas from Assignment 1.

***Will you be introducing any changes in process for Assignment 3?***

We will be utilizing GitHub in more depth as a method to store and share documentation between each group member. While we did this in our last Assignment, we will be doing this with a larger number of resources and files.

We will also ensure to create our report as a single PDF file as intended in the assignment brief, as our last assignment we instead included our report as a part of the group’s website.

***Career Plans***

***Compare and contrast the career plans, including ideal jobs for each person in the group.***

***What common elements are there?***

It’s difficult to point out job-specific skills here, as these can and will change drastically in a short amount of time. Instead, we’ve decided to dot-point interpersonal elements which would be required for all 3 jobs.

* Adaptability/Dynamic
* Communication skills
* Able to be a part of a team
* Able to embrace change
* Keep up to date with new trends and standards
* Organised
* Planning skills /Time Management
* Eye for detail

***What differentiates each position from the others?***

All 3 jobs are similar in many ways, and as above, without going into too much job-specific detail, noted down are some elements which make each job unique in comparison to the others.

*Full stack developer:*

* Broad and quality knowledge on both front-end and back-end design and implementation
* No specific expertise on one particular development technology

*Web developer*

* Focus on design and creativity

*Penetration Tester*

* Focus on testing and finding security issues/vulnerability

***How similar or different are your career plans across the group?***

All 3 career plans are based in core parts of IT, and are fundamental to any business IT solution, however the path and prerequisites slightly differ in terms of experience required.

To get a job as a full-stack developer, you would need a long and experienced history, working in different fields of software and web development. This is not a job you would typically receive as your first role.

To get a job as a web developer, you would need some sort of portfolio to demonstrate and show your previous works, professional or casual, along with displaying an eye for design and understanding of current technologies.

To get a job as a security penetration tester, you would require a vast knowledge of computer operating systems, IT infrastructure, common company practices, how to expose vulnerabilities, and how to then exploit said weaknesses. You would also have to show some level of ethics, to demonstrate to a potential employer that you’re not in the business for malicious intent, but rather to protect and prevent.

All 3 jobs all share the same basic elements which many jobs in and outside of IT require, such as communication skills, punctuality, eye for detail and adaptability. They also all require some form of experience, although web-development is one which out of the 3 would require the least formal experience.

**PROJECT DESCRIPTION**

***Overview***

***Topic***

Our project idea is to preload a Raspberry Pi with simple programmable games. This game device is marketed towards primary school children, as programming and coding in primary schools is becoming increasingly popular and essential in today's educational society.

Our objective is to create a straightforward device to use, so instructors can understand and help kids get started quickly and easily - we want this to be as simple as “Plug and Play”. Built on a Raspberry Pi, it is extremely portable. All the user needs is a monitor with HDMI.

***Motivation***

*Motivations for this project and why is the project important or interesting?*

Our main motivation is to encourage students at a primary school age to check out coding and programming earlier on in their education, as different types of development is quickly becoming a highly sought-after skill in the IT industry. Its new to all of us, therefore learning and getting hands on experience with a small computing device, and how to develop a game through programming with Javascript, HTML5 and CSS will definitely be interesting.

*How does it fit in with current IT trends?*

Small computing devices like Raspberry Pi computers are a part of a new era of portable, powerful and highly versatile devices. Using a Raspberry Pi in our project allows us to gain knowledge on using a new device for both software and hardware integration. Typically, projects created on Raspberry Pi’s are open-source, and some popular projects also contain documentation on what’s going on, how something works, and in-depth configuration. Learning is easy when there’s a massive community behind a new type of technology.

*What would it show to a future employer if you were able to work on this project?*

It would show we are a team who can utilise current technologies, interfacing with both software and hardware to create an interactive gaming experience. It would also highlight our ability to adapt to new and dynamic technologies and concepts, as our passion for IT and encouraging our younger generation to get into coding and exploring IT.

***Landscape***

*What similar systems or products are available?*

While we were unable to find an exact alternative of our planned product, there are various small computing devices in existence which wouldn’t require much alteration to achieve what we are trying to do. Listed below are some alternative small computing devices to the Raspberry Pi:

* [MinnowBoard Turbot Dual Ethernet Quad-Core](https://minnowboard.org/minnowboard-turbot-dual-e/)
* [BBC micro:bit](http://microbit.org/)
* [C.H.I.P.](http://nextthing.co/pages/chip)
* [Parallella](http://www.parallella.org/)
* [NanoPC-T3](http://www.friendlyarm.com/index.php?route=product/product&product_id=210)
* [Huawei HiKey 969](https://www.96boards.org/product/hikey960/)

*What competitors are there?*

Our major competitor would be the Makey Makey, as this is a product which allows the user to make all sorts of controllers for different applications, using quite literally anything that can conduct a small electric current. They use alligator clips to interface directly into their PCB board. Their product however seems to be more for tinkering and entertainment purposes only, and do not require any programming or coding.

*What points of difference are there about your project compared to what exists now?*

As of this moment, the closest product as mentioned above is the Makey Makey device, however their product appears to be more for tinkering and entertainment purposes only, and do not require any programming or coding.

What separates our device from simply purchasing a Raspberry Pi standalone, is ours would come preloaded with Raspbian (the Pi’s OS), and would also include our own open-source game software and API, along with documentation on how to modify and edit the existing games.

Our product is not a conventional arcade game machine such as “RetroPi”, ours is more of an educational device aimed towards children and early learning.

***Detailed Description***

***Aims***

*Specific aim*

*O*ur overall aim for this project is to design and create a fully functional programmable arcade game developer device that runs off a Raspberry Pi. Also to have a working product complete with an external arcade-style controller to interface directly with the game. The Raspberry Pi and game controller together will allow an end-user to plug straight into a TV or Monitor, power on the Pi, and have the game menu screen auto-launch to begin paying a game in the browser.

*Smaller Goals*

*What are the most important parts of the project?*

*Which parts should have priority over the others?*

*If we have only enough time or resources for one of our goals, which should it be?*

***Plans and Progress***

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***Roles***

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***Scope and Limits***

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***Tools and Technologies***

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***Testing***

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***Timeframe***

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***Risks***

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***Group Processes and Communication***

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**SKILLS AND JOBS**

***Filler***

***Filler***

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***Filler***

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**GROUP REFLECTION**

***Filler***

***Filler***

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***Filler***

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