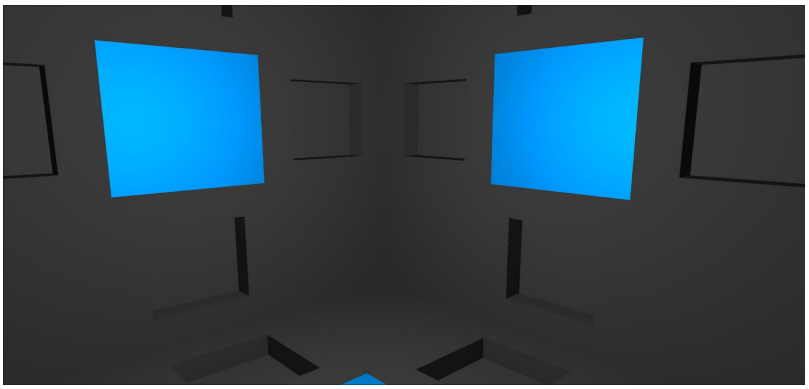
IT Profile
COSC2196 - Assignment One

Jarrad Elvey (s3884930)
https://github.com/Chameleon-rmit/IT-Profile - https://chameleon-rmit.github.io/IT-Profile/
Introduction to Information Technology
RMIT
19/12/2020

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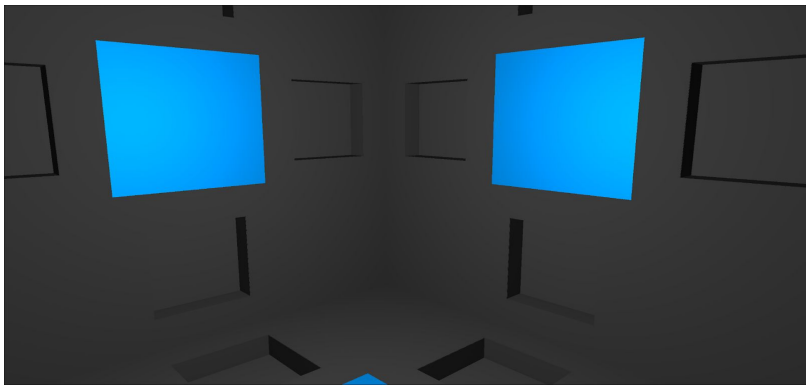

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Summary

(Report note: The primary document is the above linked github.io webpage. It has the intended layout and formatting (PDF can't toggle displaying text, among other things). This report has the same textual content (not counting the Report Notes) but is not intended to be the way the content is viewed.

Webpage content was created with HTML, CSS, Javascript, and SVG; no templates or libraries were used. Also, clicking the margins/background of the webpage will generate a new background.)

Table of Contents

Personal Information

(Report Note: The layout here didn't and couldn't transfer very well from the webpage.)
Name: Jarrad Elvey
Primary Alias:Chameleon
Student Number:3884930
Student Email:s3884930@student.rmit.edu.au
Nationality:Australian
Culture:Digital Citizen
Interesting Fact:Has successfully removed nearly all traces of his name from the public internet. Only an old ABN record remains.
Even this page shouldn't show up in a search result.
Interesting Skill:Rapid prototyping of extensions/tweaks to web sites/applications via the use of userscripts.
Daily Toolkit:zsh, ssh, sshfs, tmux, termite, vim, Arch Linux, Wayland/wlroots/custom compositor, Chromium, MariaDB/MySQL, Node.js, MongoDB, multiple bespoke domain specific javascript web applications
Interests:Movies, Reading, Writing, Learning, Creating/Inventing
Dis-interests:Selfies, Marketing, Disingenuity

Interest in IT

Information Technology. Such a broad category of topics which can expand to cover nearly every field and discipline. Design, manufacturing, entertainment, health; Information Technology can be included to increase the efficiencies in all of them and more.

My interest in IT is that it encompasses the systems (processes and how things work) of the world around us. And if they aren't within the domain of IT already then there is likely an application of IT that will make them better, from analysis to automation, simulation to outright replacement of the existing processes.

My introduction to IT as a thing that I actively used in a meaningful way is hard to pin down. At a young age I was exposed to a Commodore 64 and went through the generations of Micro$oft products from Windows 3.11, 95, 98, Millennium Edition (my personal favourite as it was so buggy that it was a game in and of itself), XP, and finally Vista. After Vista I moved on to Linux which I have been using since.

I did an IT course in 2008 which led to my gaining three CompTIA lifetime certifications (Linux+, A+, and Systems Support Specialist). Though the biggest thing I learned from the course was that you can be certified in a large number of things without any qualifications or proof of learning and it only costs around three hundred dollars for each certification.

My path to studying at RMIT is perhaps a non-typical one. When COVID-19 partly shut down the world I wasn't much affected as I was fairly isolated before that, but it did lead to the government removing the Mutual Obligation Requirements for JobSeeker. As I wasn't working anyway, and my remote location didn't matter if I wasn't required to look for jobs, I signed up. Fast forward a few months and Mutual Obligation Requirements started coming back in a limited manner and I started unsuccessfully applying for jobs that I have the skills for but not the qualifications or provable experience. Austudy is nearly equivalent to JobSeeker and so I started researching online universities. After filling out my contact details for some part of the Open Universities Australia site I was contacted by one of their student advisors nearly immediately. I didn't have any reason not to enrol right away and after a short conversation was signed up for two of the Open Enrolment courses. A few weeks later I had started the courses that would lead to getting a Bachelor of Information Technology degree.

The main thing that I expect to learn from my studies at RMIT is working with peers to achieve outcomes as that isn't something I have a lot of experience with. Though I also expect that there are some holes in my self-taught knowledge that will be filled as well as exposure to completely new ideas and technologies.

Ideal Job

Varjo Job Listing (Internet Archive snapshot)

An ideal job that I would like would be to work on Linux support for the Varjo VR/AR headsets. It would be ideal for me because it is cutting edge technology with various applications that would hold my interest.

While Varjo doesn't have a specific job advertisement for adding Linux support for their products they do have an Open Application job listing for developers. They state in the listing that they are offering a position that will give an opportunity to play with and create the computer interface of the future. I think a good case can be made that they won't meet that ambition while being restricted to a single OS (windows). What makes it such an appealing job is that Varjo has VR headsets that are good enough to be replacements for real-world screens.

The position would be in writing software (kernel modules or userspace) to interface with their existing hardware including an implementation of whatever tracking is on the computer side. Possible job requirements might be to implement AMD and NVIDIA GPU support for missing features in Linux.

The skills, qualifications, and experience required for the job are a bit vague as the job listing is open and relies on the applicant to convince them. Varjo as a company is interested in hiring people who have done impressive projects in the field. A PhD in the field of VR/AR that also involved using Linux while also being compellingly executed would be an obvious potential in. More experience in working with novel hardware interfacing with Linux would also be valuable.

My current skills and experience in the field would be that I'm well versed in and am comfortable with Linux. I've also written Oculus Rift support for the Weston Wayland compositor (back when Oculus Rift had Linux support).

My plan for gaining the skills, qualifications, and experience required for the position would be to gain entry to the Bachelor of Information Technology degree via Open Enrollment, complete that degree, then on to something like the Graduate Certificate of Design Innovation and Technology. In the years that it will take to do both of those I expect that technology in the field of VR will continue to progress opening up more opportunities. Perhaps an engineering degree and creating my own VR technology to the specifications I would most prefer is another pathway to take.

Personal Profile

(Report Note: The Personal Profile page on the web page makes heavy use of toggling the visibility of sections. Each of the detailed results of the tests is hidden by default as is the entirety of the in-depth analysis (as it's interesting and gives a good look at what the results of two of the tests mean, but is ultimately optional reading).)

MBTI: INTJ-A INTP-A (16personalities.com, 2020)
Extraverted 12% - 88% Introverted
Intuitive 73% - 27% Observant
Thinking 71% - 29% Feeling
Judging 57% - 43% Prospecting
Assertive 71% - 29% Turbulent
Learning Style: Reflector style (+ anti-activist style) (EMTRAIN - Learning Styles, 2020)
Reflector 41.1%
Theorist 30.8%
Pragmatist 21.7%
Activist 6.5%
Enneagram: Type Five (Eclectic Energies, 2020)
Type 5 - 11.7
Type 1 - 8.4
Type 4 - 4
Type 6 - 3

The MBTI and Enneagram personality frameworks are both things that I have studied somewhat in-depth. I consistently test as an INTJ but am a mistyped INTP. MBTI is about how you process information and your behaviours while Enneagram is about motivations and fears, both of them together give a better understanding of how a person works than either alone. The learning style test's results match up with my MBTI type and it seems to be a more coarse categorisation, all it really told me is that I wouldn't benefit from brainstorming, problem setting, group discussions, and roleplaying. The only one I would agree with from that would be the roleplaying.

(The in-depth analysis pulls from a character creation app (part of a larger novel creation/writing app) that I wrote which itself pulled a lot of its explanation from Funky MBTI in Fiction (on tumblr) which has since moved to Funky MBTI (on wordpress).
The Enneagram information was sourced from `The Modern Enneagram: Discover Who You Are and Who You Can Be` by Kacie Berghoef and Melanie Bell.)

In-depth analysis

INTP - Architect: Designing
TiNeSiFe

Dominant Function (What is used every day, second nature): Introverted Thinking
Explanation: To build an internal framework of logic, which is consistent and makes sense to themselves. It wants to take things apart (either metaphorically or literally) to understand all the components that make something work, so they can know the system or object from the inside out, and thus find ways to "hack" it. It takes a long time to build this understanding, but then moves forward with confidence, applying the framework to each new piece of information to see if it fits. Its main focus is internal organisation (organising things within the mind, rather than in the external world).
Contextual explanation as Dominant Function: (IXTP): I don't need to use my emotion to fix this problem, thanks. I know how this machine works. Let me take it apart and put it back together for you. That doesn't seem logical. The facts of the situation are unimportant; we can solve this, though it might seem impossible. There is a way around every problem. I can give you a two-word answer to your question, and those two words will solve everything. The fewer words used, the better. Most explanations are too long-winded and technical, and could easily be simplified. Let me hear the idea or new data; I'm going to analyze and criticize it, and if it doesn't work, I'm going to throw it out. Come on, you know my impartiality is sexy. Have you ever seen me overreact to anything? No!

Auxiliary Function (Something also done well, but is soon tiring): Extroverted Intuition
Explanation: To instantly connect to, explore, and consider all new ideas as equal and talk about them with confidence, seeing their potential and longing to implement them quickly, also seeing both sides of an issue and how this idea connects to a different train of thought. This all happens very quickly. It can abandon ideas once they prove ineffectual for newer and better ideas, so it tends to wing situations with confidence. Often changes perspectives, has no firm view of the future since it is always changing.
Contextual explanation as Auxiliary Function: (INXP): Your life has so much potential! I can see many different possibilities for your future! Let me share them with you! There is more than one way to look at this situation. It would be a shame not to talk about them all. That's a great idea, but what about this? Or this? Or that? Let's discuss and consider them all. I have an analogy that fits this situation, but you'll have to hang in there to the end because at first, it will sound random. I promise it isn't! Let me paint the big picture for you! Let's try this, it's new and it's crazy but it might work! Yes, I thought you might make that decision/that this would happen. Excuse me, I need to write a story...

Tertiary Function (Something used sometimes, but can be stressful to linger too long on it): Introverted Sensing
Explanation: To interact with the sensory world and take away from it individual impressions and experiences, to help build an internal catalogue of experiences from which you can draw "similarities" when approaching unknown situations, which helps you know how to navigate situations with confidence. Learns through observation, seeing how others succeed, and following their process. Good with repeated sequential learning until it becomes an automatic process of expertise.
Contextual explanation as Tertiary Function: (INXP): I love to revisit things that have given me joy in the past. Going to the same museums, watching the same favourite old movies, and thinking about an old idea is a lot of fun for me. I'd actually rather go to the tea shop again than try out a new hot spot. I find history interesting. Oh, do you want to know everything I learned about Ancient Egypt/the Klingon Conflict? I have all the details right here! I have a box of Star Wars memorabilia in my closet. Oh, I remember that smell... This tastes like my grandmother's cookies... No, that's not how "they're" is spelled. I like familiar things and when I am upset, they comfort me.

Inferior Function (Nags at them to be better at, but they often use it poorly and are defensive when people point out flaws related to it): Extroverted Feeling
Explanation: To judge situations based on their impact on the social group and individuals involved, to motivate other people to work together to accomplish similar goals, finding ways to bring people together through shared values. Objective ethics, does not favour anyone as higher than anyone else. Tends to feel what others feel, does not need a similar experience to have empathy. General discomfort when others display inappropriate emotions in the wrong context since the goal is to reach a similar emotional state. Uses "mirroring" of other people to bond with them.
Contextual explanation as Inferior Function: (IXTP): I want to help you, but I'm not sure what to say to make you feel better. I feel protective of you, and I don't want to hurt your feelings, but sometimes I do. I would never admit it in a million years, but I care how you see me and I need your encouragement. The more I respect you, the more hurt I am if you ignore or belittle me. That being said... I really don't understand why you're making such emotional decisions!

Perception: NeSi is awareness of intuitive potential and quick, broad connection (open to alternative argument), while often not comparing it accurately to former experiences (low Si)
Judgment: TiFe builds an inner framework of understanding, through which it seeks to analyse the world and reach judgments, while desiring to communicate their knowledge (low Fe)

Enneagram Type Five
The Head Center focuses on obtaining knowing and support. Quieting their minds brings them powerful internal guidance. When they clear their heads, they gain contact with their inner knowing, learning the best way for them to move forward into the future. Types Five, Six, and Seven comprise the Head Triad. These types, at their best, are clear-minded and in touch with

their powerful inner guidance. When out of balance, they believe they must seek security through other means, and struggle with anxiety.
Underused Heart Center, they feel cut off from their feelings and have trouble seeing who they truly are.

Social Style: The Withdrawn Triad: Types Four, Five, and Nine fit the social style of moving away from others. Types that use this style tend to have a focus that is at once internal, and also broad, strategic, and global. Interpersonally, these types tend to be thoughtful, self-contained, and are often (although not always) more introverted than the other two styles. Sometimes, these types have a difficult time speaking up and expressing themselves in social situations, leaving others confused as to their needs and desires.

Conflict Resolution Style: The Competency Triad: Types One, Three, and Five are natural problem solvers. When faced with a conflict or challenge, they aim to stay civil and immediately strategise to find solutions. These types are excellent at long-term planning and keeping themselves or a group on track to reaching a goal. The downside is that these types can be overly focused and emotionally restricted. When they solve conflicts analytically, they avoid either feeling immediate emotions or viewing the situation positively. This means that these types don't always take emotional needs and the broader context of the problem into account when decisions are made, making some solutions less useful than they could be.

Object Relations: The Rejection Triad: Reflects the strategies we use for survival in the world. Types Two, Five, and Eight feel rejected by the world and like they need to bring something to others. Their strategies include offering people their love and service, their knowledge and expertise, and their strong protection. These types' defence mechanisms attempt to gain acceptance while assuming the individual will not receive it.

Enneagram + MBTI
INTP/TiNeSiFe + Five: Strong desire for independence and isolation, pushes away from others and may forgo human relationships on a deeper level, out of Five and inferior Fe discomfort with intense emotions in oneself and others; often takes an avid interest in and tries to perfect useful knowledge in many different areas, seeks security in routine and prone to severe hoarding/holding onto things long past their "expiration" date.

(Report Note: End of in-depth analysis - the webpage indicates this intuitively, the report could use the note.)

The results of the tests are a confirmation that the way that I think and approach things isn't wrong and that people who try to enforce their own preferred way that I behave upon me can be succinctly pointed to these psychological profiles.

Not having worked in many teams I'm not sure how knowing my psychological profile would affect my behaviour. Being able to see *other team member's* psychological profiles and then be able to look up how to most effectively interact with them would likely influence my behaviour.

Being an INTP I see many possibilities as to what can be a solution to a given problem and share and think those many possibilities out.

My preference for forming a team, going by the profile of an INTP, is to not form a team. That being said apparently my personality type functions best when paired with an "implementer" as I live in my own head and vent inspiration and creativity without following through (16Personalities - INTPs at Work). I can see how that could be accurate.

Something to be aware of when using personality tests is Barnum statements (seemingly specific descriptions of your character that are actually generalisations that apply to the majority of people) both the MBTI and Enneagram tests are able to show a contrasting type. Both are also able to be broken down into sub-components that show how other types can think and are motivated both similarly and differently to yourself.

Project Idea

Overview

A 3D web application to teach how to set up and begin filling an artificial Memory Palace.

Motivation

The project would be useful in that being able to perfectly memorise and store information in the mind would be incredibly useful for the typical university course. Closed book tests that rely upon knowing the contents of the assigned textbooks would be trivial if you have them memorised. Having large amounts of profession-specific information in your mind and easily referenced would also be a boon in professional life. Taking it a step further, courses could be written/created with perfect memorisation of core understandings as a learning objective making the long term retention of the topics taught a possibility.

Description

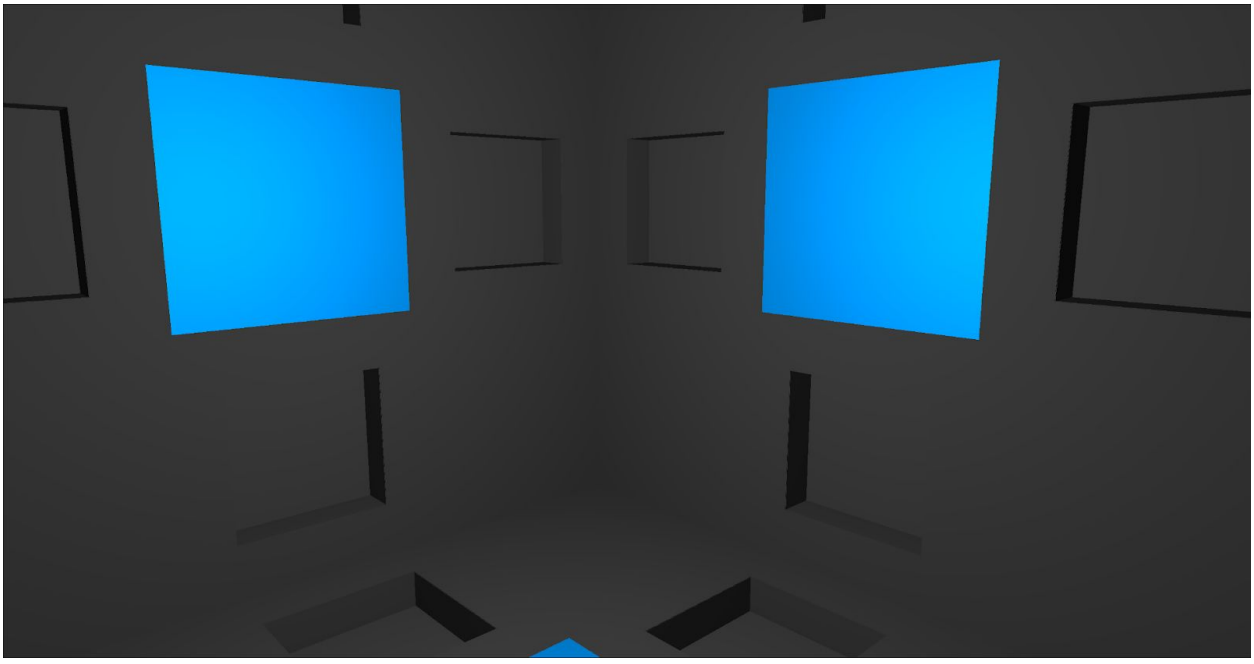
To give a detailed description of the project first requires a look at the underlying principles for efficiently and permanently storing information in the brain. There are only five:

- **Storing visual objects in the brain** - The brain is very efficient at storing/remembering spatial information. To create a memory all that is required is the visualising of two objects connected to each other. Picturing a black cat on a chair creates an association between 'chair' and 'black cat', it is easy to remember one when prompted with the other - "What was on the chair?" or "What was the black cat on?"; or more simply "Chair" or "Black cat".
- **Encoding information into visual objects** - If storing visual objects by linking them together works then the next step is to convert the information you want to memorise into visual objects. Some things are already visual objects and so don't need encoding, but others such as digits, months, abstract concepts, etc. require picking a visual object to represent them.
- **Refreshing connections** - Just making a connection between two visual objects will store the association in your brain but that association will fade unless refreshed (see the Spacing effect, first studied by Hermann Ebbinghaus in his book 'Memory: A Contribution to Experimental Psychology' in 1885, should be considered Common Knowledge by now). A systematic way of storing memorised content so that it can be reviewed efficiently is required and the Method of Loci is the way chosen by this project.
- **Virtual Method of Loci** - The Method of Loci is typically done with a well-known location but (Legge, Madan, Ng, and Caplan, 2012) found that it can be just as effective with a lower-detailed created virtual environment. Following on from that the project will create a compact virtual environment consisting of a series of cube rooms. Each room will be made up of an anchoring visual object in the centre as well as two alcoves and a

doorway to other rooms in each of the four walls, the ceiling, and the floor (for a total of six doorways and twelve alcoves per room).

- **Expansion of storage system** - Storing information can be done at the top level of the Virtual Method of Loci by storing the virtual objects representing information to be memorised directly in the alcoves of the rooms. This would however only allow twelve pieces of information to be stored per room which is not very efficient. Instead each alcove will be filled with a randomly chosen visual object which will then be split into five sub-objects ("Russian Doll" method from the Giordano Memorization System created in 1990 by Vladimir A. Kozarenko), twelve visual objects ("Free Association" method from the Giordano Memorization System) on each sub-object, and then each of those also split into five sub-objects. This gives three thousand six hundred "slots" to store information on in each room, allowing rooms to encompass entire topics.

All of which was necessary preamble to give context to what the project will be. A 3D application giving a representation of the Virtual Method of Loci implemented with WebGL to run in any common web browser and using First Person Shooter controls. It will have a text tutorial that will teach how to internalise the memorisation system and 3D models will be able to be selected for the alcoves, Free Association, and room anchor visual objects.



(A very rough prototype of one of the rooms. Blue squares are doorways to other rooms.)

Tools and Technologies

three.js - A Javascript library/API built on top of WebGL.

Any modern web browser - For production and end-use a web browser that supports WebGL will be required.

3DModelHaven - A public domain/copyright-free (CC0 license) repository of 3D models.

Skills Required

Web Coding - A combination of HTML, CSS, and Javascript.

Graphics Coding - An understanding of how graphics programming is done in the web browser (using three.js) including loading of 3D models.

Server Administration - To keep initial costs down having someone who can set up a cheap server to host the web application.

Marketing - Being able to make a sales pitch selling the idea/implementation.

Course Creation - Being able to use the created product to create pre-filled databases of images/content to serve as examples.

The above skills are all commonly available and easy to pick up. No special software or hardware is required for the project.

Outcome

There are several different outcomes possible for the project that would be considered "successful": having a personal memory system and a way to share it with others, selling it to investors/another company, university adoption (and so a more efficient way of learning new courses), or dedicated to the common good and adopted by the masses (like Wikipedia).

The impact of the project will be different depending on what outcome ends up being aimed for. As a personal project, the impact will be minimal; as a tool adopted by universities or the masses, it could fundamentally change how things are taught.

The "outcome" of the project is something I'm less interested in; the idea and the implementation are what is interesting to me.

References

Legge, E., Madan, C., Ng, E., and Caplan, J., 2012. Building a memory palace in minutes: Equivalent memory performance using virtual versus conventional environment with the Method of Loci. Acta Psychologica, [online] 141(3), pp.380-390. Available at: https://www.academia.edu/2987335/Building_a_memory_palace_in_minutes_Equivalent_memory_performance_using_virtual_versus_conventional_environments_with_the_Method_of_Loci

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Other potential ideas

Realtime model of a location using multiple security camera pairs (+ VR?)

Drive-by-wire human-powered vehicle (within the Australian legal classification of a bicycle)

Handheld chording keyboard (see http://www.alphagrip.com/) but with a different take on it (improved mouse input at a minimum)