GitHub URL: https://github.com/S9406133/IntroToITAssigment1

GitPages URL: <https://s9406133.github.io/IntroToITAssigment1/>

# --Personal Information--

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I grew up in Heywood, as small country town in western Victoria and graduated High School in 1993. It was a great place to grow up because we had all the fresh air and open space and we were given the freedom to explore.

I moved to Melbourne after high school and now live in the western suburbs of Melbourne with my wife and kids aged 2 and 4 years, who are all fantastic.

I currently work full time with Australia Post, and have done since 2002 in various rolls in the retail area.

An interesting fact concerning my family is that I have two brothers and my wife has one sister, and all of us have two children each and we all have an older girl and younger boy. Statistically I would think that this would be improbable.

# --Interest in IT--

I first became interested in IT when my parents bought a computer for me to do my high school work. I remember it had the latest Intel 486 processor and both 5.25in and 3.5in floppy drives. I had to figure out DOS to use it (it came with a paper manual) and I mostly used it for games, which I had to mail order, or writing little Pascal programs with my friends.

After high school I was accepted into the Bachelor of IT course at RMIT Bundoora, which I now realise was a great opportunity for me. However, as an 18-year-old at the time I didn’t enjoy university life and decided to move on to other things after a few months.

Since then I have gone back to study IT two more times. The first time I studied programming at a private training institute, mainly learning C++. But after the initial course I was told by others in the IT industry that there were “no jobs in Australia for programmers”, so because I already had a well-paying job I decided not to continue. A few years later I decided to do a network administrator course also through a private training institute and ended up getting an A+ and the Microsoft Certified System Administrator certifications. However, all the entry positions I could use these qualifications to apply for at the time were quiet low paying compared to the position I held at the time, so again I decided not to pursue it.

I chose to enrol at RMIT because of their reputation as a top-quality technical university. I have known other people who have studied at different campuses and were well supported. Also, I feel that IT employers may value an RMIT graduate over others.

I expect that through RMIT I will learn about the latest and emerging trends in IT, which will bring my IT knowledge up-to-date and make me more employable in the field. I also hope to meet knowledgeable people who I can learn from.

# My Ideal Job

<https://www.seek.com.au/job/50561013?type=standout#searchRequestToken=3ba1b16a-b783-4d2b-8759-342673483a3d>

This job ad is for a Software Design Engineer at a major Australian defence and aerospace engineering company. It involves designing and developing software to implement into the products that they produce. The position would also involve post-implementation support. This job appealed to me because not only is it a software design role, it would also involve an understanding of the mechanical design of their products and the associated electronics. My current main interest in IT is the area of programming and software development. I would consider a role like this to be the pinnacle of a career in software development. Combining it with electronics, mechanical engineering and the aerospace industry makes it stand out from other jobs because they are all areas I have a keen interest in.

This role would require a significant amount of education, including an IT degree and post graduate qualifications in engineering and possibly electronics as well. A thorough knowledge and experience with basic technical skills such as programming in C, C++ or Java, as well as excellent communication and problem-solving skills. It would also be necessary to have several years of experience working in similar roles were software project implementation processes such as CMMI or SPICE for electronics were used.

Currently I have no qualifications relevant to this role. While I have studied C++ programming and electronics in the past, it was only to first year university level and I didn’t achieve any actual qualification. I have not studied mechanical engineering at all (unless you count materials studies at high school). As for work experience I have spent most of my career in customer/client facing roles or managing small teams in unrelated (non-IT) jobs. I am sure that the communication and management skills I have learned from these roles are widely transferrable though.

To achieve the necessary qualities required for a role such as this, my first step is to complete the Bachelor of IT course I have just begun. My focus would need to be on the software development side of IT. Once completing the degree, I would need to get a role possibly as a junior programmer and then work my way up through more challenging roles as I gain experience. While working and progressing my career I would need to complete further study in either electronic or mechanical engineering. It would also be necessary to stay well informed on the current trends and developments in software engineering, either by studying at home or formal education.

Graphical user interface, text, application

Description automatically generatedText

Description automatically generated

References:

En.wikipedia.org. 2020. *Capability Maturity Model Integration*. [online] Available at: <https://en.wikipedia.org/wiki/Capability\_Maturity\_Model\_Integration> [Accessed 19 September 2020].

En.wikipedia.org. 2020. *SPICE*. [online] Available at: <https://en.wikipedia.org/wiki/SPICE> [Accessed 19 September 2020].

# Personal Profile

## This is the Myers-Briggs Test result I received.

While some of the Traits are accurate others are not and this has skewed the result. I think I am definitely “Introverted” and “Observant” but not “Turbulent”. The resulting “Adventurer” personality describes some of my personality traits but to me a lot of it is wrong. For instance while I like to keep busy, even when alone, I don’t often engage in risky behaviours or have a quick temper.

It is difficult to comment on how this result would influence my behaviour in a team when I feel that it is so inaccurate. However being introverted and observant means when I’m in a group I tend to sit back and watch, instead of being forthrightly involved. But I would speak up when I feel I have something important to add to the discussion.

When forming a team it is important to have people with a variety of experience and personality traits. Extroverted people are often good at leading discussions and keeping communication open between the team members, but they can sometimes miss smaller details. While introverted people can often sit back and take everything in and point out if any details have been overlooked.

**Your test results**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| |  | | --- | |  | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |  |  | | --- | --- | | **Type** | [**“The Adventurer”** (ISFP-T)](https://www.16personalities.com/isfp-personality) | | **Traits** | |  |  |  | | --- | --- | --- | | Introverted | - | 74% | | Observant | - | 66% | | Feeling | - | 60% | | Prospecting | - | 57% | | Turbulent | - | 58% | | | **Role** | Explorer | | **Strategy** | Constant Improvement | | |

<https://www.16personalities.com/free-personality-test>

Reference:

16Personalities. 2020. *Free Personality Test | 16Personalities*. [online] Available at: <https://www.16personalities.com/free-personality-test> [Accessed 19 September 2020].

## This is the Learn Style Test result I received from whatismylearningstyle.com.

The result is that I am a “Visual Learner” which I would agree with. It points out that I learn best when reading or writing information. Also, diagrams will aid my learning and I would learn best when left alone to study the material. This result is not a surprise to me. I have discovered over years of studying and even at work, that these are the best methods to employ when trying to learn new concepts.

When working in a team, if other team members want to explain new concepts to me it would be best if they provided visual aids. Such as written slides, diagrams or charts. I would also be the one most likely to produce these types of material for the team.

When forming a team it is best to have people with a variety of learning styles. This is an advantage in a team environment because information can be communicated in a variety of ways. If there is a person in the team who learns best with the currently communicated style, the team as a whole will receive the information more efficiently.

**Based on your responses, you are primarily a:**

**Visual learner.**

If you are an VISUAL learner, you may wish to find out more about what you can do to maximize your learning potential.  
Click the visual link below or click the back button on your browser to view the visual learning modalities links in the middle of the main page .

|  |
| --- |
|  |
| **General Facts** |
| * The visual learner remembers 75% of what they read or see. * Demonstrations from the blackboard, diagrams, graphs and charts are all valuable tools for the visual learner. * Generally, analytic visual learners will process the printed word before iconic (pictorial) information. * Generally, global *visual* learners will process iconic (pictorial) information before reading the printed text. |
|  | |
|  |  |

<http://www.whatismylearningstyle.com/learning-style-test-1.html>

Reference:

Whatismylearningstyle.com. 2020. *What Is My Learning Style - Learning Style Test 1*. [online] Available at: <http://www.whatismylearningstyle.com/learning-style-test-1.html> [Accessed 19 September 2020].

## This is the Career Test result I received from 123test.com.

The result of the test showed that my top career personality types are “Realistic”, “Investigative” and “Artistic”. The lowest ranking type was “Enterprising”. I would agree with these results, as I do tend to enjoy and seek out tasks that have these attributes, and shy away from competition and leadership. However, the actual professions the web site has suggested seem quite random and unrelated.

In a team environment I would tend to gravitate towards to the more hands on tasks, building things and creating displays etc. But also be less likely to want to take the lead on any project or be the “salesperson” in the group.

When forming a team it is important to include people with different combinations of attributes. This balances the skills of the team so that projects can be completed more effectively. This also means that people aren’t forced to fulfill roles which they would feel uncomfortable doing.

**Career test result**

**9356**

In this test you had to choose between pictures showing specific work activities. Each picture depicted work associated with a specific type of personality. These types are derived from Dr. John Holland's theory of careers and vocational choice, known as Holland Codes.

There are six personality types in Holland's model:

* **Realistic:** practical, physical, concrete, hands-on, machine, and tool-oriented
* **Investigative:** analytical, intellectual, scientific, explorative, thinker
* **Artistic:** creative, original, independent, chaotic, inventive, media, graphics, and text
* **Social:** cooperative, supporting, helping, healing/nurturing, teaching
* **Enterprising:** competitive environments, leadership, persuading, status
* **Conventional:** detail-oriented, organizing, clerical

**Personality types and Holland Codes**

Dr. Holland did not say that a person is just one of these types. Then there would be only six types of people in the world. Instead, any one person can have interests associated with all of the six types. When you rank the types, starting with those you have the most interest in to those you have the least interest in, you get your specific Holland Code.

There are some 720 different combinations possible, like ISERAC, AIRSEC, or CSERIA. Generally, however, only two or three letters are necessary to create a useful description, such as SC, IRC, or AIC. Such a description may apply to both a person and a work environment. By typifying both people and work environments with Holland Codes, we can calculate matches between them. This helps you assess a potential career or vocational choice.

**Your personality type**

You preferred 'Realistic' the most, followed by 'Investigative' and 'Artistic'. Your six letter personality type is 'RIACSE'. Your personal preference is also shown in a graph below.

**REALISTIC 27% INVESTIGATIVE 23% ARTISTIC 20% CONVENTIONAL 17% SOCIAL 8% ENTERPRISING 5%**

**Your personal Holland Code**

Depending on how strongly you favor any specific type you can compose your own personal Holland Code. You do this by taking the first letters of the types you favor most. In your case, this is the letters R, I and A Your personal Holland Code then becomes either RIA, RI, IR or even IRA.

<https://www.123test.com/career-test/>

Reference:

123test.com. 2020. *Career Test - Free Online Aptitude Test - 123Test.Com*. [online] Available at: <https://www.123test.com/career-test/> [Accessed 19 September 2020].

# Project Idea

Overview

My project is to create an app for teaching beginner guitar playing. However instead of being the standard video tutorial style app that is widely available, the app I develop will include two significant features. The first being that it would have real-time sound analysis of the chords it is asking you to play and giving on-screen feed-back. The second and most significant being that it would have real-time video analysis of the chord shapes you are making with your hand on the fretboard. Again, on-screen feed-back would be provided. This feature is not available on any other online product. There would be different options available, such as only providing sound or video analysis or both at once. You would also be able to record your practice and have the analysis provided to you afterward.

Motivation

Guitar playing in the world is as popular as ever. Guitar sales in 2019 were up by 12% - 20%. However, the majority of new beginners are turning to online training tools to learn the basics and hone their skills. Tools such as YouTube videos and tutorial-based apps are convenient to use and good for teaching the basics but aren’t able to tell you if you are employing the wrong technique which can lead to students learning incorrect finger shapes and patterns. If incorrect techniques are learned early on it can be quite difficult to undo the damage. The best option is to have a qualified teacher who can instruct you, but this can be expensive, and the lesson times may not suit your own schedule. The next best option is to have an app that you can use whenever you like that can give you accurate feed-back on your technique.

Description

This app would allow users to go through a training course that would take them from absolute novice to an accomplished guitar player. It would also give them the option to start at any level they like if they are coming into it as someone who has already been playing for some time. The user would be required to sign into their account, this account would keep track of their training progress and the areas they have completed training in. When starting as a beginner the initial training would teach the user the most commonly used individual chords and then once those are mastered, they would move on to chord progressions using those chords that they have just learned. After chord progressions, basic strumming techniques would then be taught. Songs would be taught next. Users would be asked to choose from a list of songs which included the chords they have learned. They would practice those until completion. Users would also have option to select any song they like from the available catalogue however, if the song they chose included chords or playing techniques they had not previously learned, they would be instructed to start by learning the new chords or techniques individually before they moved on to practicing the actual song. Although this is the recommended learning path the user interface for this app would give users complete control over what and when they learn each technique or song. The user interface would also allow the user to control different options and settings in the app. Options such as the type of guitar being played, whether playing left or right handed will be available. They would also be able to review their lesson progress.

During lessons, the user will see on the screen an animation of how they should be holding their hands. Next to that the user would see a video image of themselves playing. They would have previously been required to set their camera to the correct position to capture their playing. As the lesson progresses the animation would show them the correct hand shape to make the chord and the user would copy this. Feed-back would then by given based on the position and movement of the players hand, as well as the sound of the chord played. Feed-back would be given either as audio or text on screen depending on the option the user had selected. Teaching of strumming patterns would be done in a similar way with video and animation side by side on the screen. When learning chord progressions and songs a section of the screen would show the upcoming chords to be played and the timing. The user would be able to record their lesson to review at a later time. The focus of this app is the video feed-back system and users having full control over their lessons.

Tools and Technologies

For this app to be fully functional new software would need to be written for the actual app navigation and GUI. As well as audio recognition and video recognition software. While audio recognition software is relatively common-place and would be easily integrated into the app, video recognition software is still an emerging technology and a significant amount of development and testing would need to be put into this area. The software would be written in a programming language such as Python. The user would need to use the app on a device which has a camera, microphone and speakers.

Skills Required

A professional app or software development company would need to be engaged to create the app navigation, GUI, audio and video recognition software. Videos would need to be created to show the user the correct chord finger positions. A professional guitarist would need to be consulted so the software could be calibrated to correctly assess the guitar playing techniques being presented by the user. An audio engineer would also be consulted to give similar advice specifically about the audio recognition software. All these professionals would be relatively easy to find, although expensive. The software itself would take a significant amount of time to develop and implement.

Outcome

If this app is successfully implemented beginner guitar players will have an excellent alternative learning platform. It would be the only app available that includes finger technique feedback so people would move away from other apps to use this one. They will be able to practice at a time of their choosing and receive accurate and timely feed-back about their playing style without the high cost of and inconvenience of an actual guitar tutor. While people will still use YouTube because it is free and guitar tutors because of the interpersonal teaching method, this app would be the best option for those wanting an online tool that has the benefits of an actual tutor.

References:

The Leader in iOS Foundations Training. 2020. *How To Make An App In 2020 From Start To Finish (10 Steps)*. [online] Available at: <https://codewithchris.com/how-to-make-iphone-apps-with-no-programming-experience/#7-make-the-app-with-one-of-these-options> [Accessed 19 September 2020].

Implementation), B., 2020. *Build A Face Detection Model On A Video Using Python*. [online] Analytics Vidhya. Available at: <https://www.analyticsvidhya.com/blog/2018/12/introduction-face-detection-video-deep-learning-python/> [Accessed 19 September 2020].

En.wikipedia.org. 2020. *Sound Recognition*. [online] Available at: <https://en.wikipedia.org/wiki/Sound\_recognition> [Accessed 19 September 2020].