A2: Coding Prototype Project
Working With Data & Code, 52685
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1000-word Written Personal Reflection –

Over the course of the last semester, I have been challenged with learning material that I had never thought that I would attempt. The course, "Working with Data and Code [52685], has taught me to appreciate and have a sound understanding of what code is, why it is important and reflect on the daily interactions that I may have encountered with code. I have been able to identify code within the everyday such as on platform displays at train stations, my alarm clock – that wakes me up in the morning, and comprehend physical computing components that are used in my cat's automatic litter box. I have truly come to appreciate the uses for code and formed a clearer understanding of how to interpret it and utilise it to make processes more efficient.

In our very first lecture coordinated by Dr Andrew Stapleton, he clearly explains what code is, "code is essentially an approach to convey a message" (Stapleton, 2025). In hindsight, this definition is relatively simple yet incredibly impactful to my primary understanding of what code is in general. As my knowledge at the beginning of the semester was close to nothing, with that definition, a sense of clarity formed around the idea of myself and the practice of coding. In the second lecture, we focused on how humans interact with code in our everyday lives. One example of code interfering and 'influencing' human behaviour piqued my interest. The lecture highlighted an event where a performance artist, named Simon Weckert manipulated a traffic jam on google maps by carting around 99 smartphones on the roads of Berlin. This caused the destination app to redirect various drivers on to alternative routes, despite there being little to no cars on the road. The artist intended for the 'google maps hack' to draw attention to the systems we take for granted and how we let them shape us (Barrett, 2020). The artists' intentions were reinforced within me that day as I became amazed by how code can be used to create art and culture as well as an agent for influencing human behaviour – as I am well aware of how inconvenient it may be to take an alternative route or seeing the ETA time increase due to congestion.

This concept that code could be affective in nature and create physical behaviours, was playing around in my mind as I was developing my prototype pitch. This led me to creating my gameplay titled 'LilyPad', although there have been some changes from the original idea to the finished product. The game requires you to play as a frog who must consume 'flies' that spawn randomly on the map whilst a 'crocodile' chases after your character. You begin with 5 lives and must catch eight flies before moving up to the next level where the crocodile's speed increases as you pass each level. My aim for this project was to develop a simplistic game that could relieve young people from the act of "doomscrolling" and offer them a light-hearted game as a form of stress relief. A study conducted by Sharma and colleagues (2022) found that doomscrolling is linked to problematic internet and social media usage and that younger adults were more likely to engage in the act (Sekhon, 2024). Hence, my

motivation to utilise code to initiate positive behaviours and experiences rather than the negative impact brought upon by the artist Weckert or the digital infrastructures of social media.

Whilst developing LilyPad, I became enamoured by coding as a creative and expressive medium, allowing me to apply my practical learning through our weekly workshops into my prototype. In our first workshop, I recalled a micro-bit coding challenge which tasked me to create a 'plant-feeder' animation using 5x5 pixels. This provided me with the foundational knowledge of how to create animations and "sprites" on Microsoft Makecode Arcade which evidently, became my favourite part of the entire coding experience. I was able to see how code can be translated or transferred across various devices and systems – where the light pixel had to be signalled when working with the micro-bit and how a number reference would signal a certain colour on the Makecode program. I began to see code as more than just a technical language but as a discipline of thought.

In the early development of 'LilyPad', I relied heavily on the tutorials such as "Chase the Pizza" and forums provided by the Makecode program to develop a scaffold for my game design. I quickly understood how important it was to play and interact with other games that were available on the program to familiarise myself with reading the python code itself. This significantly accelerated my education on the coding language as I learned to experiment and extend the code to suit my own game design needs. I was also forced to think algorithmically – to break down the gameplay accordingly and learn how to structure the code in the most efficient way possible as more complexity was integrated into the game. For instance, the crocodile's pursuit of the frog depended on understanding sprite overlap detection and the conditional statements when the two sprites collided which caused a life to be deducted and the sprites to bounce away from each other. This process taught me how to create clear and concise logic loops to keep the game running in a continuous motion of cause and effect.

There were many adjustment phases I had to go through when I began to prototype test the game. Specifically with the crocodile's speed, I learned to appreciate the process that game designers must go through to create a product that is suitable for all players and reflected on the playability of the product rather than just the end goal of completing it. At certain speed settings for the crocodile, various players, ranging from low-moderate to high gamers performed at varying levels. This indicated to me what speed was appropriate to begin with and gave me further insight into how the levels should progress to improve the gameplay balance.

MakeCode Arcade was the ideal learning environment to visualise how code fits together through its "blocks' component. I was able to confidently bring my ideas to life through blocks and efficiently translate them into python code. The various learning materials such as youtube tutorials and online forums supplemented my learning and gave me the confidence to complete 'LilyPad'. My experience with coding has enabled me to gain an appreciation for the language as important and intrinsically artistic to our world.

References

Barrett, B. (2020, February 3). An Artist Used 99 Phones to Fake a Google Maps Traffic Jam. Wired. https://www.wired.com/story/99-phones-fake-google-maps-traffic-jam/

Sekhon, A. (2024). Doomscrolling and its impact on Mental Health. Indian Journal of Health and Wellbeing, 15(4), 611-613. http://ezproxy.lib.uts.edu.au/login?url=https://www.proquest.com/scholarly-journals/doomscrolling-impact-on-mental-health/docview/3163931819/se-2

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