**Working with Data and Code - Reflection**

***Sienna Thelning - 25045624***

**What?**

Building Light Path was a super rewarding experience as coding was something I've never done nor thought I'd be able to do. The project started with the goal of wanting to create a game that wasn't just entertaining but had a purpose. I was inspired by research showing how video games can treat mental health conditions like depression and anxiety (Fleming and Boeck, 2012), and I wanted to incorporate EMDR therapy principles. The core idea was simple: guide a ball through a flowing tunnel to help users focus, breathe and stay present. Development spanned over 6 weeks, from week 7 through to 11. During Week 7, I built core mechanics, ball movement and path-following.

In week 8 I implemented the adaptive speed system selection. I created three difficulty levels, Slow runs at 20, Medium runs at 35 and fast runs at 50. These weren’t random, I tested multiple speeds until I found a speed level that could keep me focused and calm rather than feeling overwhelming and challenging. The menu uses a cursor variable cycling through options, and when players press A, their selection determines the pace.

The wave animation system was the most challenging feature. Seven center points spread across the screen, each moving based on a formula taking the animation timer, adding the points posting, multiplying by wave range and adding it to base Y value. The result is an eye gazing wave motion that moves up and down across the screen.

**So What?**

This project changed my understanding of coding. Before Light Path, I thought good code meant complexity, advanced techniques and sophisticated structures. But using Python and makecode showed me that good code is about clarity and purpose (Kernighan & Pike, 1999). Every variable needed a clear name and pacific function, everyone had to contribute directly to user experience.

The therapeutic design philosophy shaped my decision-making. I implanted a forgiving detection system, when players drift outside the tunnel, they have three seconds to return before the game ends. If they return in time, the timer retests. This wasn't just a technical choice, it was about creating an experience encouraging focus without inducing stress (McGonigal, 2015). Traditional games punish mistakes harshly, but Light Path guides rather than punishes.

I initially assumed faster meant harder and more stressful, but through playtesting and peer feedback I realised after modes serve a different therapeutic purpose. It demands such complete concentration that it redirects your mind from anxiety. It's not about difficulty, it's about cognitive load and distraction. This insight changed how I balanced the three speed modes.

My feelings changed throughout the development. Week 7 was exciting, everything felt new and full of possibilities. Week 9 brought frustration when I tried adding visual polish but hit a few constraints. Initially disappointed, this led me to creating a cleaner simple design. By Week 10 class feedback about the game feeling relaxing and calming made me feel good, with feedback being to not have music to make the people playing the game to feel more present. Knowledge came from multiple sources. Research on video games and mental health provided a theoretical foundation (Fleming & Boeck, 2012) (McGonigal, 2015) while EMDR therapy principles guided visuals tracking elements.

**No What?**

Moving forward, this project gave me important insights about my coding approach. First, constraints aren’t limitations, they become design opportunities. Restrictions forced creativity and intentionality with every decision. In future projects I want to embrace constraints rather than going against them. Secondly, user experience isn't just an interface design, it's embedded in every code line. How I structured the game loop, mathematical formulas for wave animation and collision detection timing all shaped how people felt about playing. This made me conscious of the emotional weight of coding choices (Norman, 2013). Going forward I want to not just ask “does this work?” but “how does this make someone feel?".

If I faced similar projects, I'd invest more time in playtesting with different user groups. While I got peer feedback on things like music and pace, I mostly tested myself, tuning into my own stress responses. Different people respond to visual stimulation differently. More diverse feedback would have helped create speed modes working for wider user ranges. I'd like to explore further the intersection of accessibility and therapeutic design in greater depth. Light Path works through visual tracking but what about users with visual impairments? Could I use sound to create the same effect? This project opened up questions about inclusive design I want to investigate more deeply. I also am curious about the data side of therapeutic games. What if Light Path tracked not just tunnel adherence but how accuracy changed over time. Could that data provide insights into stress patterns or therapeutic effectiveness? There is a whole lot of code and data literacy I only hit the surface of during this game development.

Ultimately, what contributed to my project was constantly keeping the users in mind, keeping that the central thought of all the decisions made throughout the project. The code with the best output was normally the code that was the simplest with clear variable names, straight forward logic and focusing on the emotional experience I wanted to create. These are the insights I will carry forward into future work.

***CODE PROTOTYPE PROJECT:***

<https://youtu.be/rOgvabN9aTI>

**References:**

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