Brain Games

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**Exam Report**

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1. **Introduction**

This report details the construction of two prototypes that illustrate an investigation and finding of an answer to the hypothesis question: How can I use my own mental health experiences and the medications I use to manage them as subject material for attack simulation experiences in a positive light?

The solutions developed are digital and interactive, relying on user input. The scope of the development for the solutions was strictly confined by the requirements set out in the hypothesis question. This report contains a section detailing and breaking down the hypothesis question, providing relevant context, discussing the research and exploration required for the solutions, and discussing how the process and methodology will be discussed. Then, the process and methodology for each prototype will be discussed in detail, this will be followed by a reflection on this assignment, the success of the investigation and suggestions for improvement. Thereafter the report will be concluded.

There is an appendix at the end of the report containing documents and relevant information pertaining to the report.

1. **Hypothesis**
   1. **Hypothesis Question**

**How** can I use **my own mental health experiences** and the **medications I** **use** to manage them as **subject material** for **attack simulation experiences** in a **positive light**?

* 1. **Breakdown and Context of Hypothesis**

The words and phrases that have been made bold in the above hypothesis question will be defined and explained in order to breakdown the hypothesis as well provide necessary context for both the hypothesis and the remainder of the report.

* + 1. **How**

“How” is literally defined as “by what means” [1]. Various solutions using the requirements in the hypothesis should be found, and the means by which these solutions are found should be investigated.

* + 1. **My own mental health experiences**

I am specific here about using “my” in the hypothesis. I am not trying to generalize mental health issues for all persons, the context of these experiences is entirely my own. I define mental health experiences as the way my mental illnesses (mainly anxiety and depression) impact my life, this includes how I manage my mental illnesses with medication.

* + 1. **Medications I use**

I am specific about the usage of the world “I”; I am only exploring medications that I have personally used. The medications that I refer to are used in the treatment and management of mental illnesses. Please refer to the appendix of this report for a full list of the medications I refer to in this prototype.

* + 1. **Subject material (my own mental health experiences and the medications I use to manage them)**

Subject material is the concept that the design of the solutions be based on. The entire design should relate back to the subject material. It may not be possible to ensure that absolutely every faucet of the designs depend on the subject material, but every effort should be made to achieve this, and explanations should be given where not achieved.

* + 1. **Attack Simulation Experiences**

The prototypes developed as solutions may be considered “games”, but the aim is to develop experiences. The solutions should receive user input and produce an output based on the input that aids an overall demonstration of a concept. The concept is an “attack simulation”. I define an attack simulation as the increasing and decreasing of variables representing either health, energy, attack strength, etc. through actions performed by the user or the prototype system.

* + 1. **Positive Light**

Mental illness is not a very “positive” subject to deal with. However, I aim to focus mainly on the role that medications play in my mental health experiences, not necessarily the negative impact that mental illness has on my life. I want the results developed as solutions to be positive in nature. This does not mean that the experiences should be “fun” or “light-hearted”, but the negative consequences of mental illnesses should not be at the forefront of the solutions developed.

* 1. **Research Required for the Hypothesis**

For a solution to be developed as an answer to the hypothesis, much of the research should include self-reflection of my personal experiences with mental illness. Along with this, research should be done on the medications that I use to manage my mental illnesses in order to generate ideas on how to develop systems based on them.

Research should also be done by playing games with battle and attack systems in order to learn about different attack simulation experiences.

The main games played and used as reference and inspiration for the developed solutions were:

**1. Pokémon Legends: Arceus**   
For this game, special attention was given to the Pokémon battling system. The system is turn-based, which is a battle genre that was used for development of one of the systems.   
**2. Undertale**  
Undertale consists of many turn-based combat scenarios, with very creative explorations of the traditional turn-based fighting system.  
**3. Chess**  
Chess is an interesting turn-based fighting experience to explore. Chess does not have traditional variables such as health that can be increased or decreased, but there are the pieces themselves, which can be considered variables that are lessened throughout the progression of a game. Chess was not used as a huge inspiration for the systems developed but is an interesting model to investigate for a turn-based fighting experience.  
**4. Breath of the Wild**  
Breath of the Wild does not contain any turn-based combat, and the combat systems are complex, but is interesting to explore because at its base level, it is still simple the increasing and decreasing of variables that determine the outcome of different attack encounters.

* 1. **Exploration Required for the Hypothesis**

For the hypothesis question to be answered successfully, more than one medium for exploration should be utilized. For this assignment, two prototypes were developed in two different mediums in order to explore the effectiveness of each.

Turn-based combat was explored. The other aspect of exploration was done using Pokémon Attack Strength generators as inspiration. These two explorations are complementary, as attack strength generators can be used to implement a full turn-based combat experience. However, in order to fully explore the hypothesis question, both explorations are separate in how they deal with the subject material.

* 1. **Introducing the Process and Methodology**

The following two sections of this report will detail the process and methodology for the two prototypes that were developed as solutions to the hypothesis questions.

The prototypes will be described, with thorough instructions on how to play or interact with them, the process and methodology will be discussed in detail. The process will refer to the initial design and development of the prototype with reference to the hypothesis, the methodology will discuss the implementation of the design into the prototype itself, also with specific reference to the hypothesis.

Specific design elements will be discussed for each prototype, with reference to the hypothesis question. Where required, discussion of the mathematical equations used will be explored. Testing and playtester data will also be shown and discussed.

As the prototypes are considered solutions to the question given by the hypothesis, their effectiveness and success will be evaluated by how well they answer the initial hypothesis question.

1. **Prototype 1: Process and Methodology**
   1. **Description of Prototype 1**

Describe what the build for prototype actually is, discuss why it is in the context of the hypothesis.

Discuss the game itself and instructions on how to play it.

* 1. **Chosen Process for Prototype 1**

Describe the process for the development and design of prototype 1, refer back to the hypothesis for the process

* 1. **Methodology for Prototype 1**

Discuss how the design was implemented for prototype 1. Refer to commits from GitHub repository. Discuss script design and code.

* 1. **Elements of Visual Design for Prototype 1**

Discuss the visual design of prototype 1 – discuss decisions made based on hypothesis question

* 1. **Elements of System Design for Prototype 1**

Discuss the system design of prototype 1 – discuss decisions made based on hypothesis question

* 1. **Mathematical Considerations**

Discuss how equations were implemented. Talk about exponential function used for health and energy increases.

* 1. **Playtest Process and Significance**

Talk about how the game had to be played through in order to balance out different mechanics

1. **Prototype 2: Process and Methodology**
   1. **Description of Prototype 2**

Discuss what the build for prototype 2 actually is and why and how it relates to the hypothesis question, as well as inspiration and reference used for it.

Discuss how to use prototype 2, instructions, examples of outputs.

* 1. **Chosen Process for Prototype 2**

Discuss process used for developing design of prototype 2 in relation to the hypothesis question.

* 1. **Methodology for Prototype 2**

Discuss methodology used for prototype 2, how system was implemented. Relate back to hypothesis.

* 1. **Elements of System Design for Prototype 2**

Discuss the system design for prototype 2, discussion of functions and choices of user input and output display.

* 1. **Discussion of Prototype 2 Playtester Data**

Show examples of the playtester data collected and how it either strengthens or weakens the hypothesis question. Discuss suggestions for improvements.

1. **Reflection**

Insight into the construction – why did I choose to make two prototypes? Would one prototype have been as effective? Should I have made more prototypes? Did the development relate to the hypothesis question? What would I have changed in the construction? What technical and design lessons did I learn from this process?

, What was learned. Was it effective? How can it be improved or extended?

Were the prototypes developed effective in answering the hypothesis question?

How could prototype 1 be improved or extended to better answer the hypothesis question?

How could prototype 2 be improved or extended to better answer the hypothesis question?

Finally, what was the answer to the given hypothesis question? Is it what I, the designer had hoped for?

1. **Conclusion**

Concluding the report

1. **References**

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| --- | --- |
| [1] | Collins Dictionary, "Definition of 'how'," 2022. [Online]. Available: https://www.collinsdictionary.com/dictionary/english/how. [Accessed 27 June 2022]. |

1. **Appendix**
   1. **List of Medications Referred in Assignment**

**MEDICATIONS REFERRED TO IN THIS ASSIGNMENT**

**METHYLPHENIDATE**

Generic names, what they are commonly used for, what I use them for, any other information.

**CLOBAZAM/URBANOL**

Generic names, what they are commonly used for, what I use them for, any other information

**SELECTIVE SERATONIN REABSORPTION INHIBITORS**

Generic names, what commonly used for, what I use them for, any other information

**BETA BLOCKERS**

Generic names, what commonly used for, what I use them for, any other information.

Needed for appendix:

Flowcharts of systems used for prototype 1 and 2/or annotated code snippets

Annotated User Interface for prototype 1

Annotated User Interface for prototype 2

All prototype 2 playtester responses

Detailed instructions for accessing and using both builds

Link to the GitHub repository

Link to the website for prototype 2

Instructions on how to access prototype 2 if the website does not work