

Chyilax: A 3D Video Game as a Marketing Tool for Mental Breakdown Awareness Campaign

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Abstract—This research project presents the development of a video game entitled “Chyilax” – an innovative three-dimensional video game about a person’s struggle against mental breakdown while trying to alleviate its symptoms. The game was developed to be a medium that would raise awareness about the risks and conditions of mental health breakdown. The player can choose to take the role of either a college student or a working adult, both experience symptoms due to a tangled situation in their past. The player was tasked to help the protagonist to overcome the symptoms before it leads to a nervous breakdown. In order to help the protagonist, make up with the people who got involved in their past circumstances through puzzle-solving, role-playing, and problem-solving. Chyilax was developed using Unity as its game engine while 3D models were created using Autodesk Maya. The project was tested and evaluated via a virtual open house. The questionnaires were collated online using an online form that assesses the following as criteria for the game: effectiveness, visuals, mechanics, audio, and enjoyment while the website: functionality, usability, reliability, performance, and supportability as criteria. The game received an overall mean of 4.32 while the website received an overall mean of 4.35, both of which have a verbal interpretation of “Strongly Agree”, which interprets that the objectives were achieved and drawn impact to raise awareness on issues focusing on mental breakdown.

Keywords—Adventure Game, Fantasy Game, PC Game, Mental Breakdown, Awareness Campaign, Mental Health

I. INTRODUCTION

Nowadays, people can enjoy video games because of the many genres to choose from [1-3]. Most of them are for entertainment purposes only but there are genres that are able to be used in educational [4-7] and medical [8-11] fields with different game genres and designs (e.g., simulation, puzzle, maze, strategy, sports, board games, and logic). The proposed video game in this study mainly consists of three genres: Adventure, Fantasy, and Simulation. Adventure is the most common genre used in the games in the market nowadays. as

Adventure games focus on puzzle solving within a narrative framework, generally with few or no action elements [12]. Also, Fantasy Games as well. It is often inspired by mythologies and folklore where players could experience different kinds of scenarios from different types of environments. Simulation is a recreation of a real-world scenario that is designed to explore different life experiences and activities [13]. This game genre gives us the ability to experience different scenarios and obtain knowledge through the other side of our gadget’s screen without experiencing pain that could happen in a specific scenario. From an educational perspective [14], it provides the ability to obtain knowledge about our inside and outside world with almost no effort. It is where experts could provide information for people to acquire like a close-up look at different planets in the galaxy, the wonders of our ecosystems around the world, and a clearer look at microorganisms – a way to educate people [15-18].

A. Study Objectives

The general objective of the project is to develop a game entitled “Chyilax” for PC that will raise awareness about mental breakdowns. Specifically, this study aims to (1) design a total of two characters and six stages; (2) identify different factors that trigger mental breakdown occurrence and implement it as game mechanics; (3) implement mental health experts’ advice in overcoming mental breakdowns as part of the goals of the game; (4) develop a CMS-based website for the project with group and client profiles; and (5) test the effectiveness of the project through ISO standard software testing using the mechanics, controls, aesthetics, sound, and story while performing test cases for the website to ensure no errors and bugs are present.

B. Scope and Limitation

The study covers information about mental breakdown and the ways how to overcome or cope with its occurrence. There will be two types of characters for the game which is a College Student with high expectations who experienced his first failed subject. and a troubled working adult who experienced different

trials and errors in his work and family life. In the College student gameplay, there will be four stages or levels to complete in order to overcome the Mental Breakdown Occurrence in the character. while in the Working adult, there will be 8 stages or levels to be completed. Every challenge or stage is based on the situations and causes that lead to their mental breakdown symptoms. The game will also have a load game system for players to continue their current progress anytime without worrying that they may come back from the start if they accidentally closed the game. the player must help them to conquer their character’s mistakes personified. and while on it, learns the values that they have lost and must gain again.



Fig. 1. Comparison with Similar Game Titles

The game will have typical 3D Third-person game controls for the character’s movement and interaction. For the development of our website, our team will be using HTML, CSS, and PHP for the complete design and usability. and for the Uploading of content and opening of our website, the team will be using online hosting providers in order to host our website. The research would be conducted within the FEU Institute of Technology with (50) students respondents from the college department and (10) Mental health experts. The study is limited

to the factors that lead to mental breakdown occurrences like intense stress and anxiety. This objective is important especially with the consequences of the COVID-19 pandemic [19-23]. The video game will cover scenarios of a college student and a working adult with specific scenarios and experiences that caused them to acquire the symptoms of mental breakdown occurrence. Chyilax can only be played on Windows PC. The proponents chose the PC platform since we are much more experienced in developing games for the PC. The proponents were also advised to develop a PC game. The proponents believe that developing a video game in the selected platform will make workflow easier and work reference abundant as well as the comfortability of the controls when playing a PC video game is more convenient given the type of game being developed.

II. RELATED LITERATURE

Video games may have the reputation of consuming one’s attention and time. It becomes a saying that playing too many video games may hinder one’s potential specifically in their studies and health. But having games as a medium to improve one’s performance is beneficial [24-28]. There are many misunderstandings about games like the negative effects they have on their mental health, but in reality, video games have many benefits, like improving social interaction through online gaming [13]. Video games are a great alternate way to stimulate the mind and improve mental health [29-31]. And that playing video games offer numerous benefits to their mental health.

III. DEVELOPMENT METHODOLOGY

For the system development life cycle, the proponents decided to follow the SCRUM Methodology for their project. The SCRUM methodology is an agile methodology, used to manage a project, especially for application development.

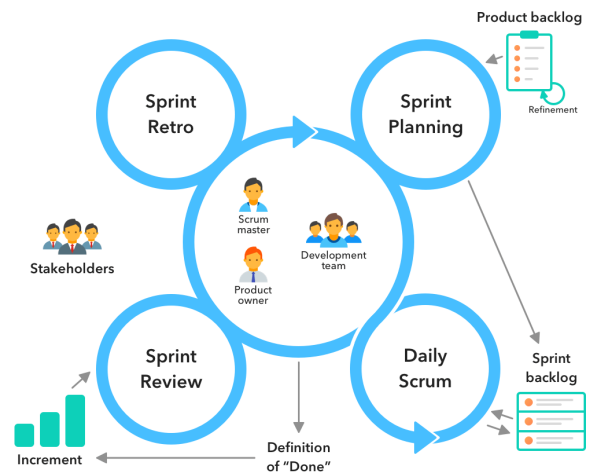


Fig. 2. Scrum Methodology Diagram

This methodology mostly relies on the communication and organization of the project team [15]. The project team must be able to provide some feedback and features that would be implemented into the project, especially if only given for a specific time period. The proponents selected this methodology because it is appropriate and effective for the development of a game project given a limited timeframe [32].

A. Project Design

1) Basic Premise

The game contains two different stories, it is up to the player to choose which playthrough will the player go through.

Young Adult - The protagonist is a troubled working adult. Due to excessive work and his pessimistic boss, this has led to our protagonist's stress accumulating, and because of this, our protagonist started getting extremely exhausted which affected his relationship with his family. This has led to divorce, and an emotionally distressed child who is confused about what's going on. Due to this event the protagonist experiences a mental breakdown which turns him into an emotional mess and starts having dreams where he is to face what troubles him. While facing his troubles our protagonist will have to conquer his mistakes personified, and while on it learns the values that he has lost and must gain again.



Fig. 3. Young Adult and College Student

College Student - The protagonist is a college student with a huge number of expectations on his back, experiencing his first failed subject. Due to the fear of what his relatives will do or how they will react to this matter, the protagonist's courage dropped to the bottom which made him unable to ask a friend for help. The protagonist must learn how to help himself first in this kind of scenario in order to gain some courage and break free from the bindings of the kind of mental stress he is experiencing at the moment. He must face the doubts, fears, and mistakes he's made to learn the values he has lost and be a better version of himself in the future.

Enemies – Various types of enemies are available in the video game. This assortment is necessary to increase the elements of difficulty and to challenge players in their quests.

- Normal enemy - This will chase the player around and attack him when the enemy reaches him.
- Strong enemy - The strong enemy features bigger arms that are long and a special move where the strong enemy charges towards the player.
- Traps - Stalagmites that act like a trap that falls when a player decides to walk underneath it.

- Wrath - A four-armed Monster that is constantly pushing a box toward you.
- The Wall - A wall that the protagonist must confront to move forward.
- Daughter - The resemblance of the Adult Worker's Daughter. the one to whom he wanted to give anything to have her experience a greater future, only leading to obsession, misguidance, misleadingness, and into a nightmare.
- Parents - The Parents of the College Student, their voices, and imaginations of future
- Mirror - The Mirror in the middle of the dark room is the visualization of the mental breakdown itself

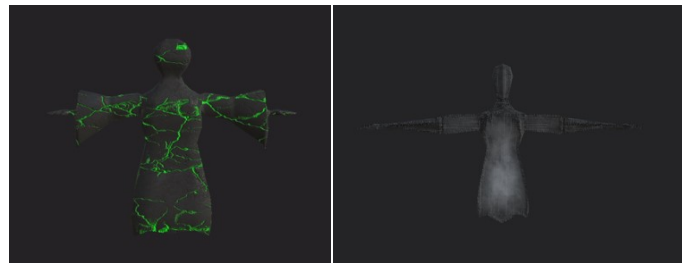


Fig. 4. Normal Enemy

Fig. 5. Strong Enemy



Fig. 6. Parents

Fig. 7. Wrath

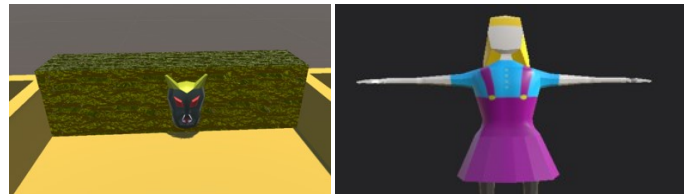


Fig. 8. The Wall

Fig. 9. Daughter



Fig. 10. Trap

Fig. 11. Mirror

2) Level Designs

Lava Biome (Figure 12) – This place is filled with molten lava, steaming geysers, and reddish hue walls.

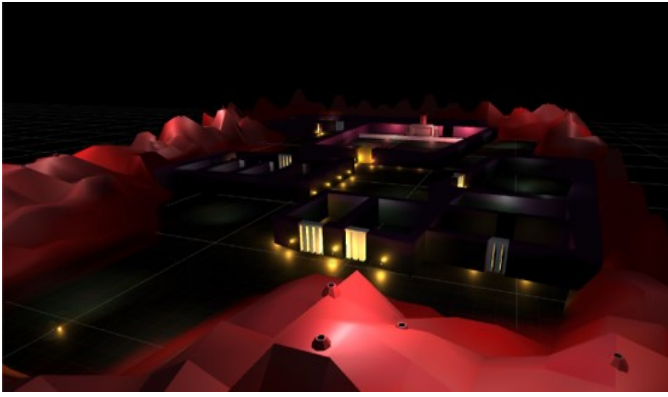


Fig. 12. Lava Biome

White Space Biome (Figure 13) – The entire place will be like a white canvas, mostly empty but has lots of secret places when you look closely while progressing through this biome.

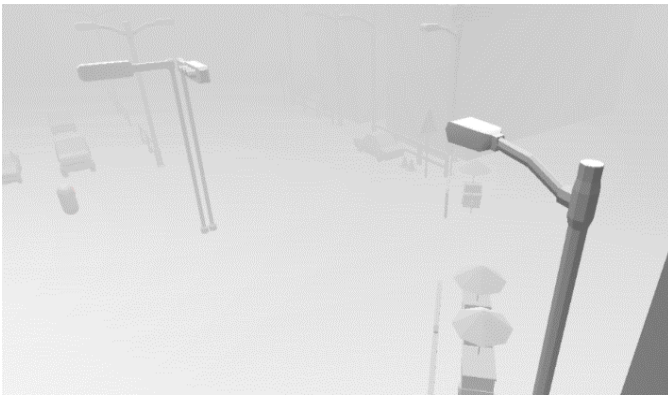


Fig. 13. Whitespace Biome

Underground Biome (Figure 14) – The place is filled with glowing mushrooms. Walls on this biome have cracks and the atmosphere in this area is dreary, ceilings will have stalagmites and random puddles will be seen here and there on the floor.



Fig. 14. Underground Biome

Gold biome (Figure 15) – This biome represents the protagonist's greed therefore it will be filled with everything the protagonist wants.

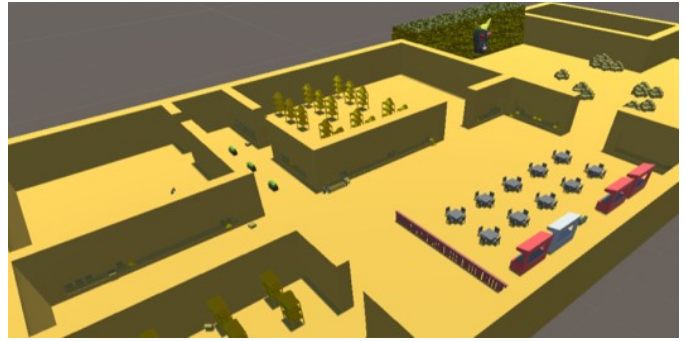


Fig. 15. Gold Biome

House Biome (Figure 16) – The House Biome will resemble the protagonist's real-life environment. there will be few alterations to it as it is in a dream.

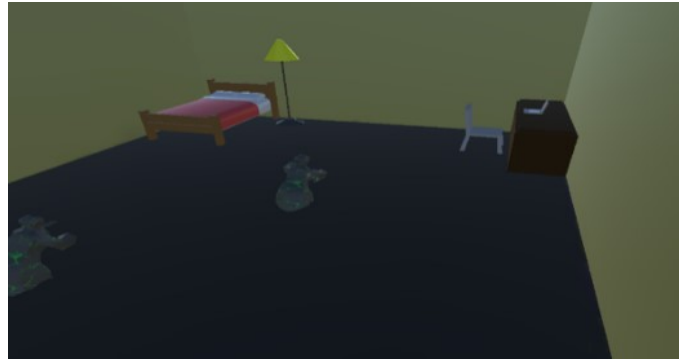


Fig. 16. House Biome

Final Level (Figure 17) – The final level will have hollow hallways, dim lighting, and a room with just darkness in it, where the protagonist faces the mirror to determine the ending.



Fig. 17. Final Level

B. Game Flowchart

After you start the game, the Main Menu will appear and will prompt you if you are new to the game or if you have already played before. Prompting a new game, you could choose if you want to do the tutorial phase or either start the story phase straight on. Each time you advance to another biome, the game will save your status.

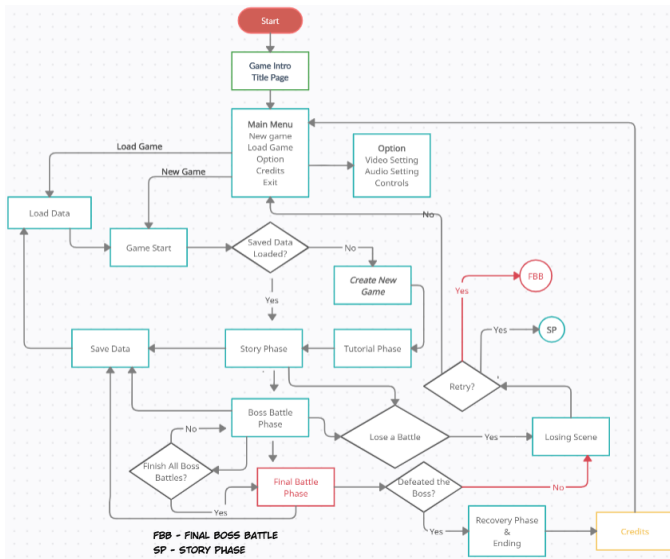


Fig. 18. Game Flowchart

IV. RESULTS AND DISCUSSION

The proponents used a five-point Likert scale for the evaluation of the video game in the survey questionnaires. Answers to each question in the survey were tallied to identify the user experiences of respondents. The means and standard deviation of each statement were computed. This procedure would assess opinions, attitudes, or behaviors, as well as the gameplay and user experience of respondents towards the game.

TABLE I. MEAN SUMMARY FOR GAME ACCORDING TO THE RESPONDENTS

Criteria	Mean	Verbal Interpretation
Game Effectiveness	4.36	Strongly Agree
Visuals	4.13	Agree
Mechanics	4.32	Strongly Agree
Audio	4.39	Strongly Agree
Enjoyment	4.42	Strongly Agree
Average Mean:	4.32	Strongly Agree

Table 1 shows the average mean of all the game question categories based on the respondents' survey results. The Enjoyment category received the highest average mean out of all the categories with 4.42. This is followed by the Audio category which received an average mean of 4.39. The next one is the Game Effectiveness category with an average mean of 4.36. This is then succeeded by the Mechanics with an average mean of 4.32 after which is the Visual category with an average mean of 4.13. The criterion was able to come up with an average mean of 4.32 having a verbal interpretation of "Strongly Agree" which indicates that the respondents strongly agreed with the status of development for the game.

Table 2 shows the average mean of all the game question subcategories based on the Mental Health Experts' survey results. For most of the subcategories, Mental Health Experts suggest minimal adjustments for some implementations, as well

as the need for improvements to produce a better depiction of a person experiencing a mental breakdown. Overall, the mental health expert's survey received an average mean of 4.37 with a verbal interpretation of "Strongly Agree", indicating that the proponents are on the right track of its implementation and progress given that the experts suggest some adjustments on how to improve the raise of awareness of the game and the depiction of the characters in the game to a person experiencing a mental breakdown.

TABLE II. MEAN SUMMARY FOR GAME ACCORDING TO MENTAL HEALTH EXPERTS

Criteria	Mean	Verbal Interpretation
Mindset		
Goals of the Game	4.25	Strongly Agree
Mechanics	4.35	Strongly Agree
Controls	4.60	Strongly Agree
Environment		
Theme	4.42	Strongly Agree
Audio	4.43	Strongly Agree
Color Scheme	4.09	Agree
Enjoyable Activities		
Fun Factor	4.35	Strongly Agree
Objectives/Quests	4.39	Strongly Agree
Exploration	4.51	Strongly Agree
Average Mean:	4.37	Strongly Agree

V. CONCLUSION

To conclude, the proponents were able to achieve most of the objectives that are defined in the project which are the following: Design a total of two characters and six stages, identify different factors that trigger mental breakdown occurrence and implement it as game mechanics, implement mental health experts' advice in overcoming Mental Breakdown as part of the goals of the game, develop a CMS-based website for the project with group and client's profile, and test the effectiveness of the project through ISO standard software testing [33] using the mechanics, controls, aesthetics, sound, and story. While performing test cases for the website.

VI. RECOMMENDATION

Considering the limitations of the project as well as the result of the data gathered from the evaluation conducted thru a Virtual Open House, the proponents recommend the following for future researchers who will develop a similar game, concept, and project objective. The proponents recommend that future researchers take notice of whether they are to tackle the general type of mental illness or to focus on a specific one, as such decisions would greatly improve the future respondents' efficiency in looking for ways to improve their targets' mental problems. Lastly, the proponents would recommend that proper research about character symbolism is crucial when developing a game that tackles mental health-related topics, as it will

determine the impact it would produce as part of your game objective. Personal experiences concerning mental health could contribute as well. It could be used to generate ideas that could serve as your foundation for your game. Creating a storyline that revolves around a simple mystery or a problem could end in a creative gameplay journey. Don't be afraid to tackle sensitive topics like mental health awareness as it could help you explore and expand your own potential and creativity.

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