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DESIGNING SURVIVAL ROGUE-LITE GAME "TAMON" BASED ON ANDROID

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ABSTRACT

"TAMON" is a survival rogue-lite game that combines the aspects of rogue-lite games, where the game can be replayed with progress carried over to subsequent rounds, and role-playing games, where monsters can be controlled and improved. The game is designed using Unity as the game engine and character models are sourced from the Unity asset store. The gameplay begins in a vast forest where the player controls a trainer character who can train monsters. The monsters controlled by the trainer are referred to as tamed monsters or TAMON. The trainer and TAMON must work together to fight against evil monsters called DEMON to survive for 15 minutes. "TAMON" is a 3D game that can be played on Android-based smartphones.

Keywords: TAMON, *survival rogue-lite*, *Unity Game Engine*, Android

1. INTRODUCTION

The gaming industry is one of the rapidly growing industries and increasingly competitive with the film and music industries. [1] The first game created in 1958, "Tennis for Two," had only hundreds of pixels for graphics and low complexity. Today, games use millions of polygons for just one character model with much more complex game complexity. For instance, "Returnal," a beautiful three-dimensional game with complicated procedural generated levels, was published in 2021. In addition to the ever-evolving fidelity and complexity of games, the genre in video games is becoming more complex by merging several genres into one game, where the difference in genre from each game makes the way players interact with the game different. [2] Genres in games are a way for players to adjust their expectations before playing the game. For example, survival genre games require players to search for food and equipment, while horror genre games make players solve problems while being chased by unknown entities. One of the popular new genres is the Rogue-lite survival genre.

The Survival Rogue-lite game is a game that challenges players to survive or win a round. Players can choose one of three monsters given, which will help the player win the round. The game is titled "TAMON," which stands for tammed monster. TAMON will have a 3D appearance. TAMON is a twin-stick shooter game that uses the smartphone screen to move the player, where the player must survive in an area full of evil monsters. At the beginning of the run, the player can choose the starter or initial choice of TAMON. Each TAMON has unique characteristics, such as a TAMON that can help the player efficiently kill monsters using fire or a

TAMON that provides protection through armor using earth elements. The chosen TAMON can evolve through experience points obtained from killing evil monsters, and TAMON's development can be in the form of increased damage, health, or unique modifiers. The TAMON game will end when the player can survive for 15 minutes, after which the game will display a portal that can be used to end the game. Example of a survival rogue-lite game that has been made is “Vampire Survivors” and can be seen in.

Referenced Game

"TAMON" was born through the interweaving of a complex tapestry of concepts, mechanics, and styles drawn from a multitude of renowned games. Among the notable wellsprings of inspiration lie Vampire Survivors, Tunic, Enter the Gungoen, and the insatiable quest for additional gold in Need More Gold.

Vampire Survivors is a minimalist Roguelite survival RPG game. It was developed and published by Poncle, and was released on October 20, 2022. One of the unique mechanics found in Vampire Survivors is the evolution of weapons and equipment, such as the fire wand and spinach, which evolve into hellfire.

Tunic is an action-adventure game developed by the TUNIC Team and published by Finji on March 17, 2022. It features a unique art style known as 3D low poly or low polygon. The utilization of low poly in the past was a limitation due to the computational power of computers at that time. However, in the present day, the use of low poly has become a means of optimizing computer processing power and serves as a nostalgic factor for players indulging in retro gaming.

Enter The Gungeon is a roguelike game that employs twin-stick shooter mechanics for movement. The game implements the twin-stick shooter mechanics, allowing players to control it either with a mouse and keyboard or a controller. When playing with a mouse and keyboard, the "W," "A," "S," and "D" keys, along with the cursor, are used for movement and aiming. Conversely, when using a controller, the joystick is utilized for these actions.

Need More Gold is a two-dimensional platformer rogue-like game that combines hack-and-slash mechanics with deck-building gameplay. The game was conceptualized by Harley Leo Liman, from Computer Science program at the Faculty of Information Technology of Universitas Tarumanagara. It presents an exploration-focused experience, where players venture into dungeons, conquer various monsters, and uncover hidden treasures that can be seen in Figure 1.

Figure 1. Gameplay Need More Gold

Sumber : Harley L. L., Pragantha J,. & Haris, D. A. (2022). "Pembuatan Game Hack-and-Slash dengan Deck Building 2D "Need More Gold"." Jurnal Ilmu Komputer Dan Sistem informasi, 10(1), 1.

"TAMON" is a game that weaves together a rich tapestry of ideas, mechanics, and styles borrowed from several distinguished games. Influenced by Vampire Survivors, Tunic, Enter the Gungeon, and the quest for more gold in Need More Gold, "Tamon" brings together the minimalist Roguelite survival RPG mechanics of Vampire Survivors, the unique low poly art style reminiscent of Tunic, the twin-stick shooter movement mechanics from Enter the Gungeon, and the hack-and-slash deck-building gameplay found in Need More Gold. This amalgamation creates a captivating gaming experience that draws upon the strengths and inspirations of these referenced games.

2. RESEARCH METHOD

In the design of a game, a design method is required that can be used as guidance in the process of creating a well-executed game.[3] However, there is no definitve template to be followed in game development.[4] Several aspect still need to be considered in game design, which are as follows :

1. High Concept
   High Concept, a crucial element in game development, is a concise description that encapsulates the core idea of the game. It guides the game development process to ensure alignment with the initial design. For our game "TAMON", the High Concept is as follows:
   1. Game Title : TAMON
   2. Genre : Survival Rogue-lite
   3. Language : English
   4. Target Players : Age 13 and above
   5. Number of Player : Singleplayer
   6. Visuals : Three dimensional
   7. Game Engine : Unity
   8. Programming Languange : C#
   9. Platform : Android 10
   10. Controls : Touchscreen
2. Gameplay
   Gameplay, the cornerstone of any game design, refers to how players interact with the game, encompassing its features and the rules of play. A carefully designed gameplay ensures a seamless progression and a rewarding player experience, as exemplified in the survival rogue-lite game "TAMON". In "TAMON", players step into the role of a trainer, aided by an assistant known as TAMON. Prior to each round, players select one of three available TAMONs. Once the round kicks off, they must evade the pursuing antagonist, DEMON, and survive in a forest for 15 minutes with their chosen TAMON's assistance. As players defeat DEMON and gather experience points, their TAMON gains the ability to improve movement efficiency and learn new skills. TAMON's attacks are designed to automatically respond to the player's movements. After successfully surviving for 15 minutes, a portal appears as a cue for the end of the round. Players can approach this portal to return to the main menu, thereby concluding a typical round of "TAMON". This rich and layered gameplay is a testament to the attention to detail in game design.
   a. Control Design
      Control design in a game refers to the devices and methods employed to manipulate elements within the virtual environment. This concept is vividly demonstrated in the game "TAMON". "TAMON" uses twin-stick shooter controls through virtual joysticks on the Android touchscreen in a landscape orientation. This mechanism serves as the primary means of movement for both the trainer and TAMON. The control scheme of the virtual joystick is divided into two sections: the left virtual joystick is responsible for controlling the trainer, while the right one manipulates TAMON. A detailed view of the control interface for "TAMON", as well as the specific functions of each control in the interface, can be observed in Figure 2 and Table 1 respectively.

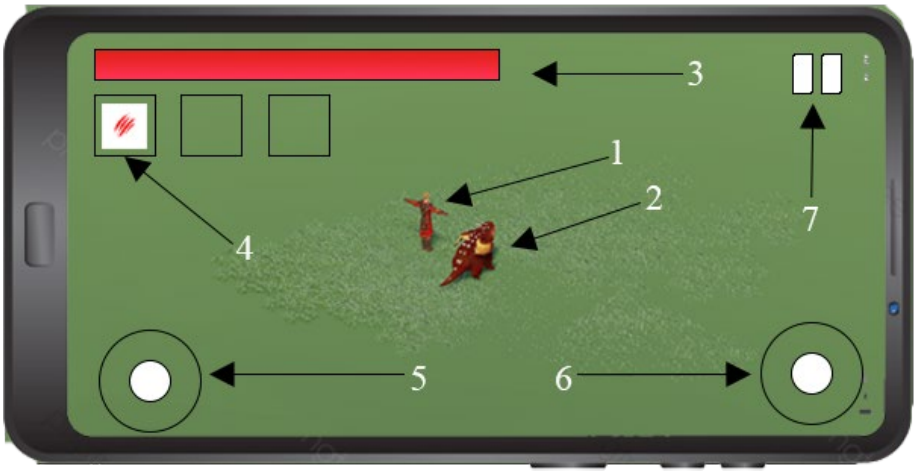

Figure 2. User Interface of TAMON

Table 1. Explanation of User Interface of TAMON

No	Explanation
1	Trainer : The character controlled by player
2	TAMON : The assistant character accompanying the trainer
3	Health bar : Displays the remaining Hit Points (HP) of trainer
4	Container : Displays icon representing the selected movements
5	Virtual Joystick for Trainer
6	Virtual Joystick for TAMON
7	Pause Button : Pauses the game

b. Character Design

Character design in game development involves defining both playable and non-playable characters within the game's universe. This principle is well applied in "TAMON", where character design is segmented into three distinct types: the trainer, TAMON, and the enemy. The character design details of each type are as follows:

i. Trainer

The trainer character is the playable character controlled by the player. The design of the trainer incorporates unique features, such as distinctive clothing, accessories, and animations that represent their role in the game. The trainer's appearance and visual characteristics are crafted to make them visually appealing and relatable to the player. The appereance for trainer can be seen in Figure 3.

Figure 3. Trainer's appearance
Source : Polytope Studio, Lowpoly Modular Armors – Free Pack,
https://assetstore.unity.com/packages/3d/characters/lowpoly-modular-armors-free-pack-199890

ii. TAMON

TAMON characters are the companions or helpers of the trainer within the game. They have their own distinct design, including various shapes, colors, and visual attributes that differentiate them from the trainer and the enemy. TAMON characters are designed to be visually appealing and to exhibit characteristics that align with their specific abilities and role in assisting the trainer. There are 3 TAMON in the game that can be seen in Figure 4

Figure 4. Tamon's appearance
Source : Dungeon Mason, Dragon for Boss Monster : HP,
https://assetstore.unity.com/packages/3d/characters/creatures/dragon-for-boss-monster-hp-79398

iii. Enemy

The enemies in "TAMON," known as DEMON, are the adversaries that the player and TAMON must confront. The design of the DEMON characters involves incorporating visually distinct appearances, drawing inspiration from TAMON but

with a purple color scheme. The DEMON enemies are created using unique shapes, colors, and visual effects to ensure they are easily recognizable and distinguishable from other characters in the game. The size, shape, and visual characteristics of the DEMON enemies may vary, adding diversity and presenting challenges throughout the gameplay experience. DEMON appearance can be seen in Figure 5.

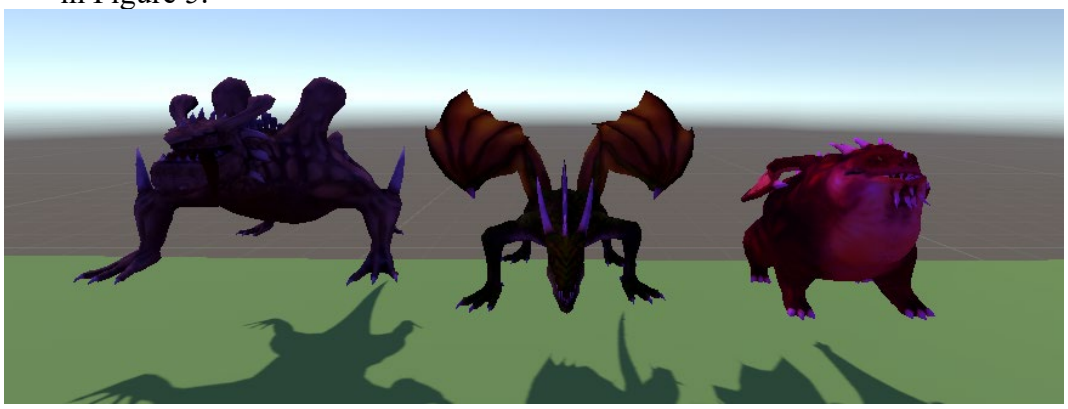

Figure 5. Tamon's appearance
Source : Dungeon Mason, Dragon for Boss Monster : HP, https://assetstore.unity.com/packages/3d/characters/creatures/dragon-for-boss-monster-hp-79398

c. Object Design
Object design in game development refers to the detailed description of the objects present within the game, encompassing their function and purpose. This aspect of design is vividly exemplified in "TAMON". Within "TAMON", numerous objects are available for interaction by the trainer as they navigate through the game. Each of these objects possesses unique effects that can aid the player in their quest for survival. The object include :
   i. Coins : Coins serve as the in-game currency and can be collected by the trainer. They can be used to purchase upgrades.
   ii. Potion : Potions provide a health boost to the trainer, replenishing their hit points (HP) and aiding in their survival.
   iii. Sheild : Shields offer temporary protection to the trainer, reducing the damage taken from enemy attacks.
   iv. Experience Point : Experience points contribute to the trainer's progression and leveling up, enabling them to unlock new abilities and improve their attributes.
   v. Rock : Rocks can be utilized as defensive projectiles or obstacles to hinder enemy movement.
   vi. Chest : Chests contain valuable rewards, such as coins, potions, or upgrades, and can be opened by the trainer to obtain these items.
   vii. Portal : Portals serve as gateways that allow the trainer to end the round or progress to the next level upon reaching them.

d. Sound Design
Sound design involves the incorporation of sounds within the game, including background sounds and sound effects.

e. Stage Design
Stage design encompasses the layout and design of the environment that players will traverse in the game.

3. Story
   The story within a game provides a summary of the narrative progression, giving context and purpose to the player's actions. In "TAMON", this narrative takes shape as follows: The player steps into the shoes of a trainer, a young man freshly awarded his official title to train TAMON, or tamed monsters. Unexpectedly, the trainer's town is attacked by unfamiliar TAMONs, tainted with a purple substance and hostile towards the townsfolk. These aggressive creatures are known as DEMON, or devil monsters. To escape the onslaught, the trainer is forced to flee into a nearby forest, only to find the relentless DEMONs in pursuit. This sets the stage for the game's key challenge - with a recently acquired TAMON as his sole ally, the trainer must fight to survive against the relentless DEMONs in a forest teeming with danger.
4. Audiance
   The audience or target users for a game refers to the specific demographic for whom the game is designed, factoring in aspects like age group, gender, location, and lifestyle preferences. The game "TAMON" specifically targets players aged 7 and above, as its content involves mild violence but does not contain any elements of gambling, thereby eliminating the need for parental guidance. It has received an IGRS rating of 7+, which signifies adherence to guidelines that include no depictions of addictive substances, violence, coarse language, adult humor, explicit nudity, or sexual content. The game also refrains from portraying gambling simulations and horror elements designed to induce fear or terror. Furthermore, "TAMON" doesn't offer network interaction facilities such as chat, multiplayer features, or data exchange. These guidelines ensure that "TAMON" provides a safe and suitable gaming experience for its intended audience of players aged 7 and above, by maintaining a content environment that aligns with their age group and preferences.
5. Hardware and Software
   Hardware and software entail an explanation of the minimum specifications required for the smooth operation of the designed game.
6. Visual Design
   Visual design constitutes the main visual representation for players , manifested through the user interface (UI) and visual aspects of the designed game.

"TAMON" integrates various elements from design method. These components contribute to the creation of an engaging and immersive game experience. Careful consideration is given to control design, character design, object design, sound design, and stage design to ensure smooth progression and interaction within the game. Targeting specific demographics, the game incorporates suitable hardware and software specifications. Visual design elements, including the user interface, enhance the overall aesthetic appeal. Thorough testing, including alpha and beta phases, ensures quality and incorporates player feedback. "Tamon" aims to deliver an engaging and enjoyable gaming experience.

Survival Rogue-lite Genre

Rogue-lite is a subgenre of video games characterized by procedurally generated levels, permadeath, and a focus on challenging gameplay. These games typically feature randomly generated levels that change with each playthrough, making it difficult for players to rely on memorization or repetition. Permadeath means that if the player's character dies, they have to start the game from the beginning. Rogue-lite games also feature various challenging enemies, obstacles, and traps, forcing players to strategize and adapt to new situations. However, they do

offer some form of persistent progression, often in the form of unlockable characters, items, or abilities that can be carried over to the next playthrough.

"TAMON" is a game that belongs to the subgenre of rogue-lite, specifically survival rogue-lite, combining the elements of survival gameplay, where players must survive against evil monsters, and the rogue-lite concept of permadeath. After a permadeath, the levels or progress previously attained are lost, and the lost levels and progress can be regained through experience points earned.

Software Used

During the game development process, a set of essential software tools will be utilized to execute diverse tasks, including game design, scripting, 3D modeling, and graphical asset creation. These tools are widely acclaimed within the industry for their extensive array of features, encompassing multiple aspects of game development:

1. Unity
   Unity is a widely recognized and versatile game engine that enables the creation of 2D and 3D games. It provides a comprehensive range of features for game design, physics simulation, scripting, and cross-platform deployment.
2. Visual Studio
   Visual Studio is a powerful integrated development environment (IDE) that supports multiple programming languages, including C# which is commonly used for game development. It offers advanced coding tools, debugging capabilities, and project management features.
3. Blender
   Blender is a popular open-source 3D modeling and animation software. It provides a robust set of tools for creating and manipulating 3D objects, textures, animations, and visual effects. It is commonly used for character modeling, environment creation, and asset design.
4. Photoshop
   Photoshop is a well-known raster graphics editor widely used in the game development industry. It offers a wide range of tools and features for image editing, texture creation, and graphic design. It enables artists and designers to create and enhance visual assets such as textures, sprites, and user interface elements.

3. RESULTS AND DISCUSSIONS

"TAMON" is a single-player game presented in three-dimensional visuals and falls under the survival rogue-lite genre. TAMON can be played on the Android operating system, requiring a minimum version of Android 10. The objective for players is to survive in the world of TAMON, which is overrun by DEMON, by choosing one of the three available TAMON characters and earning money until the round concludes. This money can be used to enhance player attributes such as health, running speed, or increase the amount of money and experience gained. The round ends when the player successfully or unsuccessfully survives for 15 minutes, after which a portal appears that can be used to conclude the round.

Module Design

The game "TAMON" consists of several modules in its design, including the main menu, help, upgrade, option, gameplay, and pause. Here is an explanation of each module:

1. Main Menu
   This module is the first screen that appears when the player starts the game. It displays the game logo and buttons to access other modules such as upgrade, help, option, and quit. Selecting the quit option will exit the game. Main menu module can be seein in Figure 6

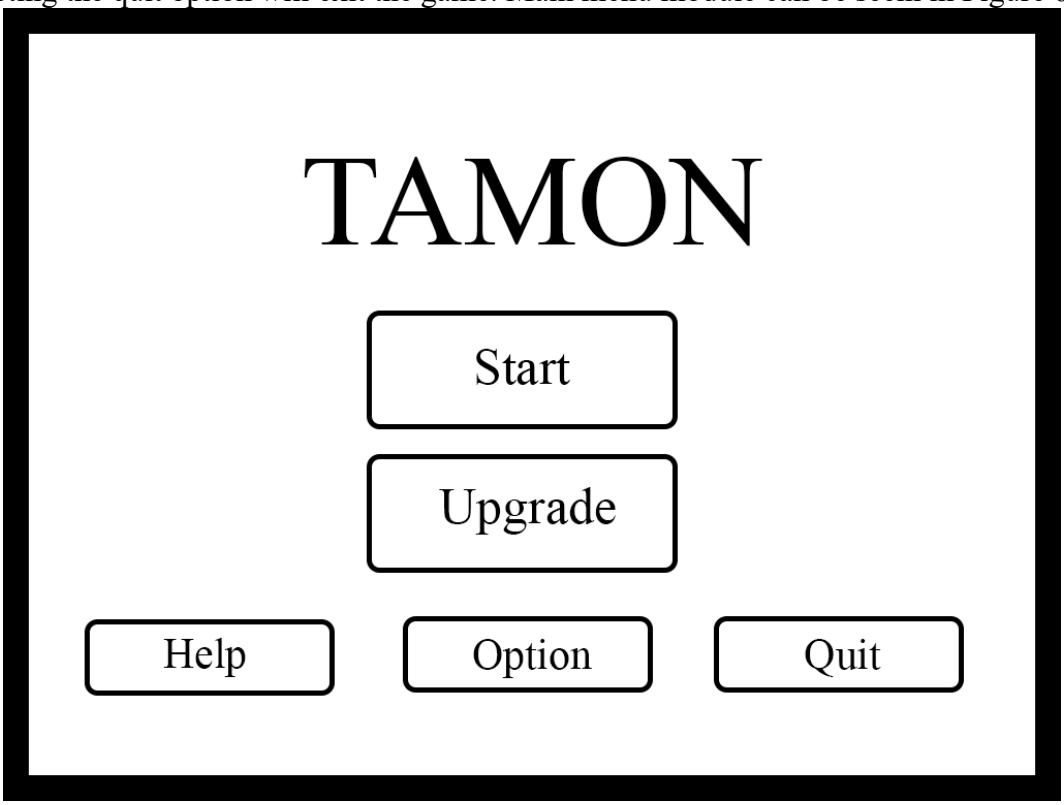

Figure 6. Main Menu Module

2. Help
   This module provides information on how to play "TAMON" and includes credits for the game developers. It can be accessed through the main menu. Players can navigate through the information using a slider and return to the main menu by pressing the back button. Help module can be seen in Figure 7.

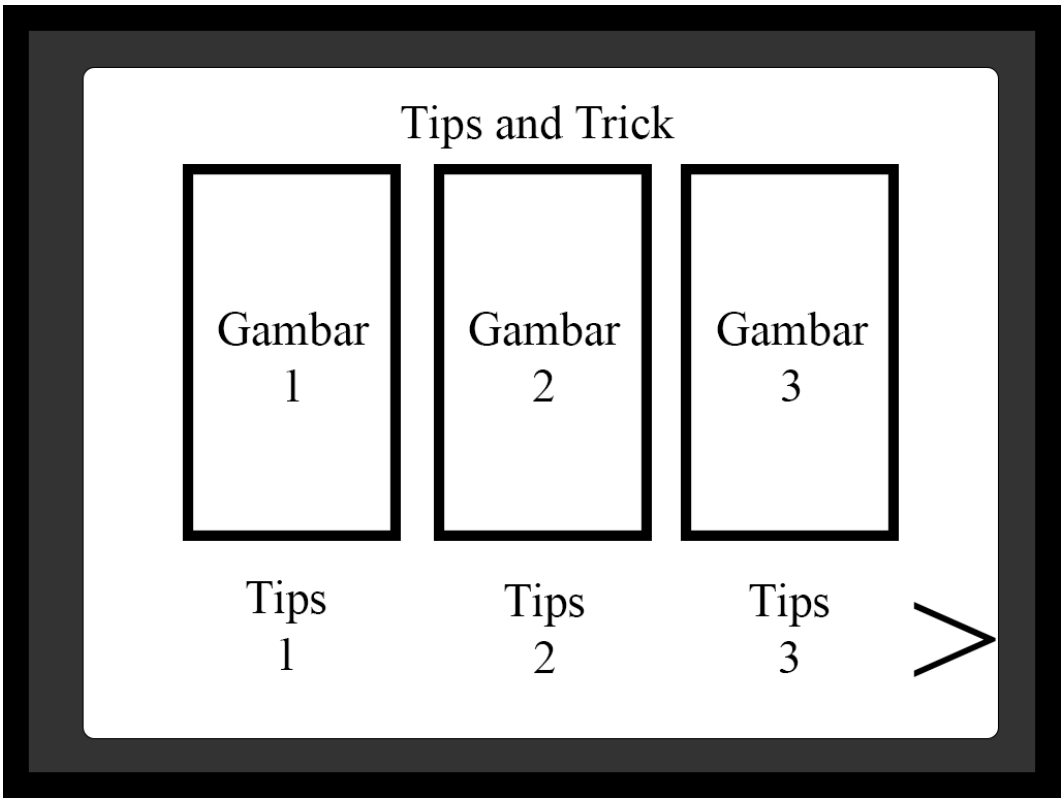

Figure 7. Help Module

3. Upgrade

This module, accessible from the main menu, allows players to enhance the trainer's attributes. Players can select which attributes to upgrade and press the upgrade button to increase them. The upgraded attributes are indicated by boxes below them, and the cost in coins is displayed next to the upgrade button. Upgrade module can be seen in Figure 8.

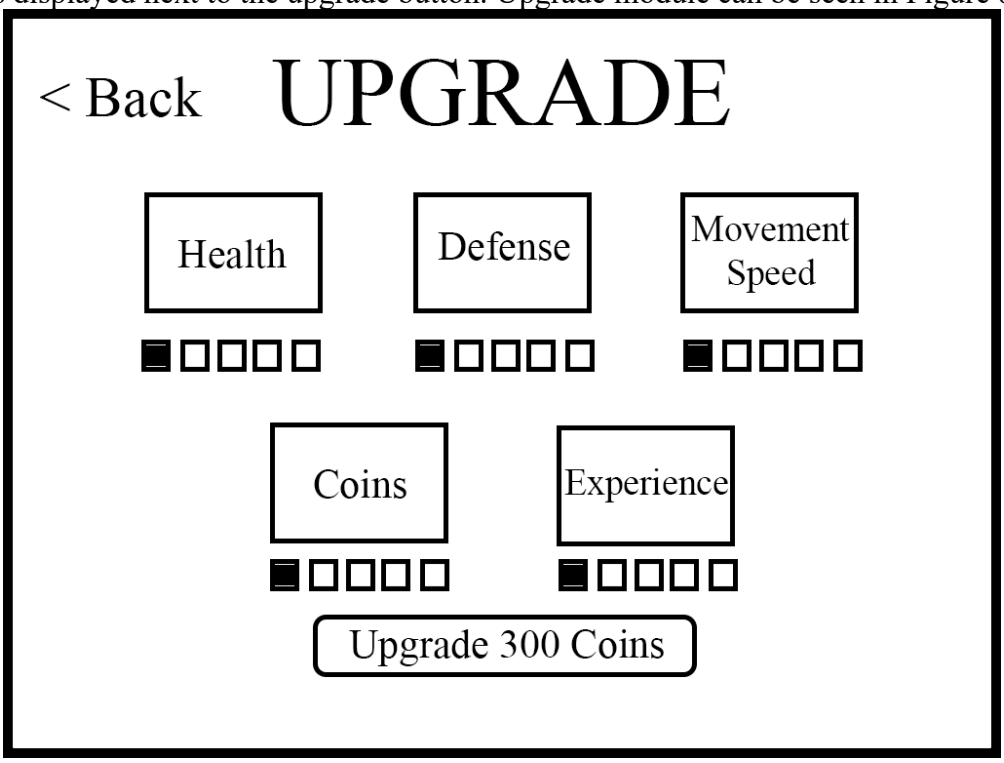

Figure 8. Upgrade Module

4. Option
   Accessed from the main menu, the option module enables players to modify settings within "TAMON." It consists of two categories: graphics and audio. The graphics category allows players to adjust resolution and effects using sliders, while the audio category allows volume adjustments. Changes can be applied by pressing the apply button, and players can return to the main menu using the back button.
5. Start
   This module, accessible from the main menu, allows players to begin the game. Players can choose a TAMON character in the start module. Pressing the start button initiates the gameplay.
6. Gameplay
   The gameplay module starts once the player has selected a TAMON character in the start module. It represents the actual gameplay of "TAMON." The module displays a health bar and the selected TAMON's movement icons below it. Players can pause the game using the pause button. Gamplay module can be seen in Figure 9.

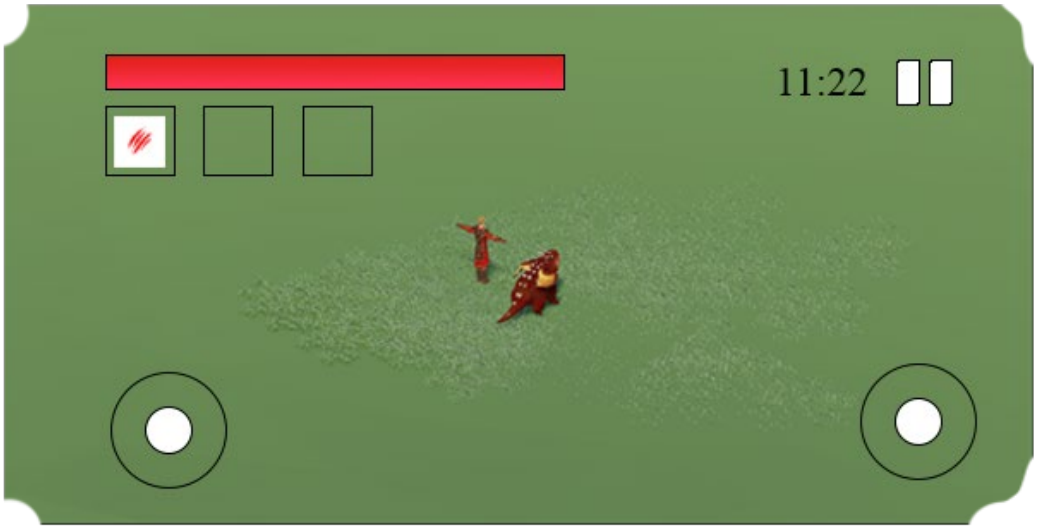

Figure 9. Gameplay Module

7. Pause
   The pause module can be accessed during gameplay. It allows players to temporarily pause the game. Players can resume the game by pressing the continue button or return to the main menu using the quit button.

These modules collectively form the user interface of "TAMON," offering various options, assistance, and gameplay elements for an engaging gaming experience.

4. CONCLUSIONS AND SUGGESTIONS

"TAMON" is a survival rogue-lite game that offers a unique and captivating gaming experience, blending various genres and mechanics into a cohesive gameplay experience. With its immersive visuals, intuitive controls, and well-designed modules, "TAMON" aims to provide players with

an enjoyable and challenging adventure in a world filled with evil monsters and the quest for survival.

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