

DESIGNING ESCAPE FROM THEM 2D PLATFORMER SURVIVAL GAME FOR WINDOWS

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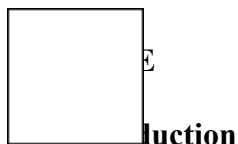
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Submitted: 26-09-2023, Revised: 27-10-2023, Accepted: 08-12-2023

ABSTRACT

"Escape From Them" is a two-dimensional platformer survival adventure game that developed for Windows. The game developed using Unity Engine, which famous for developing computer games. In the game "Escape from Them" player will face some enemies and survive through that for winning the game. The game also has item to interact that each item has spesial effect for player. To increase experience for player, game has 5 different levels and each level has different difficulty, which last level is boss level. The processes described in Bob Bates' "Game Design Second Edition 2004" as the basis of the design of the game "Escape from Them" and giving a stable structure for game development will be used in the developing process of this game. The game designed for 8 years or above, which for those group of age already has basic of operating the computer. The goal of "Escape from Them" is to survive along the journey, vanquishing the formidable boss to achieve victory.

Keywords: Escape from Them, Single Player, 2D, Windows, Platformer



Platform games have played an important role in gaming culture. Platform game characters such as Mario and Sonic are among the most recognizable in gaming. Platformers have also played an important role in the growth of video games, even assisting gaming consoles to thrive.

This thesis covers the fundamentals of platform games, their history, and how to create a platform game with basic features like double jump and shifting platforms. I also present my personal project, which facilitates some of the methodologies and ideas mentioned in the thesis' theory section [1].

2D games are classified into two types: top-down camera approaches and 2D front of the scene camera approaches. The camera is set in the ceiling position in the top-down camera technique so that the player can manipulate the visuals from all four directions, namely north, south, east, and west. The player receives a 360-degree perspective of the entire level. The camera is placed in front of the scene in 2D front of the scene camera technique. A scene is the arrangement of all

game elements to form a scenario. In this method, the player only sees the portion of the screen that the camera can catch at any given time [2].

“Escape from Them” is 2D platformer game with Survival Adventure genre, that can be played on Windows. The game itself is made for single player only.

Game References

“Escape from Them” was drafted by merge ideas, concepts, and mechanics from several notable games. These are some of the sources of inspirations are Super Mario and Limbo. The Picture of game “Limbo” can be found on Picture 1



Figure 1 Limbo (Salim, 2013)

2. RESEARCH METHOD

A design technique is required before generating a game as a reference in the game development process and to identify the scope of the game. Because designing a game necessitates the use of a template as a basis, this study employs the principles [3], which provides a solid structure for game production.

Design Methodology

“Escape from Them” implements the game design principles from Bob Bates "Game Design Second Edition 2004". The design methodology encompasses:

High Concept

The game is geared towards the platformer survival adventure genre, encouraging players to live and escape. The following are important game design details:

1. Name of the Game : Escape from Them
2. Game Category : Platformer, Survival, Adventure
3. Language of the Game : English
4. Intended Players : Those aged 8 and above
5. Player : Single Player
6. Visuals : 2D
7. Game Development Tool : Unity Engine
8. Coding Language : C#
9. Game Controls : Keyboard
10. Supported Platform : Windows 10 or later

Gameplay

“Escape from Them” is 2D platformer survival adventure genre, designed to be simple to play and give player experience of being chased by enemies and exploring the map. Player will use a keyboard as control for the game. In the game "Escape from Them", players will face a variety of enemies that can be defeated by using gun that given in the start of the game and gain score from defeating the enemy, player also need to avoid some obstacle. Besides from fight the enemies, player need open some door using item by just collecting them, and other object item that have function for the gameplay itself, for example “Heart” item for add extra life, etc. .

Storyline

“Escape from Them” tells a story of a man wake up in some underground secret laboratory that nobody should know about, after waking up some monster notice him and run away from him, he need to run away from that lab. Along his journey, he needs to avoid obstacle and facing monster who get in the way from his escape.

Audience

Target audience in this game is anyone over the age of 8 who understand basic of computers. The game itself is easy to play for group of this age. Player who are 8 years old can still play the game but parents or guardian needs to supervise the player itself.

Software Utilized for Development

A number of essential software tools will be utilized to accomplish multiple tasks during the game's development, including game design, scripting, 2D and 3D modeling, and graphical asset generation. Each of these tools is well-known in the industry for its diverse set of features and capabilities, which span a wide variety of aspects of game development:

1. Unity is the main platform is used for the developing the game, Unity has various features for creating 2D content.

2. Visual Studio Code is a code editor that used for scripting code and debugging, it makes development more efficient.
3. Adobe Photoshop is tool for creating 2D graphic design which will be used into the game.

Display Design

The "Let Me Survive" game has a variety of display designs, including:

1. Main Menu: Main Menu is the first display when the program is run, displaying the title and button for Play, About, and Exit,
2. Play: Display when the game is running.
3. About : Display showing developer, supervising instructor, also Tarumanagara University, and Game Development logo.
4. Pause: Display when the game is temporarily stop
5. Exit: Display is for exit or quit the game.

3. RESULT AND DISCUSSION

"Escape from Them" is a one-of-a-kind combination of platformer, survival and adventure genres developed for Single player. The game " Escape from Them " has five levels, last level contain boss levels. The player's character is shown in 2D visuals. The game is intended to be played on the Windows platform, and " Escape from Them " controls are performed with a keyboard.

Control Design

"Let Me Survive" uses a simple design for its control mechanism, using a keyboard for various modules inside the game. Table 1 lists the functions of each key. The mobility system in the game is controlled by a combination of keys.

Table 1 Layout of Keyboard Control

Key	Operate
W	Move Up / Jump / Navigate Menu
A	Move Left / Navigate Menu
D	Move Right / Navigate Menu
Enter	Select
Space	Attack
Arrow Up	Move Up / Jump / Navigate Menu
Arrow Left	Move Left / Navigate Menu
Arrow Right	Move Right / Navigate Menu

ESC	Pause / Back
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Character Design

1. Main Character

Kudo is the playable main characters of the game "Escape from Them". Kudo has Ability to shoot gun, move, and jump. From the start of the game, Kudo is Given 2 lives with 50 health points (HP) each and Kudo has 5 damage each gun shot. If Kudo got hit by enemy or hit by obstacle, his HP reduces based on predetermined damage before. Once Kudo lost all his lives, the game will end. Kudo design is attached in Figure 2.



Figure 2 Main Character “Kudo”

2. Enemy

Enemy Characters can attack the main character. In the game, there are four enemies: Rounding, Pink Bat, Ghost, Angry Box. Enemy can endanger main character by attacking the main character and reduces main character's HP. Enemy design is attached in Figure 3, and detail about enemies is attached in Table 2.



Figure 3 Enemy Character

Table 2 Enemy Character Detail

Enemy	Health Point	Damage	Score
Rounding	25	5	15
Pink Bat	15	5	20
Ghost	20	15	25
Angry Box	30	30	25

3. Boss

Boss is the last enemy that appear in last level. The boss in the game called “Professor“, and have high damage that can endanger main character faster than regular enemy. Professor has 2 regular attack and 1 special attack, besides that boss has 100 HP. If Boss defeated, player will achieve 200 points. Boss design is attached in Figure 4, and detail about boss attack is attached in Table 4.



Figure 4 Boss Character

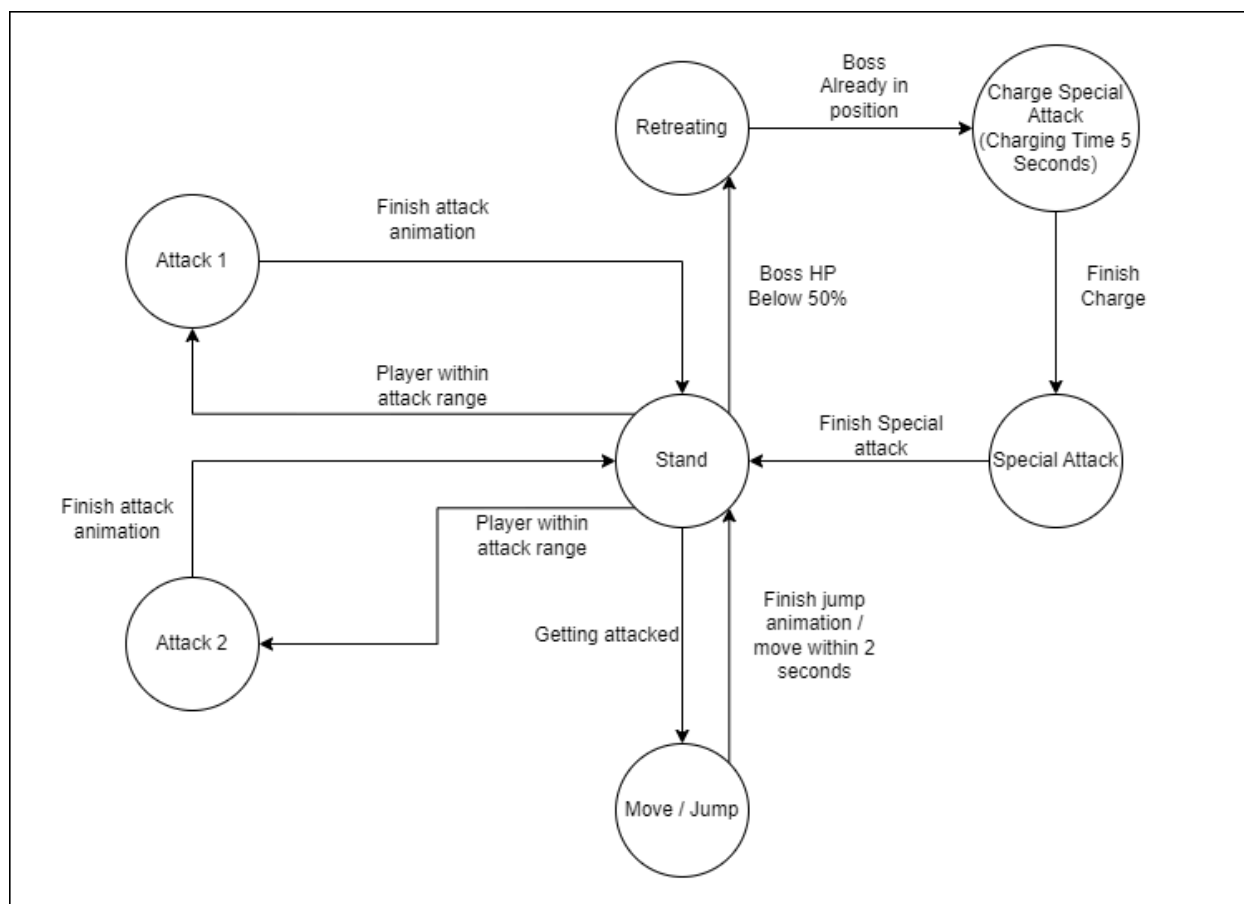


Figure 5 Finite State Machine Boss Character

Table 3 Boss Character Attack Detail


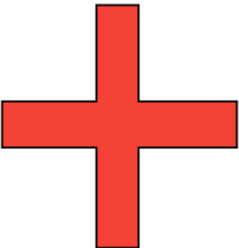



Attack	Name	Description	Damage
Attack 1	Bottle Bump	Hit player with bottle	5
Attack 2	Bottle Throw	Throw bottle to player	20
Special Attack	Chemical	Mixing 2 bottle chemical	50

Object Design

Object in the game “Escape from Them” called items are stuff that can be collected by the main character. Each items have its own function. Besides items, “Escape from Them” also has obstacle that can damage player. Item and obstacle design and detail is attached in Table 5.

Table 4 Object Design Detail

Name	Icon	Description	Point	Damage
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Heart		Restore player lives	1 lives	-
Medic		Restore player HP	50 HP	-
Spikes		Obstacle can damage player	-	10
Saw		Obstacle can damage player	-	30
Key		Item for open the door	-	-

Level Design

Levels indicates number of stages, where each stage has a different difficulty and the more difficult it is. “Escape from Them” has five floors (levels), with the last floor is the boss itself. Example of level design is attached in Figure 5 & 6.

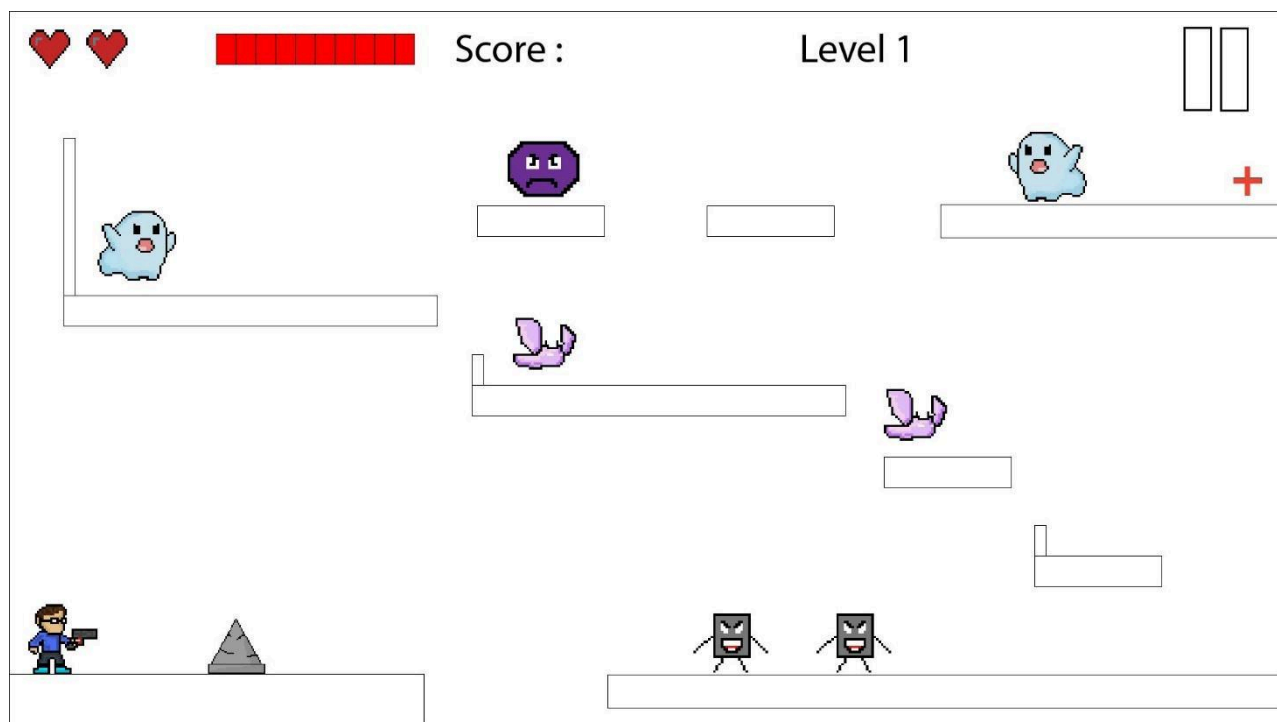


Figure 6 Level 1 Design (1)

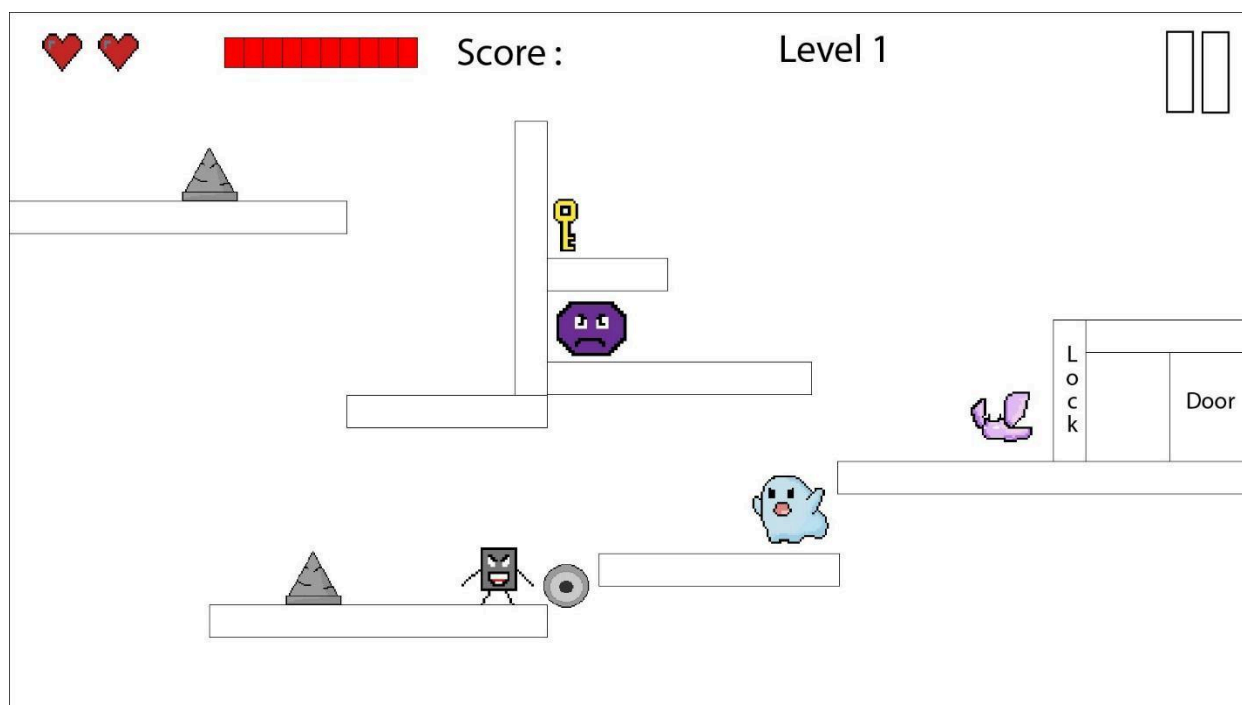


Figure 7 Level 1 Design (2)

Sound Design

“Escape from Them” has two background music and several sound effect that increase player experience. The first background music is main menu music, that plays when main menu is shown and player navigating main menu. Second background music is gameplay background music, it

<https://doi.org/10.24912/ijaste.v1.i4.1413-1424>

play from the start of the gameplay. Besides that, several sound effect added, such as gun shoot, walk, player jump, etc.

Module Design

“Escape from Them”, adopts a two-dimensional display design. Module design specifications for “Escape from Them” are :

1. Main Menu

Main menu is the first module will shown after running the game. Main menu design is attached in Figure 8.

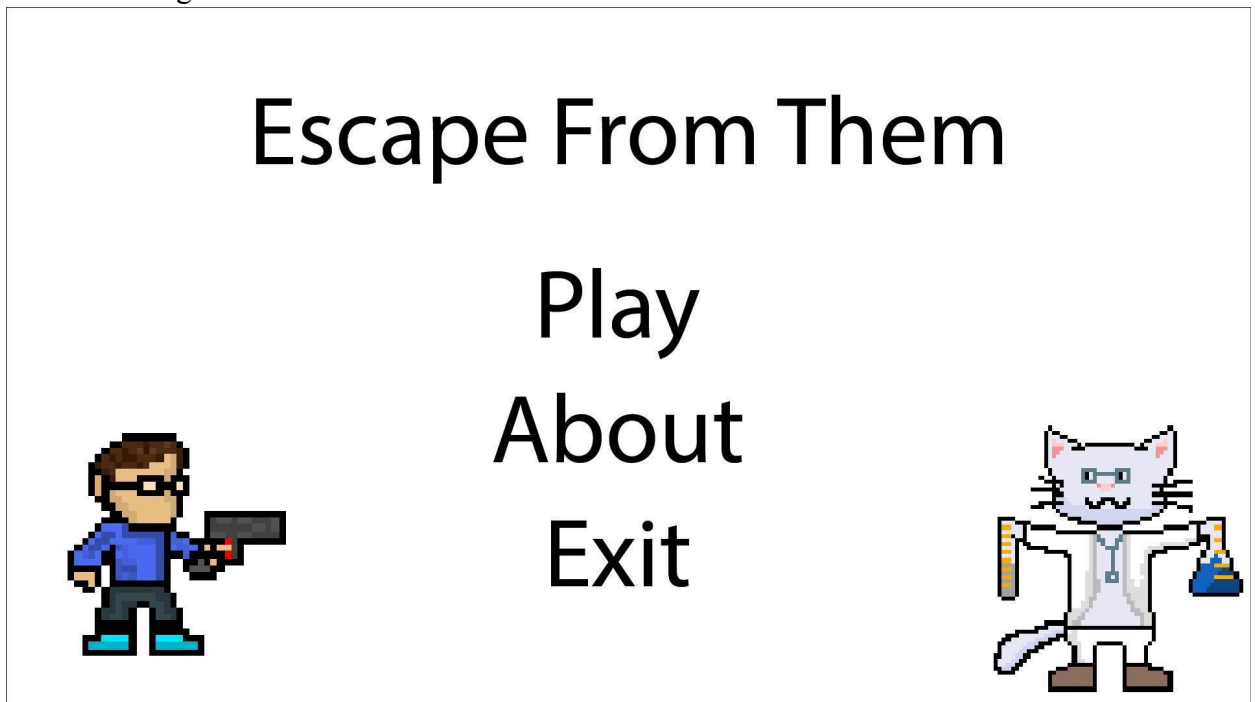


Figure 8 Main Menu Module Design

2. About

About is shown details of the creator and supervising instructors. Besides that there is also Tarumanagara University and “Game Development Untar” logo.

3. Gameplay

In gameplay module, player may able to see lives, HP, current level, and pause button. Gameplay display design is attached in Figure 9.

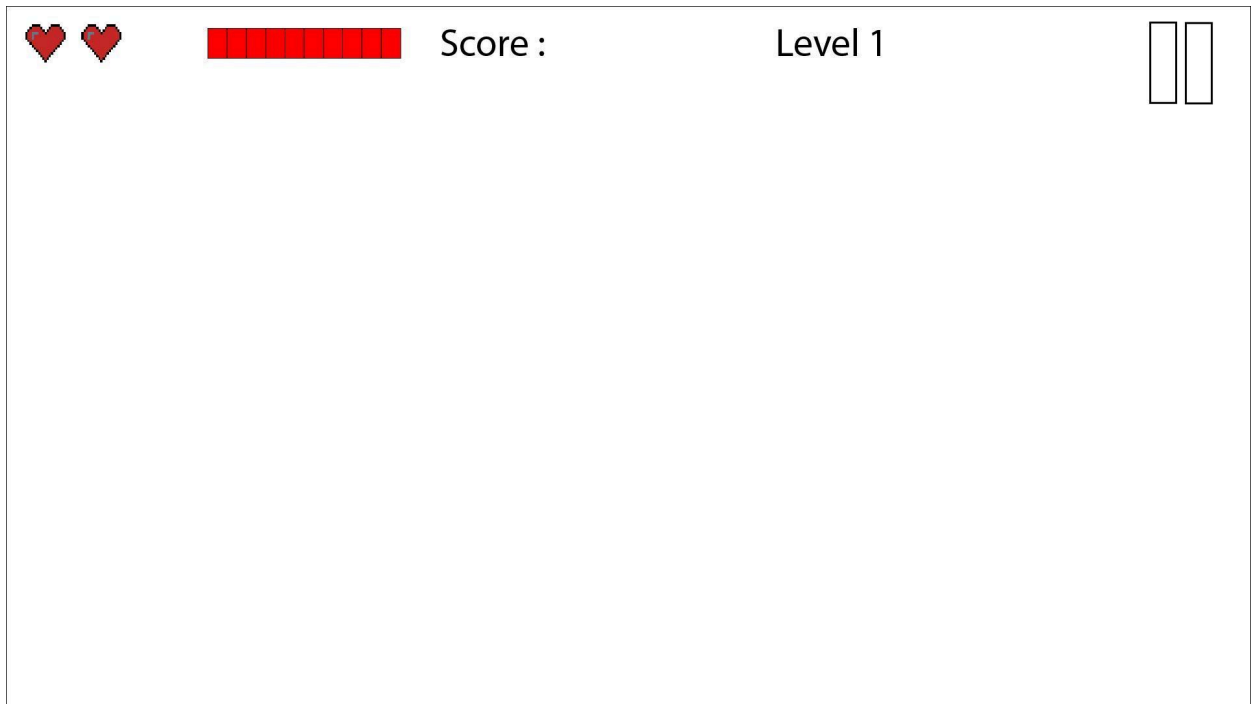


Figure 9 Gameplay Module Design

4. Pause

This module will stop the game temporarily until player resume the game. pause also has button for player back to main menu or player want to exit the game. Pause design is attached in Figure 10.

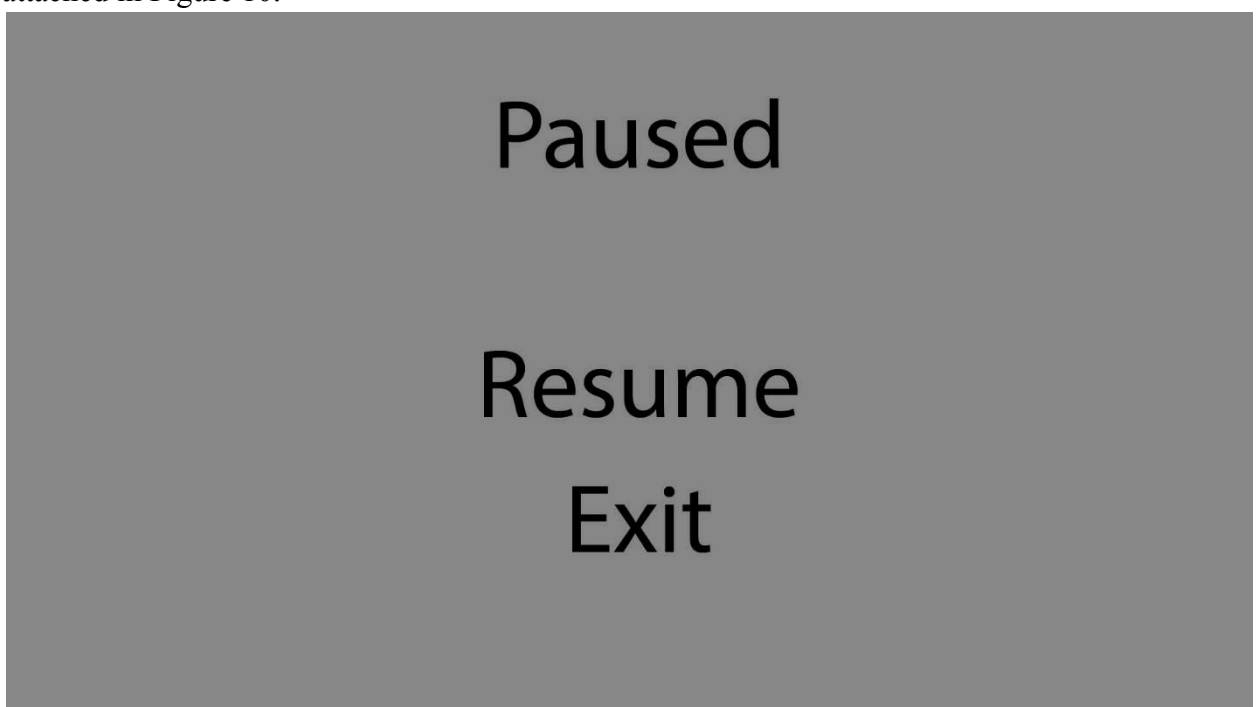


Figure 10 Pause Module Design

5. Exit

Exit appear in main menu and pause module. After pressing exit button, player will get pop up display for confirm that player really want to exit the game.

4. CONCLUSIONS AND RECOMMENDATIONS

"Escape from Them" is a Windows-only two-dimensional platformer survival adventure game. Player in the game "Escape from Them" will fight opponents and must survive in order to win. The game also includes items with which the player can interact, each of which has a unique effect. The game contains five different levels, each with a different level of difficulty, with the last level being the boss level.

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