

# Woe. – A view into the life of an autistic child.

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through the level system, enhancing the aesthetic of the game

**Abstract**— Woe is a 2.5D puzzle-platformer adventure video game founded upon the five stages of grief by Kübler Ross. The Kübler Ross model for grief focuses on five stages that a person will move through while dealing with grief. Woe focuses on the protagonist; the player character, an autistic child, dealing with the death of his father. The boy is overcome by his grief for the loss of his father and indifference from his mother. He deals with his problems through his overactive imagination, creating a fantasy world in which he projects his fears and his frustrations. Autism is a developmental disorder characterized by troubles with social interaction and communication, and by restricted and repetitive behavior. Autistic children are known to have an exuberant imagination which can blur the child's view of reality. Woe depicts an autistic child's attempt to deal with a shock event in his life.

**Keywords**—game, adventure, grief, autism, puzzle, platformer

## I. INTRODUCTION

The problem we decided to tackle was providing an enticing and socially relevant video game to help mentally disabled children. We decided to cater to autistic children, and their hyperactive imagination. The game will be founded upon the five stages of grief by Kübler Ross. We decided to name our game Woe, as a reference to the word grief. The game will consist of a campaign mode and a safe zone option which will allow the children to advance within the game as well as improve their skills in the real world.

Woe focuses on the protagonist; the player character, an autistic child, dealing with the death of his father. The boy is overcome by his grief for the loss of his father and indifference from his mother. He deals with his problems through his overactive imagination, creating a fantasy world in which he projects his fears and his frustrations. Autism is a developmental disorder characterized by troubles with social interaction and communication, and by restricted and repetitive behavior. Autistic children are known to have an exuberant imagination which can blur the child's view of reality. Woe depicts an autistic child's attempt to deal with a shock event in his life.

The player guides an unnamed boy through dangerous environments and traps as he comes to terms with his loss. The player controls the boy, who walks, runs, swims, climbs, and uses objects to overcome obstacles and progress in the game. If the character wakes up, the game shifts to the safe zone. The game is presented in black-and-white tones, slowly adding color with each level progression. The dark aesthetic of the game adds a film noir aspect to the game. The game works through Kübler Ross's five stages of grief



Fig 1.1: The Kübler Ross model of grief.

## II. RELATED WORK

There are many applications that cater to autistic children but none provide the importance of entertainment as well as the autism support that Woe offers. Application which use the concept of grief as their main theme are also very popular. The unique blend of pure gaming experience and support for autistic children can only be found in Woe.

Some of the many games which use the concept of grief as a central plot line are:

### ➤ The Binding of Isaac.

The Binding of Isaac is an indie rogue like video game which follows a child progressing through procedurally generated dungeons defeating monsters in real-time combat.

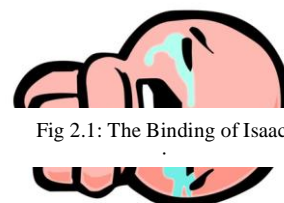


Fig 2.1: The Binding of Isaac.

### ➤ Limbo.

Limbo is a puzzle-platform video game where the player guides an unnamed boy through dangerous environments and traps as he searches for an answer.



Fig 2.2: Limbo.

#### ➤ **Inside.**

Inside is a puzzle-platformer adventure game where the player controls a boy in a dystopic world, solving environmental puzzles and avoiding death.



Fig 2.3: INSIDE.

Applications which provide autism support through learning activity and games include:

#### ➤ **Learn with Rufus.**

It is a set of 5 apps with learning activity and games that help children learn the facial expressions and emotions, numbers, facial features that correspond to boys and girls, and categories such as colors, shapes, fruits, and other common objects.

#### ➤ **Autism iHelp – Play**

Autism iHelp is a vocabulary teaching aid developed by parents of a child with Autism and a speech-language pathologist.

As of now there are a limited number of games for children with autism. The existing games are very bland and do not provide the child with any tangible entertainment. Existing games relating to grief take a darker approach in term of animation and audio. Autistic children are also susceptible to addiction due to their condition and as such, we hope to provide a children friendly environment with a suitable atmosphere for the theme. Woe will supply the children with tasks which relate to their daily lives in order to develop their social skills and other aspects of their physical and mental health.

### III. SYSTEM STUDY

The proposed system will ensure that the entertainment factor of the game as well as the social aspect of autism support will be combined seamlessly to provide an

aesthetically pleasing final product. Woe will be implemented using Unity as the game engine and deployed using Android Play Store as well as Steam.

Woe will feature both a campaign mode and also a safe zone which will compartmentalize the entertainment and the autism support respectively. Woe will feature five levels for each of the five stages, with each stage aesthetically designed to reflect the current stage. The lighting, colour, music and the layout of the level will also change according to the stages.

Denial focuses on the failure of the boy to accept the loss of his father. The aesthetic of the game will lean towards darker shades and eerie music. Anger depicts the child's anger and develops a sharper aesthetic with edgy music. Bargaining and depression uses the noir atmosphere to drive the aesthetic. Acceptance will feature a calmer, relaxed tone as the child comes to terms with his situation.

### IV. KEY FEATURES OF THE SYSTEM

The proposed system includes many features to implement the objectives of the application with the foremost being:

#### ➤ **Campaign/Story Mode**

The game features a story mode which will follow the narrative and allow the player to progress through the game. The campaign will include the five levels, each following one of the five stages. The story will follow the boy, as he travels through each of the 5 stages. Each of the five stages will challenge the player in various ways.

#### ➤ **Safe Zone/Autism Support**

The autism support section of the game will feature the real-world tasks that the parent/guardian can assign to the child. The administrator account for the game must be used to assess the difficulty level necessary for the child and assigning new tasks. The administrator account is used to observe the child and provide the necessary support.

#### ➤ **Aesthetically progressive levels**

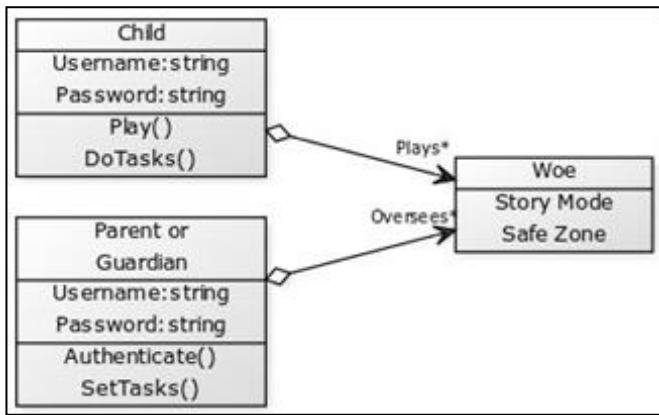
The levels of the game will progressively change to reflect the five stages of grief and their respective atmosphere. Changing the color, music and the clothes with each of the five stages allows the player to experience the closure necessary for a healthy.

### V. SYSTEM DESIGN

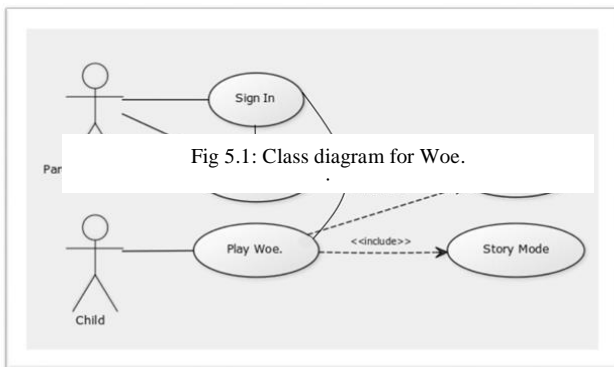
The system design of the proposed system can be represented through the use of UML diagrams which outline the architecture and organization of the system.

Woe provides the client with aspects such as administration capabilities and support system for the autistic child to help improve their understanding of the world around them.

#### A. Class Diagram



**B. Use Case Diagram**



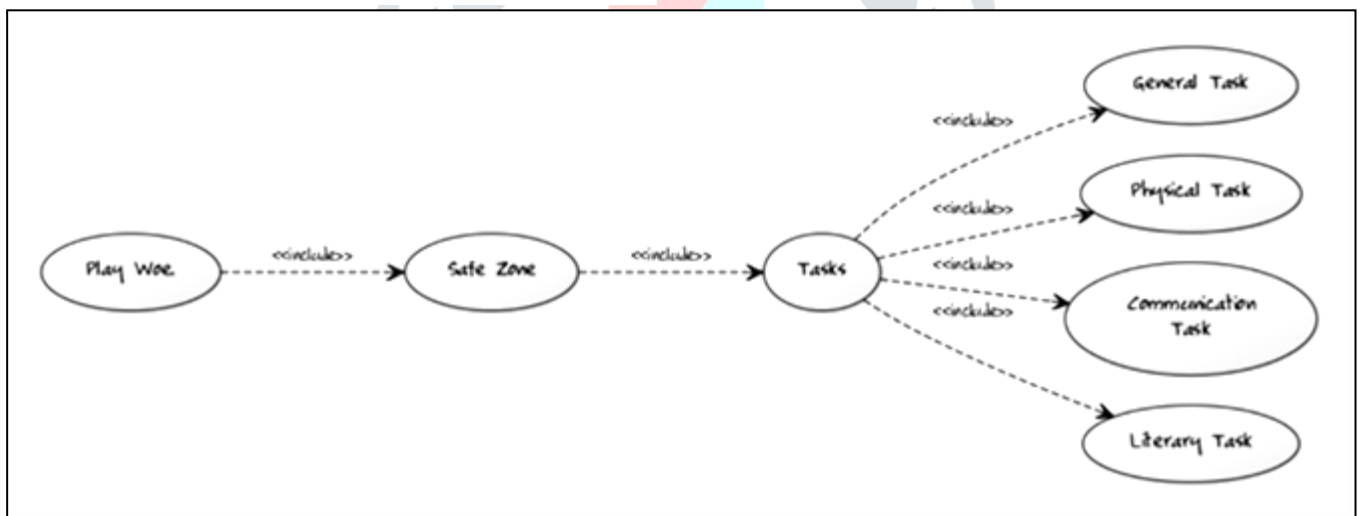
engine and deployed on the platform Android Play Store and Steam.

➤ **Android**  
 Android is an open source mobile operating system developed by Google. The Android operating system (OS) is based on the open Linux kernel. Developers can create programs for Android using the free Android SDK (Software Developer Kit). Android programs are written in Java and run through Google’s “Davlik” virtual machine, which is optimized for mobile devices.

➤ **Steam**  
 Steam is a gaming platform on which games are released and played. It is a free software which can support both free and paid games.

➤ **Unity**  
 Unity is the game engine and game maker used for the animation and the mechanisms for a game. The main activities of the Unity engine are background run and do not affect the game in any way.

The game will be created using the Unity software which is provided free of cost for personal use under the conditions of profit margins. Unity itself provides the capabilities to convert a project into an Android application using an in built SDK plug-in.



Deployment on the Android app store and Steam involve account creation and payments to upload the proposed system for commercialization.

VI. ABOUT THE PLATFORM  
 Woe will be implemented using Unity as the game

VII. EXPECTED RESULT  
 The expected output of the proposed project will be an amalgamation of educationally and physically centered tasks and five levels of grief represented with utmost creativity to provide the child with a remarkable experience.

The development of the proposed project is well under way and progressing at a steady rate. Shown below are some screenshots of the project in its development phase on the Unity platform.



## VIII. CONCLUSION

We hope to provide a platform through which autistic children can deal with their own problems and frustrations. Through this game, children can develop their unrecognized talent and can maintain a proper unstressed atmosphere. This game will provide people with a different perspective into the lives of autistic children and their view of life and their surroundings. We expect that Woe will allow people develop better relationships with autistic children and understand their behaviour.

Woe is essentially a more entertaining but also useful game for children with autism, wherein the safe zone will provide the autism support and the story mode will provide the child with entertainment. Woe will supply the children with tasks which relate to their daily lives in order to develop their social skills and other aspects of their physical and mental health. Woe will provide the educational as well as the entertainment factor which most other games do not provide.

## REFERENCES

- [1] <https://googleplay.com/android/>
- [2] <http://stackoverflow.com/>
- [3] <http://unity.com>
- [4] <http://steam.com>
- [5] <http://playdead.com>