# Introduction

The first time I had controllers on my hand and start figuring out how to use and how to move my character when playing console game when I was a kid, I had a great deal of excitement. Further on the days of learning how to play video games and having understood the basic fundamentals of the gameplay mechanics, when gaming to me isn’t only about accomplishing the objectives in the games anymore but also about the story, the plot of the game where the creativity and imagination of the developers poured in that fascinated and interested me. And now, when the gaming field has dramatically changed, drawing both gamers like me and a variety of audiences, and with a huge amount of tools and availabilities that can help an even non-tech person build a game, I started to have interest with a thought that this is the ideal time to build a game of my own. To me now, it isn’t about playing video games for fun anymore, it should still entertain players but more than that, they should also act as inspirations through the game plots, help players learn from them, can be motivated through the story, just like a movie or a book you read or watch. So, I want to create a game of my own, a product of my own creativity and imagination poured not only because I’m passionate about video games but also to satisfy my curiosity about developing video games.

My passion for video games, ambition to push the boundaries of creativity, and drive to grow professionally will all be reflected in this game. I will carefully outline the project's main goals, the inspirations behind its conception, and anticipated outcomes within the pages of this proposal. This is a dedication to providing an engaging and motivating gaming experience, not just a personal journey.

First, talking about what actually are the motives that pushed me to develop such a game, the first reason is my deep appreciation of action-adventure video games, and I also see this game as an opportunity for my creative expression as It enables me to create complex worlds, interesting characters, and captivating stories that I have thought about before.

Moreover, another reason is that I enjoy playing games that challenge my abilities and require me to solve riddles and overcome obstacles but Instead of creating a game with intense combat, I'm looking for a more laid-back experience for nowadays there are too many games that concentrate on fighting, and I find it pretty simple as well as not much of a type of entertainment for video games. So I want to bring to life a game that players can lose themselves in the breathtaking scenery, unwind to the calming music, and use their wits to solve puzzles and progress.

Finally, beyond bringing me personal satisfaction, this project additionally shows my abilities and professional development. It serves as a concrete example of my capacity to find new technologies on my own, overcome challenges, and provide a finished product. My skill in game development and project management is demonstrated by the creation and presentation of this game. It's a chance for me to demonstrate that I'm prepared for my upcoming academic and professional goals.

It's important to step back and acquire a wider perspective now that the motivations and the factors that are propelling this project have been discussed. Understanding the dynamic environment of the video game business, where your game will reside, is essential to producing a meaningful and lasting product.

Gaming industry have recently outpaced even music and film industries in terms of market size, which is evidence of their enormous influence on contemporary culture. Video games are no longer only played by a small group of enthusiasts they are now a part of billions of people's lives worldwide.

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Figure Number of Gamers Growth

But this industry's continuous expansion is what really makes it unique. With a forecasted expansion that promises to reshape entertainment on a worldwide scale, the trajectory of video games doesn't appear to be slowing down any time soon. The numbers are astonishing, it is predicted that 3.32 billion people will actively participate in gaming by 2024. The industry's financial prowess is as impressive, with $155 billion in revenue earned in just 2020. By the year 2025, industry analysts project that this amount would increase to approximately $260 billion in sales. (Jovanovic, 2023)[13]

As a result, tech firms are attempting to take on this source of income. Tech behemoths including Google (GOOGL), Apple (AAPL), and Meta (META), formerly Facebook, have all announced plans to enter the video game market. (Beattie, 2021) [12]

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Figure Statistics of video games revenue

Beyond the figures, the video game industry has a revolutionary ability. It is a force that has connected individuals from all walks of life and cut across age, nationality, and background barriers. A shared experience that unites people, video games have evolved into much more than just a method of amusement. It serves as a platform for collaboration, competition, and interpersonal connections amongst friends, relatives, and strangers from all over the world.

Now we’ve known that the world of video games is a vast, varied, and ever-changing one. It's more than simply a hobby, it's an expanding part of the economy that includes a wide range of genres, platforms, and experiences. There is a game for everyone, from the casual mobile gamer to the dedicated eSports contender. And one thing that attract my attention in the gaming industry is the indie games, a new era of artistic expression has begun thanks to the independent gaming community. Smaller development teams, frequently working with little resources, produce games that are both creative and emotionally impactful, similar to me with this video game development project, I aim to produce a video game that’s not only about fighting monsters or gain new weapons, its about discovering, captivating story and unwinding, however the specific domain of the project isn’t really an indie game. The enormous range of genres and styles accessible in modern gaming is one of its amazing features.

In this game, you will enter the Metroidvania genre, a popular area of the gaming world, as you explore more into the scope of my project. They promote exploration and reward learning new skills gradually, revealing secrets and undiscovered routes as players advance. The 2D platformer niche, which highlights precise character movement and puzzle-solving in the environment, is where my game project further focuses its attention. In order to overcome obstacles and move forward through interesting 2D landscapes, players must improve their leaping, climbing, and problem-solving abilities in this area. However, the way these aspects are combined in the game is what can make it stand out. While maintaining the core elements of 2D platformers and Metroidvanias, the game is dedicated to giving players a calm and relaxing experience. It's a change from the usual action games, allowing players to enjoy the game's beautiful landscape, its calming soundtrack, and to explore and solve puzzles at their own pace.

Finally, let's now discuss about the technicalities of making our game playable. At the moment, there is a wide range of technologies and methodologies that we can use to develop video games after my online researches. These tools—which range from powerful game engines like Unity to adaptable graphics programs like Adobe Photoshop—serve as the foundation for our imaginative vision. A selection of development approaches are also available, including the structured approach of Waterfall and Scrum.

**Waterfall Methodology:**

For the planning, I can temporarily use the Waterfall method to develop a project plan for my my gaming project. It offers a straightforward, step-by-step methodology that fits my organized learning style. I can separate the development process into its several phases and concentrate on each one thanks to names like Requirements Gathering and Analysis, Design, Implementation, Testing, Deployment, and Maintenance. This method aligns well with my goal of gradually building the game while learning coding, design, and testing skills in a systematic manner.

(PAL, 20203) [1]

**Agile Methodology:**

The iterative and developing nature of game development is well suited to the agile methodology's dynamic and adaptable approach. It places a strong emphasis on constant engagement, ongoing development, and producing playable builds on a regular basis. This method encourages flexibility, which makes it perfect for projects whose requirements could alter or develop.

**Scrum Methodology:**

Scrum is a particular Agile framework distinguished by its incremental and iterative project management methodology. It works in brief development cycles known as "sprints," which usually run between two and four weeks. Scrum encourages close communication between little, interdisciplinary teams, or "Scrum teams." With daily stand-up meetings and an emphasis on delivering a potentially shippable product increment at the conclusion of each sprint, it places a strong emphasis on transparency. Scrum is useful for projects that call for frequent feedback and close team coordination.

(Starloopstudios, n.d) [11]

**Possible Technologies:**

**Game Development Engine - Unity:**

The Unity game development engine is one of the key components of my gaming project. A flexible and user-friendly platform is offered by Unity for making 2D games. Because of its extensive tools and support for the C# programming language, it's the perfect option for creating complex gaming mechanics and character movements. I can speed up my production process by using the wealth of resources available in Unity's asset store.

(Sinicki, 2021) [5]

**Game Development Engine - Godot:**

A growing number of independent game creators are using the open-source Godot gaming engine. It excels at creating 2D games and is renowned for being straightforward and adaptable. Godot makes it usable for developers of diverse ability levels using a visual scripting interface. Due to its lightweight design and community-driven development, it also benefits from prompt updates and helpful assistance.

(Zenva, 2020) [6]

**Game Development Engine – Unreal Engine:**

The robust and adaptable Unreal Engine, created by Epic Games, is a game engine recognized for its outstanding visual capabilities. Although it's frequently utilized for 3D games, it may also be successfully employed in the creation of 2D games. The highlights of Unreal Engine include its breathtaking visual scripting system called Blueprints, a sizable marketplace for assets, and a welcoming community. A cross-platform engine that prioritizes immersive experiences and high-quality images is appropriate for such projects.

(Moss, n.d) [7]

**Graphics and Design - Adobe Photoshop:**

To enhance the graphic components of my game, Adobe Photoshop is a great option. With this software, we are able to create excellent 2D pictures with this professional-grade program, including character designs, world landscapes, and challenging sprite animations. It can serve as my creative center and allows me to bring my artistic vision to reality while also producing an engaging and beautiful game environment.

(Stormystudio, n.d) [8]

**Graphics and Design - Aseprite:**

Aseprite is designed specifically for pixel graphics and 2D game creation, in contrast to the industry standard Adobe Photoshop. Aseprite is a favorite among independent game creators since it facilitates the development of pixel art with specific capabilities for pixel-level editing. It features a simple user interface and seamless sprite animation creation.

(Computerhope, 2021) [9]

**Key Phrases:**

* "Platformer game project"
* "Metroidvania genre"
* "Creating a relaxing gaming experience"
* "Emphasis on exploration and puzzle-solving"
* "Learning game development through self-study"
* “Learn C# for game development and Unity”
* "Adopting the Waterfall methodology"
* “Players looking for a mixed game of entertainment and relaxation”
* “Gaining hands-on experience using C# and Unity.”

# Aim

The project's goal is to provide a relaxing and immersing Metroidvania game that offers players a chance to unwind and have fun, to provide players with a break from their everyday routine by creating a peaceful and comforting gaming atmosphere.

The direction to achieve the goal is to combine fun gameplay with a serene story. Players will be led by the game through a setting where leisure and exploration are prioritized. The project aims to create a relaxing ambience by mixing lovely graphics and calming music, allowing players to feel tranquil while they move around the game's setting.

# Objectives

**Requirements Gathering and Analysis Phase**

## Objective 1 : Define Project Scope and Learning Objectives

### Activities

* Identify personal learning objectives for Unity, C#, and game development.
* Define the scope of the game project, including gameplay elements, art style, and narrative themes.
* Gather requirements and tutorials to learn to create visual art with Adobe Photoshop and Unity courses, tutorials to learn how to code and develop a 2d platformer game.

### Deliverables

* Outlined learning goals and required competencies.
* A detailed project scope document that outlines the gameplay, graphics, and story.

**Design Phase**

## Objectives 2 : Conceptualize Game Mechanics and Design

### Activities

* Identify key gameplay mechanics that align with the Metroidvania genre.
* Create initial game design concepts, including character abilities, level layout, and interaction dynamics.

### Deliverables

* Outlined learning goals and required competencies.
* A detailed project scope document that outlines the gameplay, graphics, and story.

**Implementation Phase**

## Objectives 3 Implement Gameplay Mechanics and Player Controls

### Activities

* Learn how to use Unity tools and assets proficiently.
* Learn how to use Adobe Photoshop proficiently.
* Learn how to code gameplay mechanics, controls, and movements.
* Learn how to create or apply soundtracks for game.
* Code and implement player movement, interactions, and abilities based on the defined game mechanics.
* Iterative unit testing to ensure player controls and mechanics are functioning correctly.

### Deliverables

* Functional player movement and interactions in the game environment.
* Unit tested gameplay mechanics with documented test results.
* Can apply soundtracks for the game.
* Good understanding of Unity's tools and assets.
* Good understanding of Adobe Photoshop.

**Testing Phase**

## Objectives 4 Test Gameplay and Identify Flaws

### Activities

* Conduct comprehensive testing of gameplay mechanics and controls to identify bugs and issues.
* Document and prioritize problems based on severity and impact on player experience.

### Deliverables

* Report on the tracking of bugs and problems with gameplay.
* Problem list with priority, descriptions, and likely effects.
* Refined and improved gameplay mechanics with fixed bugs.

**Deployment Phase**

## Objectives 5 Prepare for Final Presentation

### Activities

* Prepare the final version of the game for the presentation.
* Assemble the game build for the presentation, making sure to include all required resources and assets.
* Prepare slides for the presentation.

### Deliverables

* Game completely packaged and prepared for the final presentation.
* Cohesive presentation slides for the presentation.

**Maintenance Phase**

## Objectives 6 Present Final Project and Seek Feedback

### Activities

* Create and deliver a thorough final presentation to professors and teachers.
* Respond and answer to all the feedbacks and questions made throughout the presentation.
* Reflect over my project experience and the lessons learned during the development phase.

### Deliverables

* Demo of the game.
* Completed final presentation showcasing the project's gameplay, visuals, and design.
* Documentation of feedback received during the presentation and your responses.
* Reflection report summarizing the learning journey and skills acquired.

# Legal, Social, Ethical and Professional

## Legal

To prevent potential legal concerns or copyright violations, it is essential to make sure that any third-party game assets utilized in the project are properly licensed. (artslaw, n.d)[4]

To remedy this issue, a careful review of the licensing related to third-party gaming assets will be done. A thorough examination of the terms and conditions specified by asset providers will be made in order to ensure the legal authorization to use these assets in the project.

## Social

In the current digital era, excessive gaming has become a major issue that could have a negative impact on gamers' physical and mental health. The significance of addressing the effects of extended gaming sessions is highlighted by this problem. (Adair, n.d)[3]

The game actively helps players establish a positive balance between gaming and their daily life to address this difficulty. Reminders and prompts in-game can operate as nice reminders to take breaks, interact with others, and do other things outside the game world. By integrating features that enable players to set time limits on their gaming sessions, the game not only fosters responsible gaming but also promotes a holistic and well-rounded lifestyle. (Horti, 2019)[2]

## Ethical

The creation of content that respects players from diverse backgrounds and cultures while avoiding objectionable material or bias is a significant ethical consideration in game development.

The commitment is to ensure that the game's content, encompassing characters, themes, and the overall plot, promotes diversity and inclusivity. This approach involves a careful consideration of cultural sensitivities, the avoidance of inappropriate stereotypes, and the establishment of an environment where players from various backgrounds feel welcomed and represented. By adhering to these principles, the game will maintain a polite and inclusive atmosphere, appealing to a broader audience, and upholding ethical standards within the gaming industry.

## Professional

A solo developer faces difficulties in effectively planning time in order to achieve project deadlines, particularly when demanding quality assurance and testing are needed for the game. An aggressive approach has been selected to deal with this problem. A manageable project schedule with realistic deadlines has been created using tools like Project Plan 365 and a Work Breakdown Structure (WBS) diagram, improving visualization and memorization. This comprehensive project plan enables regular development tracking and required adjustments, assuring timely project completion and exhibiting project management expertise.

Additionally, a strong approach for testing and quality assurance will be incorporated at every stage of the development process. By allowing for continuous testing as the game is being developed, problems can be quickly found and fixed, maintaining a high level of product quality. A polished and professional game product is intended to be delivered through careful time management and the methodical use of quality control techniques in accordance with project deadlines.

# Plan

**WBS :**

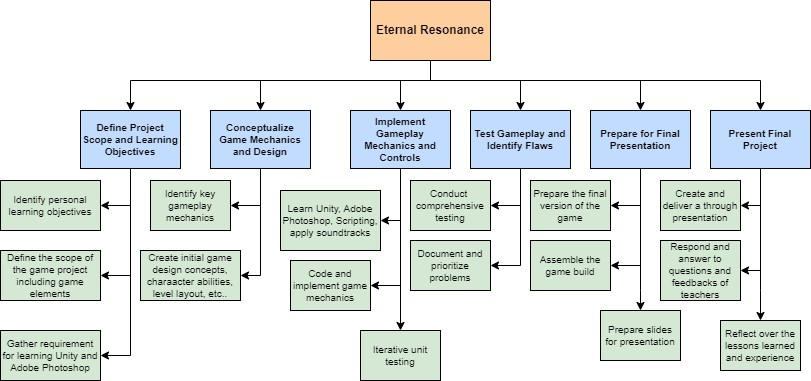


Figure Work Breakdown Structure

The project's WBS offers a precise and well-organized structure for setting up the important goals and activities required for a successful game development. It begins with the broad project title and breaks down the goals into detailed tasks to ensure an organized approach to achieving each objective.

**Gantt Chart :**

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Figure Every objectives to achieve Gantt Chart

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Figure First 3 Objectives Activities Gantt Chart

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Figure Last 3 Objectives Activites Gantt Chart

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Figure Overview of the project plan Gantt Chart

The Gantt chart is used to show the project timeline and task dependencies for developing the Metroidvania game. It provides a thorough understanding of how each target correlates with certain tasks and their associated timeframes, supporting efficient project management.

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