
IT Project Proposal: Operation Umbra

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Submitted by: Andy Lee

Submitted to: Edwin Lee

Introduction:

Welcome to Operation Umbra, the next generation of tower defence! For decades, this genre has been dominated by titans who have not appealed to the benefits of such a style of game. We seek to fix this, to create a game that properly utilizes the innate characteristics of tower defence to the fullest.

Below, this proposal is divided into sections, each with important information regarding the inspiration and plans for this project:

- Project Description
 - A more detailed look at what the game itself is focused on
- Project Purpose
 - A more detailed look at why the concept of Operation Umbra came about in the first place
- Architecture
 - A description of what framework the project will be built upon
- Goals
 - A list of what will be needed for a successfully completed Operation Umbra
- Risks
 - A list of sources of risk that may jeopardize the success of the project and how they will be overcome
- Implementation Challenges
 - A list of difficulties that are likely to arise in implementation and how they will be overcome
- Approach
 - A description of how the project will be developed
- Timeline / Milestones
 - A description of how project development will be divided and what will be done in each section
- Conclusion
 - A wrap up of information in this proposal

The overall information in this proposal is based on extensive personal experience with such games and existing knowledge of video game design.

Project Description:

As an undertaking into the genre of tower defence video games, Operation Umbra seeks to capitalize on the inherent yet often forgone aspects of such a piece of media to create a uniquely entertaining product.

It follows abstract and simple gameplay in the aforementioned style of tower defence. As it progresses, the story becomes more and more clear, pushed forward by a mysterious antagonist figure who begins interfering with the basic mechanics of each level. The antagonist is directly confronted twice in the game, the first time in a manner that further establishes negative characteristics within this character. The second time, however, pulls a twist, revealing that this presumably evil individual may not be the villain of this game. This twist is foreshadowed, but is meant to be surprising to the player.

In this final level, there are two endings for Operation Umbra, separated by a choice given to the player to slay or spare the antagonist. If the player chooses to kill, they will get the bad ending, with the game world being destroyed entirely. However, if they spare this shrouded figure, the player will receive the good ending. Here, the antagonist will take the opportunity to destroy the player, but instead of losing the game, the player will be able to witness the antagonist turned hero bring life to the largely barren levels thanks to the player's sacrifice. From this, the revelation that the player was the villain all along will emerge, creating a more complex perspective.

Project Purpose:

We seek to develop this game in order to better use the tower defence genre and produce an optimal experience.

Having played many existing tower defence games, I observed that they largely play into competitive aspects to garner success. For example, Bloons Tower Defence, a well known series, has taken the approach of allowing players to unlock towers and upgrades over time and using them to take on harder and harder challenges. Whether through the level system in classic Bloons or through the city building style in Monkey City, the player's goal is to gather powerful resources to be victorious in stages that are balanced in an incrementally difficult manner.

On a similar note, the popular series Kingdom Rush also has a focus on competitive gameplay, using a lengthy tech tree and specialization of towers to allow players to, over the course of the game, develop effective and unique strategies to reach victory.

While both of these franchises were extraordinarily successful and personally enjoyable, there was a bit of a disconnect between the genre and the games. Tower defence is, at its core, a simple and easy to understand concept, meant to be readily accessible to new players and casual to play. The whole point of a genre with such limited strategy is to put emphasis on something other than gameplay. Bloons and Kingdom Rush both are essentially just RPG's, using the style of tower defence by what could be interpreted as just coincidence, and more recently to maintain branding.

In order to really take advantage of tower defence, Operation Umbra seeks to make a story rather than a leaderboard. To venture down this less travelled path of development and seek out the creation of a revolutionary video game.

Architecture:

Project Umbra will be built upon the programming language of Java for a desktop application. Heavy use of object oriented programming, Java's graphics libraries, and the Timer Class will enable the creation of an endlessly customizable 2-D environment to build the game in.

Most likely, a system will be designed to make level design more convenient, since the tower defence aspects of the game should be relatively consistent. Story-based elements will have to be manually built for when they become relevant due to the nature of their place in the game as unique effects.

Goals:

The following is a list of mandatory and auxiliary elements that should be included for the project to be considered complete

- Mandatory elements
 - Functioning game system
 - Basic tower defence template with lives, enemies, towers, and some sort of currency to create towers
 - System to store and build levels effectively, critical to reduce workload and enforce consistency
 - Functioning end game story elements
 - The final choice which makes this game more distinct from potentially similar games
 - Menu and other UI elements
 - General important elements such as main menu, settings, etc
- Important yet non compulsory elements
 - Save/Load system
 - File I/O to allow for progress not to be lost
 - The first confrontation with the antagonist
 - Story element, can be removed but doing so would make the story less coherent
- Auxiliary elements
 - Visually appealing graphics
 - Base the creation of unique graphics off of existing “turtle” project and the turtle sprite used therein
 - Music
 - Adventure RPG style music, perhaps with electronic styling to contribute to the simplicity of the gameplay
 - Audio effects to indicate the presence of the antagonist
 - Glitching effects primarily to enhance the antagonist’s character
 - Visual effects to indicate the presence of the antagonist
 - Glitching effects primarily to enhance the antagonist’s character
 - Subtle hints toward the story hidden in gameplay
 - Not entirely noticeable but present pieces of story sprinkled throughout the game

Risks:

Any significant undertaking such as this has risk. The following is a list of potential issues that may hinder the success of Operation Umbra:

- As a game, advertising is a key aspect to the success of this project that must be secured and done well
 - Will discuss in further detail upon at least partial completion of the actual product being created
- With myself being the sole developer for this project at the moment, it is possible that development may become slow or volatile
 - The usage of the AGILE development cycle as well as the extra pressure of creating a brand new game series will assist in mitigating this risk
 - An indie level of expected development will also allow for a proportionally acceptable speed
- Being a single player story based game, Operation Umbra, even if successful, may end with just one game

- The usage of mysterious and open-ended characters and endings will ensure that a sequel will be available to develop if applicable. Perhaps even one of a different genre to effectively enable multiplayer and give Operation Umbra an indefinite lifespan
- Being a story based game, Operation Umbra may be difficult to develop resources for
 - Consistent communication and play testing between sprints as described in the final section of this proposal will ensure quality control. If necessary, work can be outsourced through personal connections

If all is completed successfully and all risks are avoided, Operation Umbra will yield a unique tower defence game that will bring new insight to the genre and raise significant funds through sales!

Implementation Challenges:

The central obstacle in terms of the programming of this project presents itself as creating a platform for level creation, or at the very least a platform to translate stored text files into levels. This will likely require an extensive amount of thinking and formatting to successfully synthesize.

Thankfully, the very essence of this system is very modular and thus should only take time to complete. By placing a significant focus on this task in the timeline below, there will be ample room to do so. Once finished, it will greatly help with the development of other higher level elements of the project as a whole!

Approach:

As mentioned briefly before and detailed below, Operation Umbra will be executed using the AGILE development style. This essentially means it will be completed in multiple sprints, at the end of each of which a working but perhaps functionally incomplete game will be tested. The tests will contribute to what will happen in the next sprint, enabling maximum flexibility during development. They will also strongly help with the reduction of bugs and such.

Timeline / Milestones:

AGILE Method, development split into sections:

- Sprint 1 Jan 3 - 6
 - Creation of function game system template
 - Creation of system to create levels through more convenient interface than hard coding
 - Menu and UI elements
- Sprint 2 Jan 7 - 17
 - Creation of system to create levels through more convenient interface than hard coding if not completed in Sprint 1, as this system may take extra time to complete
 - Both encounters with the antagonist
 - General story implementation and level layout
 - Save/Load System
- Sprint 3 Jan 18 - 20
 - Most auxiliary goals
 - Visually appealing graphics
 - Music
 - Audio effects to indicate the presence of the antagonist
 - Visual effects to indicate the presence of the antagonist
 - Subtle hints toward the story hidden in gameplay

Conclusion:

Overall, Operation Umbra will be a progressive incarnation of what tower defence was meant to be. Under this timeline of under a month, this project will be able to create not only a hopefully successful game, but also the foundation for more like it in the future. Under the guidance of the AGILE system and extensive planning in this proposal, there should be no issue creating something revolutionary!