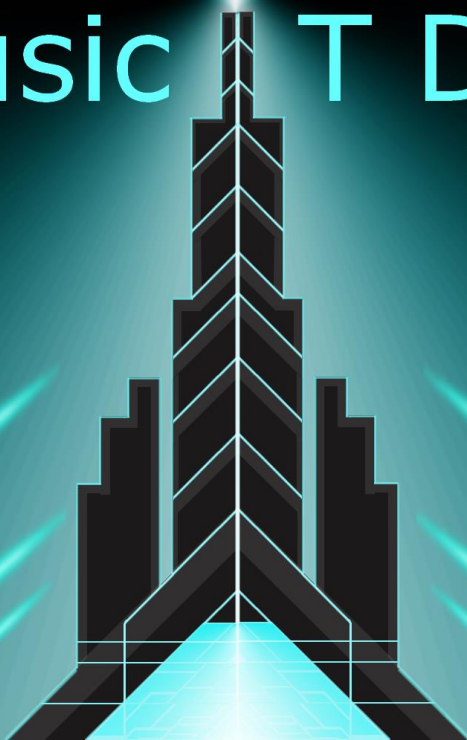


Music T D



*New Moon
Games*

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VERSION HISTORY

Version 0.1 – May 1, 2013

- First version of the document. Template based on link noted in “Links” section

Version 0.2 – May 8, 2013

- Second version of document.
- Art assets and UI mockups added.
- Tower and enemy traits cleared up

Version 0.4 – May 21, 2013

- Game world concept added

Version 1.0 – June 9, 2013

- All version changes cleared

GAME OVERVIEW

Game logline

Music TD is a tower defense game with dynamically generated gameplay based on the beats and intensity of music chosen by the player.

Gameplay synopsis

Music tower defense provides a tried and true gameplay experience combined with a unique twist to provide dynamic gameplay to suit individual tastes. Tower defense is a popular niche genre where the player has to defend some objective from waves of enemies by building mazes and defensive structures to kill or otherwise stop the enemies. Players will be able to build and upgrade towers to defend home tower. While our gameplay is not inherently unique, Music TD will create this gameplay dynamically from music which the user can pick. The game will be in a futuristic digital setting, with a look a feel emulating Tron.

GAME DETAILS

Game genre?

Tower defense

Is this single-player or multiplayer game?

Single Player

Is this 2D or 3D?

2D



Where does the game take place? (world)

Music TD takes place in a futuristic digital Tron-like environment with hostile enemies.

What do I control? How many characters? Can I use vehicles?

The player is a tower builder that sits in an overhead view and can place towers. You are the only “character” who is the builder. In a similar manner to how most RTS plays, the player cannot use vehicles, jump, or any other physical movement. The player can only build.

What is the main focus?

As in all tower defense, the main point of the game is to defend the home base from waves of enemies.

How long the game lasts? Or how long game matches last?

The game lasts the length of one song, which for most people will be 3 to 6 minutes.

Comparison

Bloons Tower Defense

- Does not have music based gameplay
- Units have static pathing rather than dynamic

Desktop Tower Defense Pro

- Does not have music based gameplay

Audiosurf

- Is not a tower defense game

What is unique?

As implied in the title, this game will have dynamically generated gameplay based on music which is unique to this game.

Why create this game?

We are creating this game because dynamically generated gameplay is one of the great frontiers of gaming that has not yet been fully realized. Tower defense provides a solid platform for a good game which is fun for the 3 to 6 minutes a song lasts for.

AUDIENCE, PLATFORM, AND MARKETING

Target Audience

Our target audience is similar to other casual tower defense games. This means we will be targeting 18-24 year old males as our primary audience with 13-17 year old males as our secondary audience.

Platform

- 1.) Dynamically generated gameplay from music chosen by the player.
- 2.) A quick to pick up game to play for five or ten minutes.
- 3.) Aesthetic appeal of the digital technicolored environment

Top Performers

Dynamic Audio Games:

- Audiosurf



Tower Defense Games:
-Bloons Tower Defense
-Desktop TD Pro

Feature comparison

Music TD combines these two genres (dynamic audio games and tower defense) into a single game. This makes it inherently different from any game in one or the other genre.

FEATURE SET

General features

Music TD has the same features as many other tower defense games. The game primarily focuses on single player mode, where the player can play various levels. There will be a few prebuilt levels that will act as tutorial levels and to show off special gameplay, but most levels will be generated when the user picks a piece of music from their own computer.

Gameplay

Enemies will spawn at different points along the edge of the gameplay area. These enemies would spawn based on the intensity of the music and the type of music being played. The player will have a “home tower” in the middle of the gameplay area. The player will be able to place towers to attack and slow the movement of enemies trying to reach and destroy the main tower of the player.

THE GAME WORLD

Overview

The game world will be a futuristic digital world with heavy emphasis on saturated technicolors. We will be emulating AudioSurf’s environment which provides an excellent extension for almost any genre of music. The world does not have an extensive background story or history, but simply creates a setting upon which the gameplay is built. Figure 0 offers an example of the game world looks like.



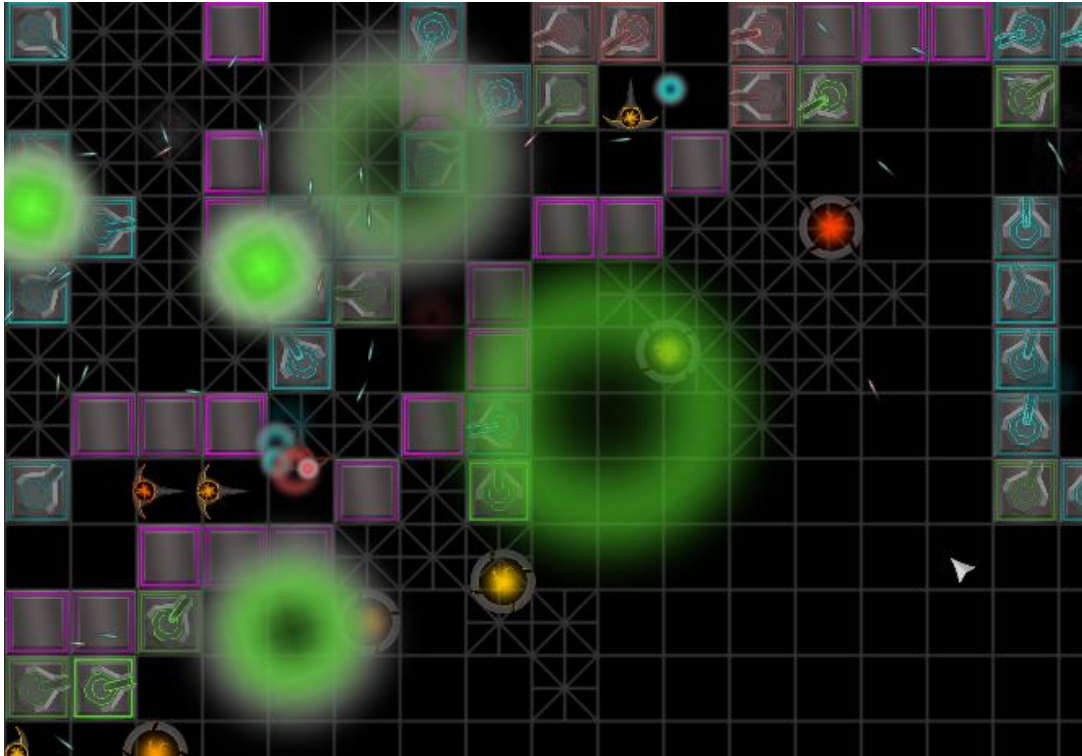


FIGURE 0: WORLD EXAMPLE

Key locations

Player home tower – the main objective of the enemies is to destroy the tower, player’s main objective is to defend it.

Scale

Like other tower defense games, the game will be an overhead view with a tower (being 40-50ft tall) taking up about 1 to 2 percent of screen.

Objects

The major objects in the game will be broken up into two major categories: enemies and towers. The actual items and specifics of these categories are further elaborated on in the “Tower Characteristics” and “Enemy Characteristics” sections.

CAMERA

Overview

The camera is an overhead view of the gameplay area with the home tower in the middle and enemies spawning from the edges of the gameplay area. The camera is static and cannot scroll the map.



TOWER CHARACTERISTICS

Overview

There will be many of the standard tower defense tropes as the main towers to defend with. Each of these towers has the ability to be upgraded to better versions to improve range, damage, shooting speed, or other characteristics

Tower types

Table 1 shows five different types of towers that will be in game. Each tower has a rating in various statistics that affect how towers perform in combat. The statistics are:

- Range: Affects how far the tower can shoot projectiles.
- Rate of Fire: Affects how frequently towers can fire projectiles.
- Damage: Affects how much damage is dealt to an enemy that is hit by the tower's projectile.
- Speed: Affects how fast projectiles move.





















TOWER TYPE	RANGE In Squares	RATE OF FIRE In Squares	DAMAGE Points of Damage	SPEED In Squares per second	SPECIAL
Wall 	0 N/A	0 PS N/A	0 N/A	0 N/A	Blocks Enemies
Rail Gun 	5 	0.5 	5 	0.2 	None
Splash 	2 	0.25 	5 	0.2 	Splash Damage
Sniper 	10 	0.25 	10 	0.5 	None
Slow 	2 	1 	2 	0 N/A	Slow Effect

TABLE 1: TOWER STATISTICS. SHORT RED BARS INDICATE LOW ABILITY, YELLOW BARS INDICATE MODERATE ABILITY, AND LONG GREEN BARS INDICATE HIGH PROFICIENCY IN A STAT. IN ADDITION, SQUARES REPRESENTS THE SIZE OF A SINGLE GRID SQUARE ON THE MAP

USER INTERFACE

Overview

The gamer will have two different ways in controlling the game. The first is the menu system, which will allow the user to tweak options such as turning on and off sound effects, making a playlist of too draw from in gameplay, or launching and quitting the game. The second is gameplay, where the user will go about playing the game through button presses and mouse clicks. A note should be made that there will be a pause menu available from inside gameplay however, it's considered part of the menu system as it contains the same features.



Menu UI

After going through the splash screen the player will arrive at the Main Menu, as is displayed by Figure 1. Here the player can navigate to almost all other screens through the buttons shown on the left.



FIGURE 1: MAIN MENU

Before the player can start playing he/she needs to go load a song from the LoadSong screen as shown by Figure 2. The player is given the option to pick a song that has already been loaded which they can click on and then press the load saved button to load the song into memory, from here the player would be taken back to the Main Menu where they can then click new game to start a game with that song. However the player can also click browse, which will bring up a window as is shown by figure 3, here they can go through their library till they find a song they like, click the button open to load the song into memory and then be taken back to the main menu.



FIGURE 2: SELECTING A SONG

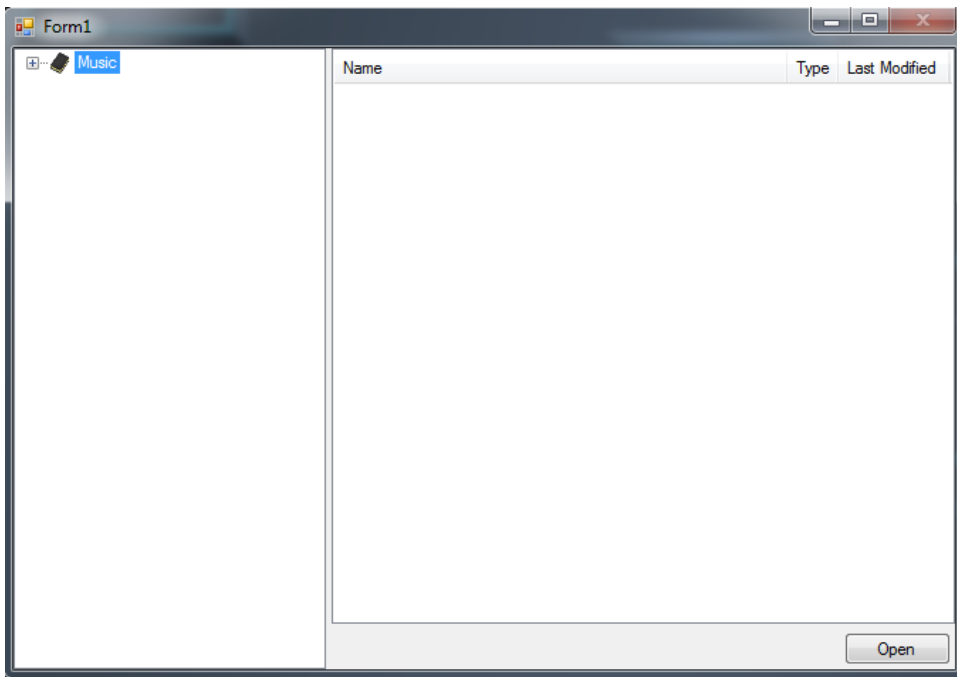


FIGURE 3: WINDOW TO SELECT SONG

Figure 4 currently displays an simple options menu which currently has a check box to turn off and on sound effects which aren't even implanted as of yet. As time progresses we'll add more options such as lowering or raising the volume of the song, and maybe screen size.



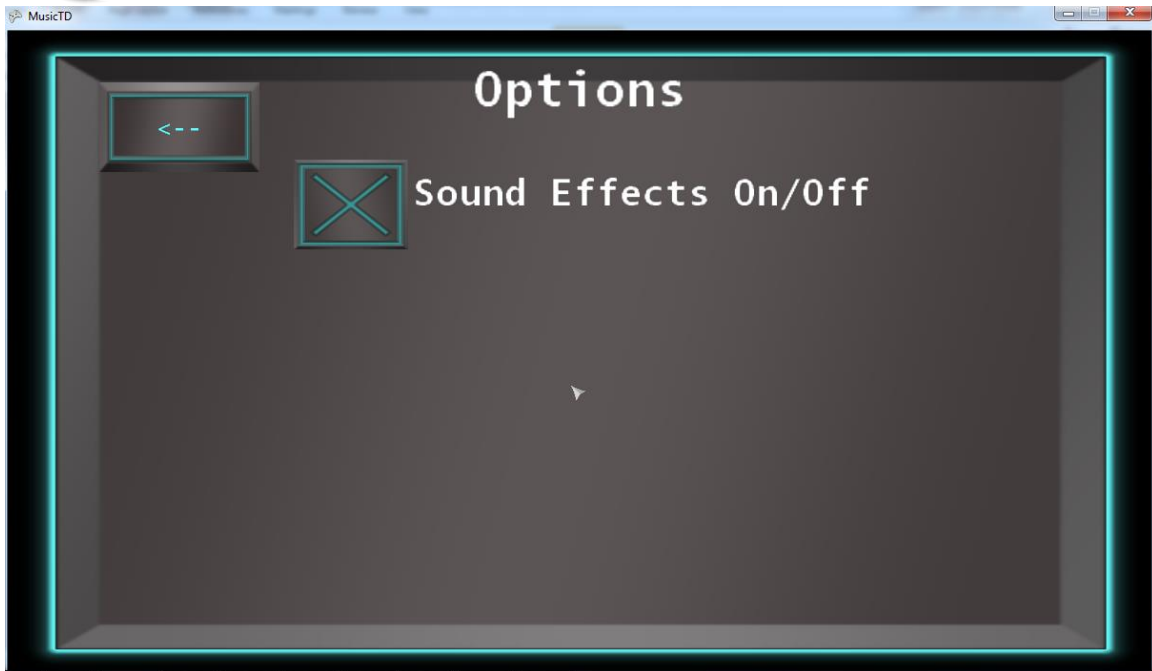


FIGURE 4: OPTIONS MENU

If the player wins or loses the game a screen similar to figure 5 will appear, with the only difference for the win screen being that it says you win rather than you lose. The screen allows the player to see how they did, and gives them the option to replay the song, select a new song or go to the main menu.



FIGURE 5: WIN/LOSE SCREEN



Gameplay UI

Figure 1 and 2 below displays the basics of how the UI looks inside of gameplay. The majority of the screen will be taken up by the grid, which will hold the majority of gameplay in real time, it's where towers and enemies will act and fight on their own accord based on their functions with some small exceptions to get the player involved. Most player involvement will occur on the lower and right side of the screen. The right side will display info such as player life, the current level, current funds, the song and its position in time, and enemies that will be coming in the future to attack the player. Depending on how much time we have, we may also integrate a playlist which allows the player to see and select a song to play from while in gameplay. The bottom portion of the screen will give the player the most control, as it holds tower buttons.

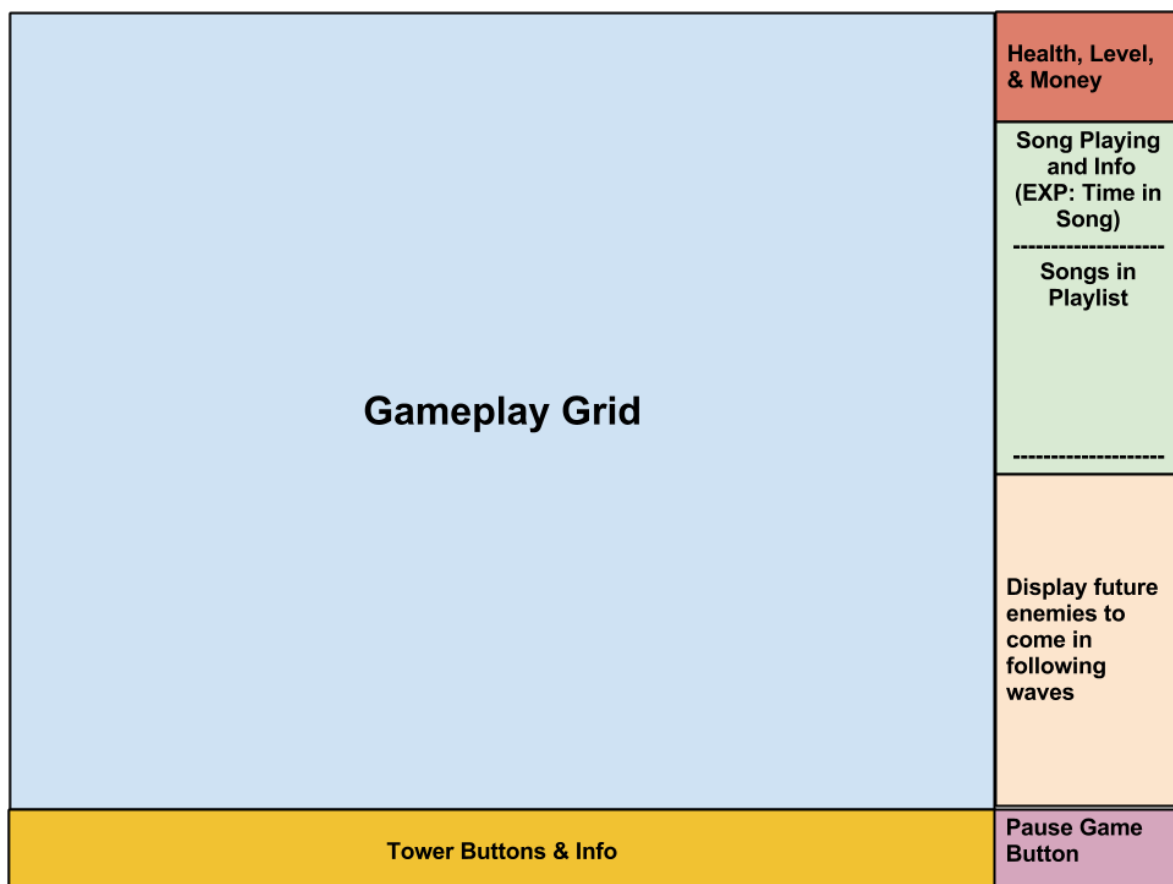


FIGURE 6: SKETCHES FOR UI IN GAMEPLAY.





FIGURE 7: FINAL GAMEPLAY UI

The final tower button ended up being a little different from figure 3, if you look at figure 2 you'll see our current tower button. We ended up having a name represent its ability and function, we kept the stats however, we used symbols to represent what each stat did to save some space. If the user doesn't know what the symbol means they can hover their mouse cursor above the symbol, and text will appear below it stating its definition. The tower in the button still rotates when it is being hovered or clicked on. The cost of the tower in the lower right corner will also change color, with green meaning the player can afford the tower, and red meaning the player can't afford the tower. The number next to tower name represents its according hotkey, when the player hits this key on the keyboard the corresponding tower will appear below the mouse cursor for the player to place, additionally players can also drag and drop towers from the button on to the grid.

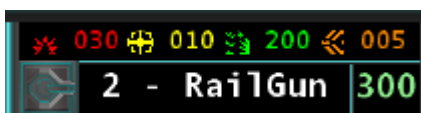


FIGURE 8: NEW TOWER BUTTON



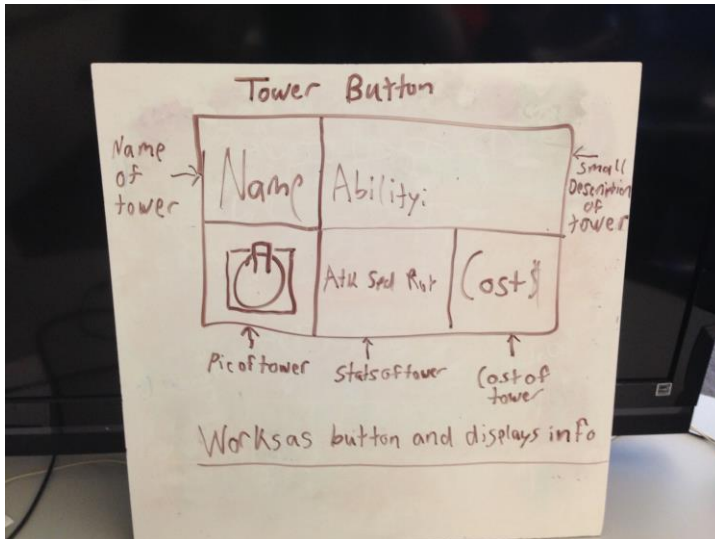


FIGURE 9 SKETCH TOWER BUTTON & INFO.

If the player clicks on a tower on the gameplay grid, a transparent box will appear above the tower as shown by Figure 3 and 4. It will allow the player to see the stats of the tower they clicked on, and allow them to either upgrade the tower to boost its stats if the player has the funds (which figure 4 currently doesn't do), or sell the tower to receive some funds back. In order to close the box the player simply needs to click anywhere outside of the box, or it will disappear for them once one of the two buttons is clicked.

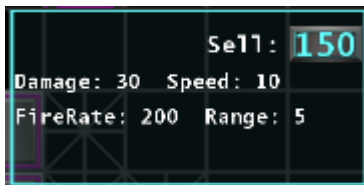


FIGURE 10 NEW UPGRADE & SELL TOWER OPTION

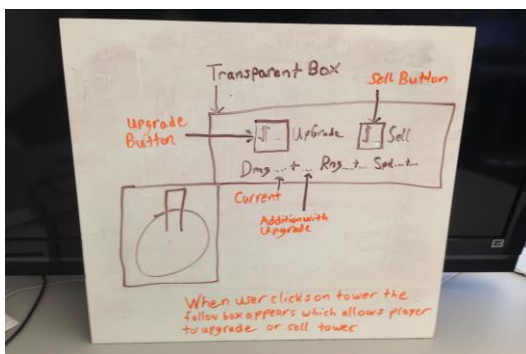


FIGURE 11: OLD UPGRADE & SELL TOWER OPTION

Figure 6 displays how the player's health and money is displayed on the screen. Once again there are symbols corresponding to what they represent, and once again if the player hovers over the symbol text will appear below stating what it stands for. The bar below these two represents the player's health bar which will deplete as the player loses health. Why did we include both a number and a health bar to represent a player's health? We felt it was important to give the player multiple ways of seeing and reading important info especially when it applies to how long they have to live.





FIGURE 12 HEALTH & MONEY

Figure 7 displays the song info for the song the player is using in their current play season. Right now we only have the time of the song and its position working, which is shown by the time and the meter. Later we plan to include the songs name and the artist as shown below.



FIGURE 13: SONG INFO

Figure 8 shows enemies that have yet to spawn with a current 5 sec interval ahead of the song. When the enemy reaches the top of the box it's in, it explodes then spawns accordingly on screen. The purpose of showing future enemies is to give players a heads up of what's to come also, the way we show it represents a similarity to a rhythm game called Guitar Hero, which helps to show that enemies are spawning off of different beats, or frequencies of the song they choose.

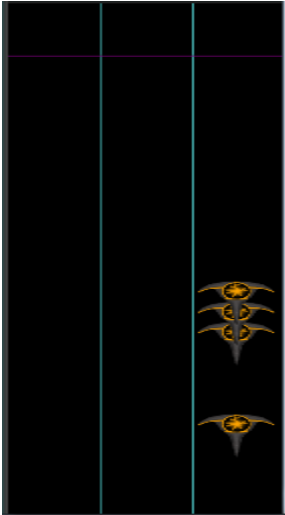


FIGURE 14: FUTURE ENEMIES



ENEMY CHARACTERISTICS

Overview

One of the major features of the game is the game's ability to spawn enemies based on music. The music itself will be filtered into three major groupings based on frequency, low, medium, and high frequencies. Enemies will then be spawned when the intensity of these groups is high.

Enemy Types

Low Enemies – Spawned when there are notes in the middle frequencies, medium speed and medium health. These self-destruct and deal damage on impact with the main tower. The player is only awarded money if they can defeat these enemies before they self-destruct.

Mid Enemies – Spawned when there is a heavy bass, slow and tough to take down. Able to continuously attack the player's main tower from long range.

High Enemies – Spawned where there are notes in the high frequencies, high speed, medium Regeneration and low health. Able to deal damage continuously at close range.

MUSIC AND SOUNDS EFFECTS

Overview

Music TD is based very heavily around the music which it plays. Gameplay and strategy will differ depending on the track chosen by the user.

Details

In order to allow the user to choose any song from their computer, the game will allow the user to navigate through their hard drive and choose a song. From there, the game will do audio analysis on it to determine the amplitude of the song in certain frequency ranges throughout. From here, the gameplay will be generated depending on the intensity of the song in certain frequency ranges.

Music tracks

This is the main replay value in Music TD as the user can use any song on their computer to play the game. There will also be a few songs built into the game to allow for tutorials and to exemplify the gameplay at its finest in case the audio analysis tools are insufficient for the best gameplay.

Sound effects

Since the game could potentially have any genre for its music, sound effects will have to be extremely generic in order to create a cohesive experience no matter what music is being played. In this regard, chimes or simple bells will be the main sound effects for the game. When enemies are hit there will be a generic sound effect as well. These kinds of sound effects will avoid being too distracting



ART

What kind of style will be used in the game?

The game will maintain an aesthetic similar to the recent Tron movie shown in Figures 1, 2. Backgrounds and backdrops will use a dark, near black, background color with bright, primary color highlights. The primary background of the game will be black background with white highlights forming a grid across the playable area.



FIGURE 15: TRON ART



FIGURE 16: TRON ART

Main Tower

The Main tower will be composed of three animations. A death animation, a damaged animation and an Idle animation. A sample of the main tower can be seen in Figure 8.





FIGURE 8: MAIN TOWER

Towers

While maintaining the general aesthetic described above towers will favor straight lines and hard edges and while using bright blue green and purple highlights. An example can be seen in figure 6-3 Figures 9 , 10, 11, and 12.



FIGURE 9: RAILGUN



FIGURE 10: SPLASH,



FIGURE 11: SNIPER,



FIGURE 12: SLOW

All towers will be composed be comprised of three animations. An idle animation, firing animation, and selected animation. In addition, Towers will also have a projectile associated with them. The animations that define a projectile are defined later.

Spawner

The Spawner will be composed of 2 animations. An Idle, and an inactive animation. A sample of the Idle can be seen in Figure 13



FIGURE 13: SPAWNER

Enemies

Enemies like the towers will maintain the general aesthetic of the game. However will favor curved lines and often an Asymmetrical shape. All will also contain a circular opening within then as well. An example can be seen in figure 8, 9 and 10.





FIGURE 14: RING



FIGURE 15: HEAVY



FIGURE 16: FAST

Enemies will be composed of at least an idle animation and a death animation. In addition some enemies will also have a firing animation and a projectile associated with it.

Projectiles



FIGURE 10: RAILGUN SHOT

Projectiles are like bullets and lasers are used by towers and some enemies to apply damage to a target. Projectiles are composed of an idle animation and a hit target animation.

SOUND

Sound Design

Since the focus of this game is music based gameplay all of the sounds produced by this game will be designed to not interrupt the music that is playing. In addition to this, any sounds that do play will reflect the Tron like art style with electronic noises and synth beats.

Tower Sounds

All towers will have a single firing sound and all towers will share a sound when they are placed, upgraded and destroyed.

Enemy Sounds

All Towers will have a dying sound, and a firing sound if they can fire.



SINGLE-PLAYER GAME

Overview

Upon entering the landing menu screen the user will either be able to play a song that was bundled with the game or choose one of their own songs from their computer. Either way, gameplay lasts for the length of the song with enemies spawning on beats of the song to create gameplay.

Details

To choose a song, either the user will play one of the prebuilt songs or navigate a windows explorer like scheme to choose a song from their own computer. Either way, once the user enters the main game screen, they will have a main tower in the middle of the screen and some resources to buy towers. The initial terrain will be procedurally generated based on the song being analyzed, thus each song will produce unique starting terrain. Smaller towers can be built around the main tower to defend it from enemies coming in. The game ends when the song is over or the main tower is destroyed. Points and more resources to buy towers are rewarded for killing enemies before they can reach the main tower.

Victory conditions

Victory is achieved when the song ends and if the main tower is still alive.

RESOURCES & LINKS

Links to related resources

Design document based on this template:

[HTTP://FORUMS.XNA.COM/FORUMS/T/229.ASPX](http://forums.xna.com/forums/t/229.aspx)

[HTTP://INDIEPATH.COM/PUBLIC/DESIGNDOCUMENTTEMPLATE01.DOC](http://indiepath.com/public/designdocumenttemplate01.doc)

A few sections of the document are based on the design template in this book:

Fullerton, Tracy. Game Design Workshop, 2nd Edition: Elsevier Inc, 2008.

