GALAXY BUSTER

TEAM ORIGIN

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DESIGN DOCUMENT

VERSION 0.3

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VERSION HISTORY

Version 0.1 – October 30, 2021
- First version of the document. Template based off the link in "Links" section.
- Removed "Mods" and replaced a few sections are based on the template in Game Design Workshop by Tracy Fullerton.
- Removed several minor categories within sections from the template that were not relevant to our game or redundant.
- Added a project dictionary to the template to clarify terms used.
- Laid out general outline for project. Music and Art are currently blank, implementation will be finished first before including these sections.

Version 0.25 - November 6th, 2021
- Second revision of the document. Added our names, updated all the fonts to look much nicer.
- Added a table of contents.
- Updated the project dictionary, game details (added images in the comparison section), info of the game world (added images), the camera (specifically the aspect ratio).
- Put far more detail into the different ships you can control and the different kinds of enemies, placing them in a table for easy comparison.
- Made a wireframe diagram for all the screens in the game, provided a link to it.
- Defined more items (we haven't yet defined all of them).
- Added info on the kind of music and sound effects we want to have, what impact they should have in the experience.
- Updated the last page on crazy ideas we have - things we would like to implement, time permitting.

Version 0.3 - November 15th, 2021
- Third revision of the document. Just added some new images, and flushed out the epic and special items.

PROJECT DICTIONARY

- ***~~Project S~~ Galaxy Buster*** - ~~temporary (or actual)~~ the name of our ~~the~~ game.
- ***HP*** - hit points, or health points. Refers to the amount of health the player has left. If this value hits 0, the player loses.
- ***Run*** - a single playthrough of the game, up until the fifth level is beaten or the player loses.
- ***Shield*** - temporary HP that doesn't regenerate.

GAME OVERVIEW

Game logline

Project S is a bullet hell space shooter, where the player character is a spaceship at the bottom of the screen shooting at enemy spaceships which either come from the top or sides of the playable area and collects items to become stronger.

Gameplay synopsis

Players will progress across levels where enemies get progressively stronger. To combat this, they will also receive special items as they progress which will increase their stats or give them special abilities. In the final sequence of the game, they will face a boss that tests their skill and item collection. Players will have to develop a good understanding of the patterns in each level and also lightly test their luck in order to get the highest score in the game.

GAME DETAILS

Description
The player will choose a spaceship at the beginning of a run to play as, and progress through the five levels while trying not to lose all of their HP and kill enemies. The player beats the game when they kill the boss at the end.

Game genre?
Shoot 'em up bullet hell.

Is this single-player or multiplayer game?
~~Local multiplayer.~~ The player has the option to either play solo *or* with another person as local multiplayer. This would use the same keyboard - one player would use WASD to move and some of the surrounding keys to use their abilities (Q for the basic ability, E for the special ability) while another would use the arrow keys and the keys surrounding them for their abilities (Ctrl for the basic ability, Shift for the special ability). Once a game has been started, this cannot be changed - i.e,. if you're playing solo, you can't add another player in the middle of the game, or if you're playing with someone else, you both will stay in the game till the end.

Is this 2D or 3D?
~~The game will be~~ This will be a top-down 2D game.

Where does the game take place? (world)
In deep space.

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

The player character is in a spaceship, and the players will have a choice between 3 ships. You must maneuver the ship around to avoid bullets and attack the enemies. There is a stream of bullets fired automatically; along with two abilities: a basic and special ability which you set off. The function of the abilities depends on the ship you choose.

What is the main focus?

The player needs to stay alive, dodging attacks from an absurd number of enemies, while trying to kill them before they kill you.

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

There will be five levels, and each level will take approximately a minute, while the last boss level will take ~~possibly two to three minutes~~ about one to two minutes. The boss gets progressively stronger throughout the level, and at the end, they'll instantly kill you.

Comparison

The Touhou Project: They have very similar level and enemy styles, however the sense of progression through items is unique to our game.

From:
https://www.indiegamewebsite.com/2021/06/22/the-best-touhou-project-games-for-beginners/
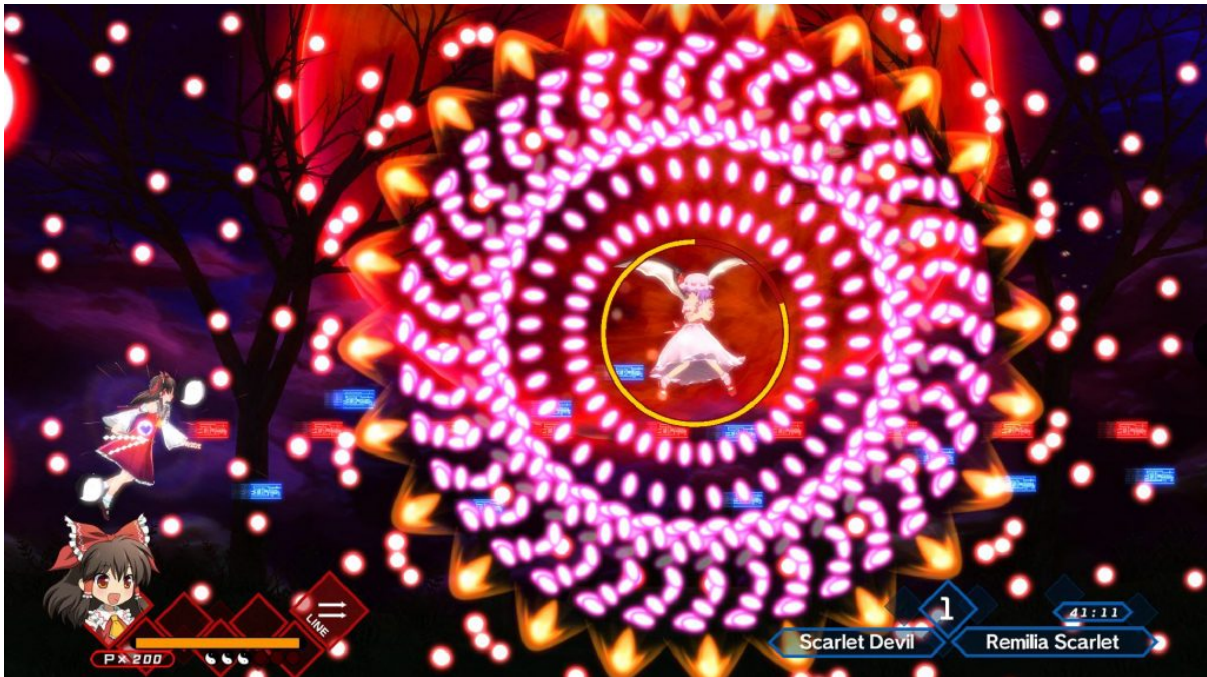
Risk of Rain: The power-up system is similar the collection of items, but how to obtain them and the general style of the game is completely different.

From: https://www.gamespot.com/reviews/risk-of-rain-2-review/1900-6417527/

Binding of Isaac: The dual nature of some items in being a double-edged sword is also similar to our game, and the genre, but other than that our approach to level design and progression is different.

From: https://store.steampowered.com/app/113200/The_Binding_of_Isaac/

Dodonpachi: Though this game and ours are very similar, ours is more progress-oriented and won't push the player as hard.

From: http://www.hardcoregaming101.net/dodonpachi-daioujou/
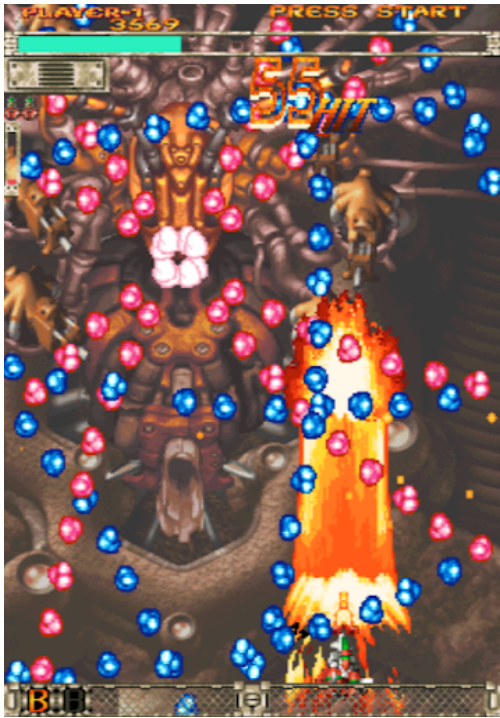
What is unique?
While there is an element of luck, your "luck" is determined largely in part by how skillfully you progress through each level and how you decide which items work best together and with your character.

Why create this game?
Because we want to create a game that tests a player's reflexes, memory, and ability to strategize, while also having an element of luck to create completely unique scenarios that the player can share with friends, or laugh over in our local multiplayer system.

AUDIENCE, PLATFORM, AND MARKETING

Target Audience
- Younger players that might not have as much time and want a quick game to play by themselves or when relaxing with friends.
- People that might be seeking a skill-based challenge in order to pass time.

Platform
- A challenging, fast-paced experience.
- The ability to make each run unique according to the player's specifications.
- The ability for players to enjoy the experience with one other friend.

Feature comparison
Plenty of bullet hells in this genre either purely depend on the player's skill and don't actually make their character any stronger in the long run, or the item system is entirely based on luck, forcing players to have to specifically restart playthroughs of the game over and over again in order to get that perfect start. In our case, the game doesn't focus entirely on either one, giving the player the breathing room to not be punished for lacking in either, but also allowing them to optimize on both with successive playthroughs of the game.

THE GAME WORLD

Overview
The game world is the vast emptiness of space, where the only focus is the player and the enemies fighting in an intense dogfight.

Key locations
- The player's home planet, tentatively Planet M00R.
- The location of the enemy flagship, or the boss, tentatively C0-V1D.
- A forward base the player starts from (purely asset-based and implied, appears on title screen and player selection).

Travel
The player moves around in the world using either the WASD keys, or arrow keys for the second player. First player can use Q to use their basic ability and E to use their ultimate ability, second player can use CTRL and Shift keys respectively (these keys may be changed depending on what we decide is more convenient/ergonomic).

Scale
Macro scale, since the player is a top-down observer of a spaceship and a space battle.

Objects
- Player Ship
- Enemies
- Boss Enemy

- Bonus Pellets

- Harmful Pellets
- Level Power-ups

- ~~Obstacles~~

CAMERA

Overview
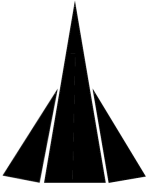
The camera will be looking at the full scene of the player and the other objects on screen, with the UI. The camera itself will not move, instead the background and other elements will move towards the bottom of the screen to make it seem like the player is progressing forward. Because of this, we'll be using a 2:3 aspect ratio for the game window (a portrait style). We chose this over a 9:16 ratio because we felt it was too tall, allowing the player to just hide at the bottom and a bit narrow.

GAME CHARACTERS

Overview

There will be three playable ships, each with slightly different stats, a basic ability which has some small bonus and recharges on a short time-based cooldown, and an ultimate ability which is charged by killing enemies. Enemies sometimes also occasionally drop pellets. The pellets have an equal chance to be a bonus pellet (which gives a big boost to your ultimate ability charge) or a harmful pellet (which takes away ultimate charge).
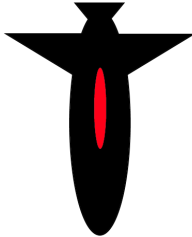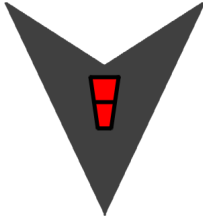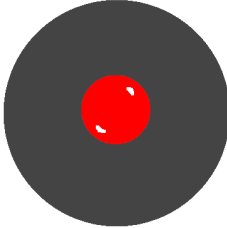
Character creation

	HP	Speed	Damage	Basic	Ultimate	Model
Lancer	Low	Med	High	Launches a missile, does moderate damage in a small AOE.	Start spraying bullets in a wide cone, inheriting item effects and damage.	
Vanguard	High	Low	Med	Small shield.	Strong damage reduction.	
Trailblazer	Med	High	Low	Does a small blink in the direction of the arrow key the player is holding down.	Briefly grants intangibility, ghosting through bullets.	

Enemies and monsters

All enemies behave similarly in that they have a set pattern of attack so the player can learn how to dodge them. There will be three different types of enemies, with each one having three different forms that progress in difficulty.

- First type of enemy will fly on to the screen and just sit there, constantly shooting its pattern of attack, and then if they're not killed after a certain period of time they'll fly off.
  - *Level 1*: Moderate HP, low damage. Shoots a single stream of bullets forward
  - *Level 2*: More HP, more damage. Shoots two streams of bullets
  - *Level 3*: More HP, more damage. Shoots three streams of bullets.
- Second type of enemy is one that just flies across the screen, maybe from one side to another.
  - *Level 1*: Low HP, moderate damage. Shoots bullets as they move across
  - *Level 2*: More damage. Shoots three bullets in a spread as they move
  - *Level 3*: More HP. Shoots five bullets in a spread as they move
- Third type of enemy is one that tracks the player as they move closer and closer to them. When it gets close enough, it explodes, dealing damage to the player.
  - *Level 1*: Low HP, low damage. Shoots a single bullet as they move towards the player.
  - *Level 2*: More damage. Shoots bullets faster.
  - *Level 3*: More damage. Shoots bullets faster.

Enemy	LEVEL	HP	Damage	Behavior	Design
Fighter	1/2/3	1/2/3	1/2/3 (Per Bullet)	Single/Double/Triple stream of bullets forward	
Chaser	1/2/3	1	1	Shoots one stream of bullets while approaching the player. Fire rate and speed increase as level increases.	
Disk	1/2/3	8/10/14	1/2/3 (Per Bullet)	Shoots bullets in all four cardinal directions while rotating. Fire rate increases as level increases.	

USER INTERFACE

Overview

Progression bar for the level on the right hand side of the screen, bottom left corner has your ship + how charged your abilities are, top left has all your items as icons. Remote possibility of having the HP bar on the player, maybe underneath the player model or curved around the side in like a semicircle, otherwise it'll be in the bottom left. Background of the game is a starfield which moves down, to give the impression of flying through space.

Here is a link to our wireframe diagram of each screen in the game:
https://docs.google.com/presentation/d/1AAMz6g4AEjehl_w-NBJHtUef7pFryiAHhnSECqh-ezs/edit?usp=sharing

Details

- Progression bar on the right side of the screen will tell the player how far they've progressed into the level and how much they have left by gradually filling up (from the bottom to the top).
- Top left of the screen displays the player's inventory by displaying the items they have as small icons. In multiplayer, another set of items will be grouped immediately underneath the first inventory.
- Player UI (Note: the following will either go on the bottom left of the screen, or will be tied to the character models themselves so the player doesn't need to divide their focus):
  - HP bar, green, shows how much HP the player has left.
  - Timer (in seconds), displays how long until the next basic ability use is available.
  - Charge bar, blue, right next to HP bar, shows charge for ultimate ability.
  - Either player model or a circle at the bottom left will flash when ultimate ability is used.

OBJECTS

Items

Items will be divided into the Common, Rare, Epic, and Special categories. Common items are typically just stat change items that give you minor benefits. Rare items are ones that give you a good positive, but might come with a negative effect as well. Epic items might add special effects or conditions that the player can use to their advantage. Special items are ship-specific items that modify your ship's abilities or play off your ship's strength. Common and rare items can stack, as they're mostly stat changes. (This section will definitely increase dramatically in size as the project progresses.)

- Common items (10 items):
    - A dud item.
    - + small amount of hp.
    - + small amount of shield at the beginning of every level.
    - + small boost to speed.
    - + small boost to fire rate.
    - + small boost to damage.
- Rare items (8 items):
    - + damage, - small amount of hp.
    - + fire rate, - small amount of speed.
    - + hp, - small amount of damage.
    - + speed, - small amount of .
- Epic items (5 items):
    - + shoots two streams of bullets.
    - + shield.
    - + piercing bullets (they can hit more than 1 enemy).
    - + explosive bullets.
    - + vampire bullet - you regain 1 health when you kill an enemy.
- Special items (3 items):
    - Lancer: normal bullets replaced with ROCKETS.
    - Vanguard: can store two charges of basic ability.
    - Trailblazer: basic ability clears bullets in a small AOE at end of blink

Power-Ups

Occasionally, aside from the bonus and harmful pellets listed above, enemies will drop power-ups. Power-ups are small stat boosts like common items, however they expire at the end of the level they were obtained.

MUSIC AND SOUNDS EFFECTS

Overview
We want to choose a good set of both music and sounds effects from when a player fires a bullet to when they use an ability or pick up a power-up or destroy an enemy. We feel having a good sound track and effects will help the player become more immersed in the game.

Details
Here are some further details on the music track and various sound effects we plan to incorporate.

Music tracks
The music would be something similar to what you would find in other bullet hell games such as the ones we mentioned before - The Touhou Project, Dondonpachi, etc.

Sound effects
- An explosion sound for when an enemy is destroyed.
- A sound for when a player fires a shot (must be relatively quiet so it doesn't annoy the player).
- Sounds for when the player:
    - Uses their basic ability.
    - Uses their special ability.
    - Picks up a power-up.
- Possible some sounds in the menus (i.e., when you press a button or when you switch from one menu to another).

SINGLE-PLAYER GAME

Details

Straightforward, singleplayer is a single spaceship progressing through each of the five levels. Items are selected at the end of each level.

Story

You're Ship Lord, a native of the planet M00R, attempting to find your way back home through hostile space after finishing a mission on a friendly forward base. The enemies (name to be determined) wish to catch you, as you're a very effective fighter that has years of experience and tactical knowledge. Your mission is to break through the enemy lines, destroy their flagship, and make your way home.

Victory conditions

Beat the fifth level of the game by defeating the boss there without losing all of your HP before getting there.

MULTIPLAYER GAME

Overview
In multiplayer, items and scores are independent. Each player picks a ship to play, and their charges and timers for their abilities are also independent.

Max players
2 players.

Servers
No - this is local multiplayer which we do intend to implement from the beginning.

Is the world persistent or not
When multiplayer is active, enemies will scale in health.

Saving and loading
Scores are the only thing that are saved or loaded, runs are independent.

Scores
Each level will track your score to add to a total score. Score is determined by the following (scale to be determined later, score tracked separately for two players):

- + enemies killed (* score multiplier while not taking damage).
- + bonus pellets collected.
- + abilities used.
- – damage taken.
- – harmful pellets collected.

RESOURCES & LINKS

Links to related resources

Design document based on this template:

HTTP://FORUMS.XNA.COM/FORUMS/T/229.ASPX

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: Elesvier Inc, 2008.

EXTRA MISCELLANEOUS STUFF

Overview

Here we just go over a couple of stretch goals/crazy ideas we had in mind that we would like to implement time-permitting.

Crazy ideas

- Having more diverse backgrounds rather than just stars.
  - We could have comets, planets, etc.
  - Could have a ship graveyard - the game can remember where you died and mark it with a destroyed ship as "motivation".
- Having a secret sixth level (clone wars).