

GAME DESIGN DOCUMENT

Linnunrata Invasion

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1. Executive Summary, Quick overview

“Linnunrata Invasion” is a turn-based game, and it is played on a 6x6 grid. The player is put to the shoes of a commander who leads his troops to defend the planet from an alien invasion. Player needs to manage the positioning of his different tanks to maximize their damage output, to buy more time for the planets civilians to flee from aliens. The game draws inspiration from “Into the breach” indie game by Subset games.

Trailer: <https://youtu.be/0eFa6ljioCc>

2. Target Audience

The game targets players that like challenging single-player turn based combat. Audience for these games is assumed to be mainly PC gamers who appreciate well put together indie games with a challenge. The game is heavily sci-fi themed with its art style and music and expects players to have some patience with the tactics of the game.

3. Main Characters

Player acts as a commander, deploying three units to fight against the endless stream of evil forces trying to reach the backline. The commander manages three different tanks:

7U-PU: Faster basic tank that can instantly kill one enemy from a single tile.

HU-PU: Stronger but slower tank that launches a harpoon that damages every tank in front of him.

LU-PU: Slower artillery tank that deals damage to a large “plus-shaped” area.

4. Main Features

4.1 Main mechanics

Shooting the enemies on a 6x6 board and dealing certain amounts of damage to them. The main challenge of the game is deciding the correct positioning of the tanks

so the player hold the enemies off as long as possible by destroying as many enemies as possible. The game loop from menu screen is the following:

- 1) Player enters the game from menu
- 2) Player (as a commander) deploys his units to the grid to the positions he wishes, by selecting them from the right-hand side of the game UI.
Commander can control three tanks: one basic tank (7U-PU), one harpoon tank (HU-PU) and one artillery tank (LU-PU).
- 3) Player can move the unit according to their movement ability by selecting them (clicking the unit). The artillery unit cannot move as long distances as the default one, making their positioning very important to maximize damage output.
- 4) Player can shoot with the unit according to the weapon limitations of the unit by selecting them and clicking "Aim" from bottom right.
- 5) After the players turn is over, "End turn" must be pressed and enemy AI makes their turn (meaning basically spawning more enemy units and moving the enemies closer to the civilian backline).
- 6) Player is trying to buy as much time as possible, and the game ends if a single enemy unit reaches the backline of the gameboard.
- 7) Player is then moved to a loss screen where they can see the score they reached and can move back to the menu screen.

4.2 Movement

Movement is grid based and counted by the movement ability of the deployed unit. The commander can move the tanks before or after using the tanks weaponry. Movement is calculated by comparing unit's current row/column position on the board to every other row/column pair in the board and checking if the absolute value of their subtraction is smaller than the tanks movement ability.

4.3 Physics

Since the game is completely point and click, there are no notable physics in a gameplay standpoint. Some of the game objects themselves have colliders to make them interactable, but none of the game objects are moved with physics by the player.

4.4 Multiplayer mode

The game is completely single player. Multiplayer would break the basic mechanics of the game since the players turn works fundamentally differently compared to the AI's turn.

5. Genre, Setting, Concept Art book

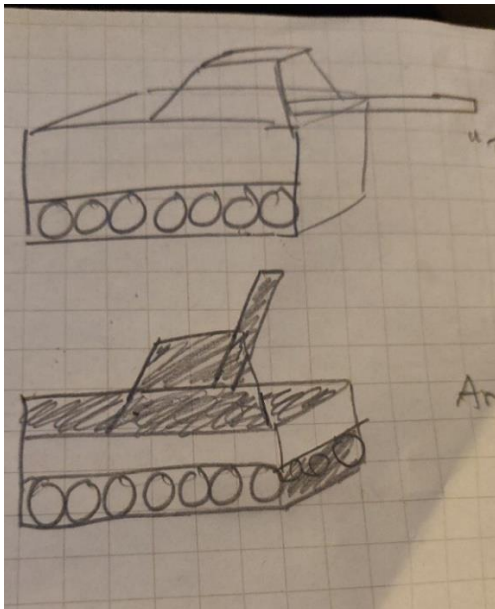


Figure 1. Concept art for the tanks (default on top, artillery on bottom)

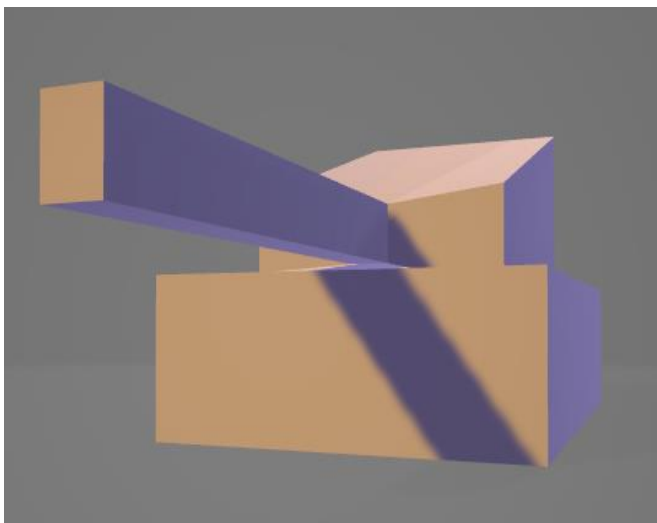


Figure 2. Default tank unit that the player controls before unity implementation created with blender.

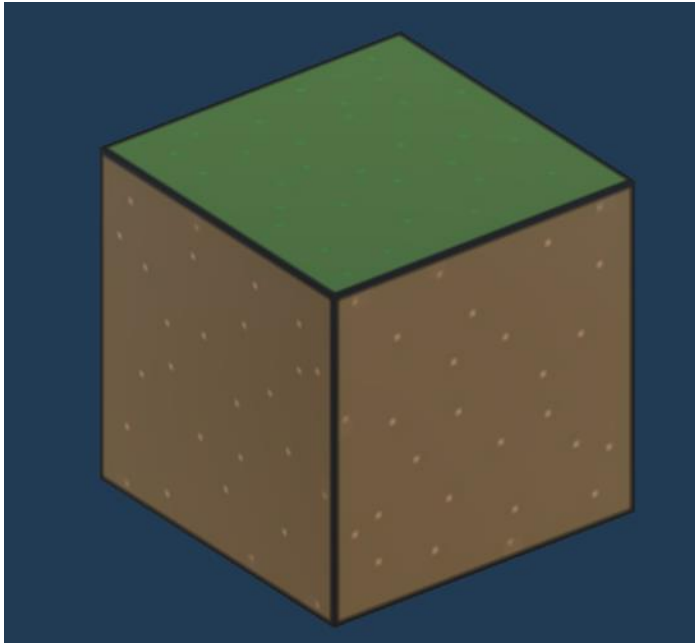


Figure 3. Single cell of the gameboards grid that consists of a cube and a quad on top of it so the colour of the top part of the tile can be changed for movement or shooting indications.

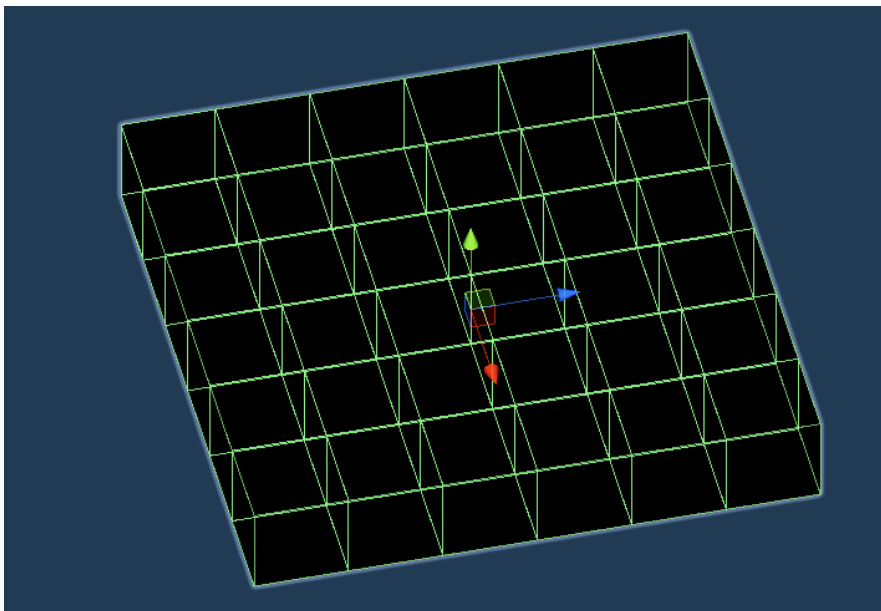


Figure 4. 6x6 gameboard that consists of 36 tile cells.

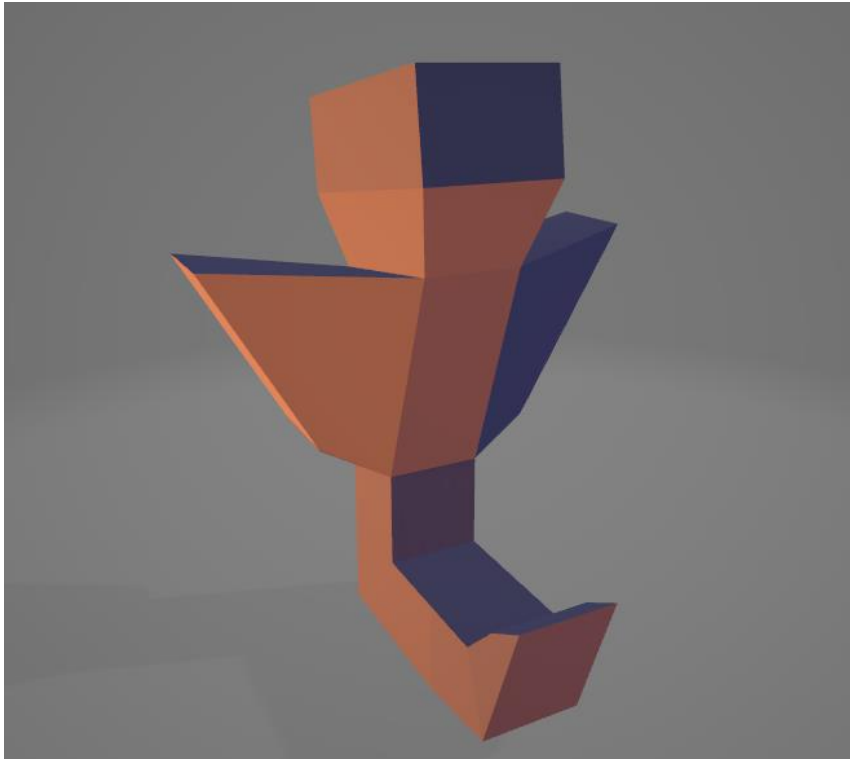


Figure 5. Enemy 3d-model created in blender.

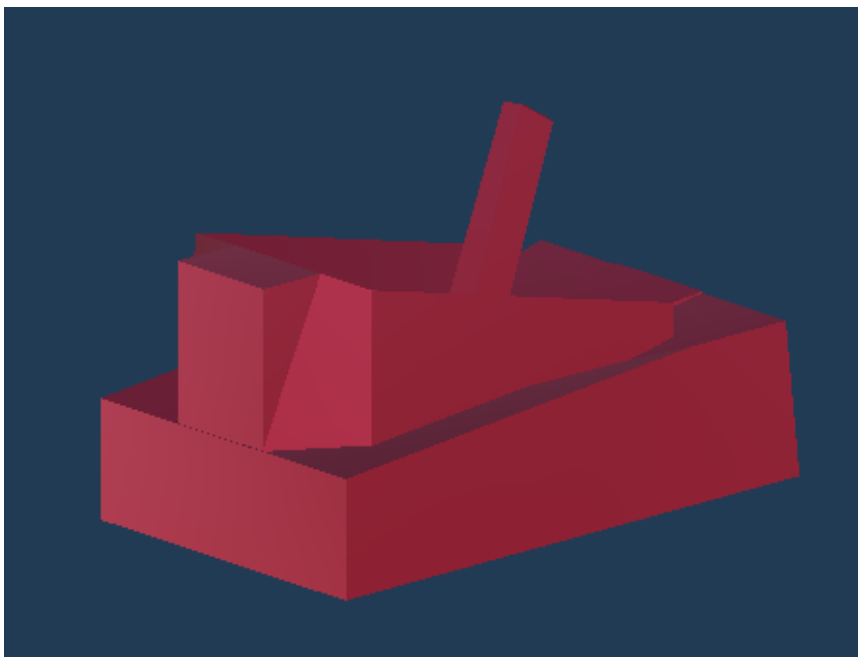


Figure 6. Artillery-unit implemented to unity (created with blender).

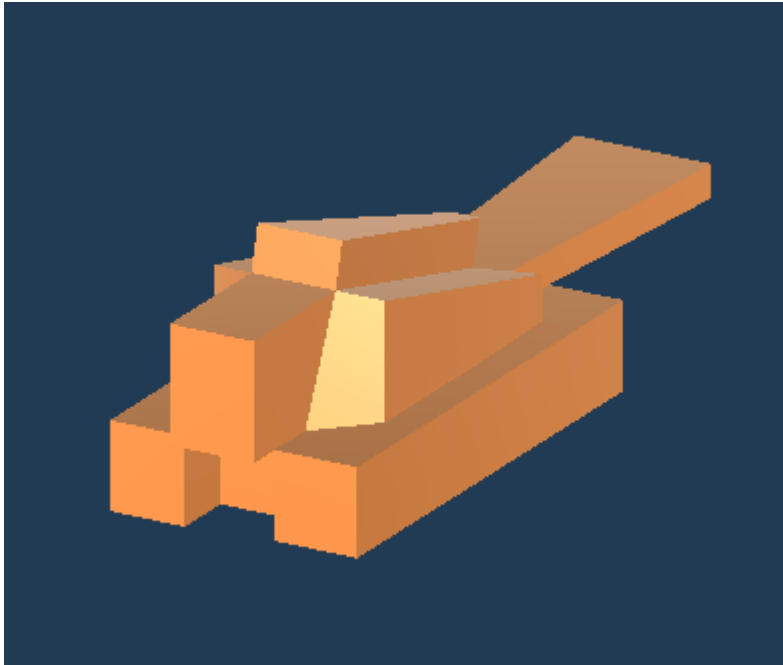


Figure 7. Harpoon-unit implemented to unity (created with blender).

6. Enemies, NPCs, Other objects

Flying wasp-like enemies are taking over the planet. Enemies only task is to reach the civilian backline of the commander and rinse the planet from human civilians. Random amounts of enemies spawn to the North-Eastern part of the gameboard to random positions on the column. Enemies approach the situation with arrogance since their forces are practically endless, and don't do any of their own attacks to the player units at this stage of the attack.

7. Story board, script*

Peace is broken by evil aliens, and only one man can keep the creatures back from the Linnunrata region of the planet Lepra. Commander, also known as "The Commander", operates a small anti-alien defender unit, that consists of three different deployable tanks. Commander is being called to help the planet Lepra buy more time to evacuate civilians before it is too late.

8. Technical definitions, Tech guide*

8.1 Platforms, versions

The game is developed for PC only. The game is created with Unity engine, and the 3D-models for the game are created with Blender by manipulating basic mesh in the “Edit mode”.

8.2 Control Scheme

The control scheme is completely dependent on mouse at launch time. Some hotkeys for aiming, deselecting units, or ending the turn are planned in future.

8.3 Limitations

Ability for the enemy AI to plan their attacks was planned to be a feature but creating a system for it was noticed to be a bit too daunting task before the launch date.

9. Business definitions*

9.1 In-app purchases

The game is a free open-source project and additional content added later will always be free.

9.2 DLC packs

Possibility to add more units for the commander to choose and deploy, and more different maps and challenges using the core mechanics. Additional content for the game will always be free.

10. Outsourced/Bought Assets

Starfield Skybox (Pulsar bytes)

<https://assetstore.unity.com/packages/2d/textures-materials/sky/starfield-skybox-92717>

Scifi Music Pack (Adam Bielecki)

<https://assetstore.unity.com/packages/audio/ambient/sci-fi/scifi-music-pack-100906>

Universe Sounds Free Pack

<https://assetstore.unity.com/packages/audio/ambient/sci-fi/universe-sounds-free-pack-118865>

Free Pixel Font – Thaleah (Tiny Worlds)

<https://assetstore.unity.com/packages/2d/fonts/free-pixel-font-thaleah-140059>