

Project Report

Part 6 - Final Release

STATIC

Computer Games Laboratory
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Team Well-Meaning Scorpion

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Changes since the last milestone

Difficulty, Balancing & Progression

The first big change after the last report was the addition of a difficulty progression system. Previously, a fixed number of enemies was spawned in each level and each time an enemy was killed, another one of the same type was respawned, keeping the enemy count constant. Now enemies are spawned in waves. The enemy count per wave and the time between waves depends on the progress of the player in the current attempt.

To stabilize the ammunition economy we made ammunition boxes adaptive. Previously they contained a fixed amount of bullets, now their content depends on the player's stock of ammunition and tires to keep this stock at around ten bullets. Similarly, the availability of first-aid-kits now depends on the current health of the player; more spawn when the player's health is low.

We added a lot more hazards to all levels but we now deactivate them randomly depending on the player's progression in the current attempt. In the first floor no hazards are active; in the last about half of the available hazards are active.

Finally, we increased the attack speed of the base enemies and their attack damage.

Design Changes

As we determined that reading clipboards was disrupting the player's flow, and they were continuously interrupted by attacking enemies, we moved the clipboards to a separate space where this cannot happen. This special level is spawned every ten floors and features no enemies. It is a place for the player to calm down, read some story, and restock before they continue.

Content & Variety

For the final release, we prepared additional hand-crafted levels with the goal of increasing the replay value of our game. These levels were equipped with props, items and hazards similarly to the previously designed levels. Furthermore, we designed and implemented additional hazards such the gas leak, radioactive barrel and the electric puddle. Not only did these hazards add more variety to our game but also addressed some potential game breaking strategies which could have been employed by the players before. Moreover, we rewrote our story to include multiple characters and to make the narrative more engaging.

Previously Missing Features

Previously our game was still lacking the final game-over sequence which we now added. It displays an image relating to the game's story and a short text snippet.

We also added the inverse game state: the player succeeds and reaches floor 0. We added a walkable level for this purpose which conveys the final story fragment through its environment. Afterwards we show the game's credits and move the player back to the main menu.

Fixes and Polish

We also fixed a number of bugs—some of them game breaking—and made improvements to other areas. Items are now highlighted when the player can interact with them. Many more areas of the game received sound effects. When reading clipboards some UI elements are hidden which were covering the text. We also added a credits screen.

Final Game Overview

Static is a roguelite first-person-shooter where the player attempts to flee from an underground facility while battling enemies with a unique mechanic.



The main menu of our game.

Gameplay

The player will need repeated attempts or 'runs' to win the game. Each run, the player starts at floor -30 with the goal of reaching floor 0, meanwhile they shoot enemies, manage resources, and deal various hazards. Central to our game is the behavior of the enemies: they cannot move when they are visible on the player's screen.

Player

The player's character is able to walk and run. They can shoot their gun, reload it, and interact with items. The player's GUI displays their health, ammunition, a crosshair, a help text for item interactions, and some effects when the player is healed or damaged.



The player's perspective.

Levels

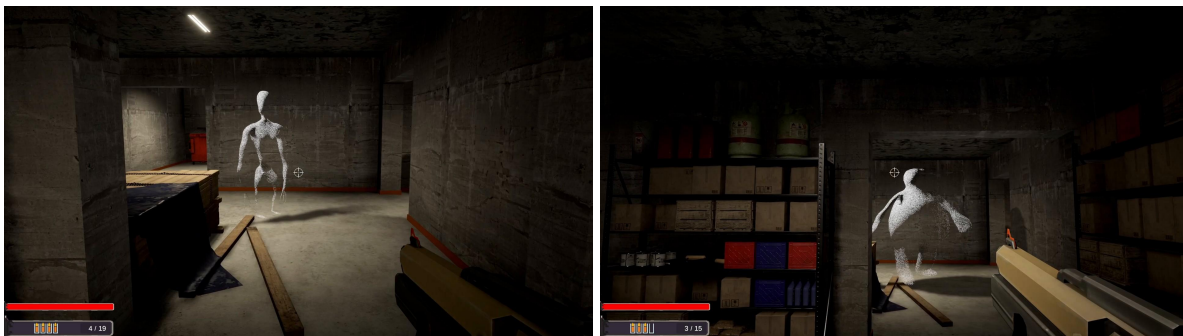
Our game features five different levels which are randomly connected to create the 30 floors. Each level features items such as ammo for the player's weapon and first-aid-kits for the player to heal themselves. Most levels have two exits, one of which is randomly selected to be open, the others are locked. Some levels require the player to find a key to unlock one of the exits.



Different locations in our levels.

Enemies

The game features two different enemy types: the 'Base' enemy which uses melee attacks, and the 'Explosive' enemy or 'Boomer' which explodes when the player comes near or shoots it. The enemies spawn in waves which increase in enemy count with every level while the pause between waves decreases.



Left: Base enemy. Right: Explosive enemy.

Hazards

In total the game features five different types of hazards.

1. A continuous flame, e.g., from a gas pipe which damages the player when they are touching it.
2. A radioactive barrel which also damages the player when nearby, here the damage increases with decreasing distance.
3. An electrified puddle which deals damage in intervals when the player is standing in it.

4. A gas leak which deals damage with increasing gas concentration in the air. The player can interact with the leak to fix it, after which the gas concentration will drop quickly.
5. Random power losses which turn off the lighting in the entire level. The enemies can then move again until the player's flashlight is automatically activated. After a short while the lights activate again.

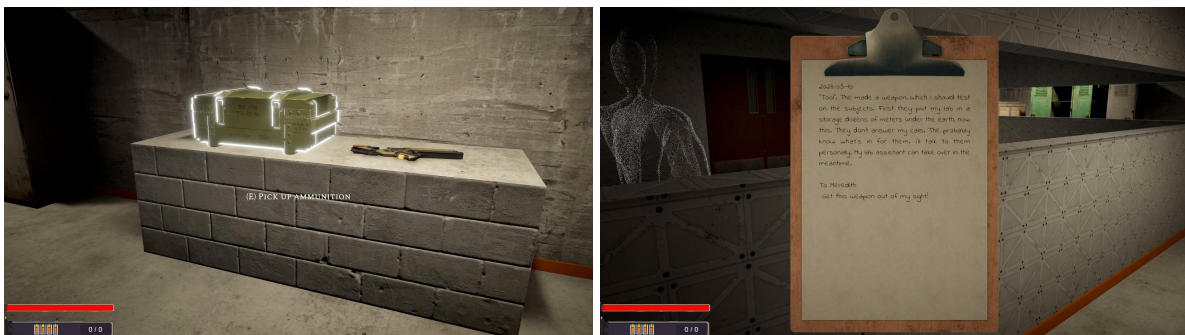
The hazards are spawned randomly at predetermined positions, with an increasing chance depending on how far the player has progressed.



Left: Power loss hazard with the player's flashlight. Right: Radioactive barrel.

Items

The player can interact with items. They receive ammunition from ammunition boxes; the amount depends on the player's current stock. First-aid-kits replenish the player's health; their availability depends on the player's current health. In specific levels the player can read clipboards which tell a part of our story.



Left: Ammunition box. Right: Clipboard.

Art

To increase the immersion in our game—and therefore the player's stress level—our game follows a naturalistic art direction. The levels and the props within both have a rough and worn out style, fitting to our theme and the horror genre. During the level design, we also utilized different materials for the same basic geometries in order to have different styles in between—or at times within—the levels and add further variety. The style of our enemies also blends well with the theme and makes a significant contribution to our game's aesthetic. In addition to our self-made enemy models, our enemies also utilize custom shading which fits with the title and its theme while also improving the overall aesthetics of the game.

Technology

Our game features settings where the player can adjust the view sensitivity and audio volumes. The game also tracks the player's progress and some statistics in savegames.

Post-Mortem

Initial design vs Implementation

Due to changes in the design after we started the project—as well as time constraints—we did not implement multiple aspects of our initial design. A couple of these were about having more variety between repeated runs, since we wanted our game to be a roguelite. We originally planned for some weapon variety but were unable to include them due to a lack of resources as they would require both 3D assets and animations, as well as different sounds. We also planned more enemy types but ultimately ran out of time as we focused on fixing the bugs and implementing higher priority features.

There were some cuts made due to time constraints stemming from our underestimating the tasks we already had and introducing new mechanics midway. We imagined a journal for the player to read up on previously read story snippets, however this did not make it into the final game either. We wanted to have better visual effects, like ragdolling, for enemy deaths but could not implement them in time. Initially we had imagined having an opening floor with menu functionality included in a diegetic way instead of a main menu. Early into development this idea was also scrapped.

Another set of changes were due to lacking foresight into clashing designs and needing to make changes after we realized the problem. We planned to implement mechanics to prevent the player from abusing our core mechanic by using walls to cover their back. Initially we imagined a type of enemy that moved through walls, which was later changed to an enemy that comes out of the walls. After their implementation we immediately realized that punishing the player for standing still clashes with our story snippets delivered through clipboards. While we made changes to the clipboards as well, we noticed the punishing mechanic was not necessary as the implemented hazards and the player's limited view cone were already effective enough in preventing the player from abusing the mentioned strategy.

In addition to some modifications to parts of the initial design, we also implemented some components which were not included in the initial design plans at all. Some of these additions were intended to improve the game content-wise, while others were intended to address some late discovered design issues. These changes include the collectible items (e.g. ammo, first-aid kits), the enemy wave logic and the safe rooms. The latter component was added with the goal of providing a safe space for the player to examine the clipboard items, which were previously spread through regular levels and mostly ignored during our playtesting sessions due to the action-filled nature of the game. By utilizing these so-called safe rooms, we were able to better incorporate the narrative into our game.

Project Schedule and Milestones

After handing in the first document we mostly ignored the schedule we set in it but still followed it sometimes through the interdependencies between tasks. Furthermore, we have experienced the positive effects of the different elements of the project structure on our development at times. We especially found the playtesting phase to be quite useful since we were able to detect and resolve the flaws of our game and make further refinements. However, we also think that the timing of this phase was not ideal and it could have been conducted earlier in order to leave more time to realize these fixes and improvements.

Personal Impression?

What was the biggest technical difficulty during the project?

The team decided to use Unity's "Universal Render Pipeline" for the project's scriptable render pipeline. The reason for that was mostly to experiment and understand how URP works. The following workflow proved to be quite challenging: The materials from many assets were not compatible with the URP and therefore had to be recreated.

Another problem the team was being confronted with was the integration of the narrative elements into the levels. Initially, the clipboards containing the stories were distributed throughout the level. This meant for the player to always pause reading the clipboard's content. However, while the player was busy reading the notes they were approached and attacked by the enemies. This was an unfair advantage for the enemies over the player. After we became aware of this problem, we came up with the following solution: Creating a so-called safe room every other level wherein the clipboards were located so that the player could read them undisturbed. After exiting the safe room, it would be impossible for the player to re-enter. This would prevent the user from seeking refuge multiple times within the level—as it would defeat the purpose of a rogue-like game.

What was your impression of working with the theme?

In our opinion the theme, Slenderman, felt very limited to be explored in a course like this. Since Slenderman originates from a creepypasta popularized by a short video game that spawned a following online as it became a part of internet culture for the early 2010s, it is both outdated and does not have much substance. The lack of both story details and mechanical depth made it very difficult to create something substantially different and connected to the theme at the same time. While the lack of detail is not a bad thing for a theme if it is more abstract than a creepy character with a cult following, Slenderman is both too specific and also lacks in depth to pick apart, analyze and explore in different ways. Unless we only take the look of the character and ignore its context it is almost impossible to distinguish the theme from the horror genre.

Do you think the theme enhanced your game, or would you have been happier with total freedom?

While the theme was integrated successfully, it did not necessarily enhance the game.

A theme that could be taken in many different directions while still providing connective tissue for all the projects in the semester would be a good middle ground. Slenderman, however, felt too specific to be an actual theme.

What would you do differently in your next game project?

During the later stages of the development, we agreed upon creating a pool of free tasks from which each team member could assign them freely instead of actively distributing the tasks. At the beginning of the project we started with the conservative task distribution style—however the latter one seemed to be more effective. It is also important to mention the importance of a well defined game design document: It prevents the deviation from the original idea and misunderstandings by providing strict design guidelines and concrete definitions. At the same time, we realized that even though our meetings were productive, they need to be planned more efficiently. For this it would make sense to prepare meeting agendas and maybe include fixed weekly dates.

What was your greatest success during the project?

During our initial idea pitch we summarized our goals in three points: First we wanted our mechanic to result in gameplay that encouraged thinking and solving how to go over obstacles almost like a puzzle. Second, similar to the previous idea, we wanted to differentiate our game from a regular action shooter using our core mechanic. Last we wanted to keep our players on their nerves as we wanted a mix between the horror and action genre, and we wanted our horror to come from the anticipation of danger coming around any corner instead of relying on jump scares.

On the first point we tried to adapt and tune our design to make it feel like obstacles are not totally random, this included things like trying different spawn mechanics and ultimately ended with our current wave system where the enemies would surround the player in waves instead of wandering randomly. We made resources like ammunition and healing adaptive to have more control over what a player should have when tackling each level which allowed us to create encounters that were fairer, unless we specifically want to push the player onto harder challenges such as in the harder levels. And with some amount of interaction—like exploding enemies killing other enemies—we present tools that award clever players to advance with more of their resources while preventing hoarding. Overall we delivered on a strategic feel without going out of the action territory. The second point is harder to comment on, but especially from our observations of playtesters and our own play sessions, the game is not that much different from a shooter game, even though it has its unique spin on enemy movement and of course the horror aspects.

On the third point we believe we have accomplished very well, and many aspects of the design contribute to this. As mentioned, enemies arriving in waves creates pockets of time where suspense builds up until you see the huge wave of enemies waiting for you. All of the sound cues aiding you to identify approaching enemies and nearby hazards work well to keep the player take a mental note that there is danger nearby without damaging them out of nowhere, and this feeling can build up. Obviously the elements of horror can affect each individual differently, however we believe we have successfully delivered on our goal of keeping the player tense at all times.

Are you happy with the final result of your project?

While we are content with the result of our game it would have been nice if we had more time to further enhance the game and work on extra content.

Do you consider the project a success?

We have achieved all of our important goals specified in the layered development descriptions with the exception of extra tasks. The theme was integrated successfully and so far the majority of the players enjoyed the game.

To what extent did you meet your project plan and milestones?

We could not really stick to the weekly schedule but we still completed the tasks before the milestone deadlines without much compromise.

Course Feedback

Having the presentation with the demo two full days after the deadline for the report meant that there was often a mismatch between the report for the milestone and the demo. Additionally, the course meetings being on Wednesdays creates problems for scheduling. Ideally, students want to meet immediately after the milestone but there is often no common free time slot during the week. Therefore students usually meet on the weekend, which means there is no progress made for two days. Together with the report deadline being essentially on the weekend this meant that there was only a week of effective working time between milestones which were two weeks apart. We suggest moving the course meeting to Friday, and the report deadline to right after the meeting so that last-minute changes can be included in the report.