

Team Smol

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SMOL - Project Chiron

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Prototype Description

The first issue our prototype had to tackle was how to abstract the real-time behavior of the final game for an analog prototype. For that purpose we decided to use a turn-based approach in which each turn corresponds to three seconds of real time. We used two players to prototype the game, with one player being responsible for the player character's actions and the other taking control of the enemies. We decided on a fairly simple level design in terms of level shape and obstacles, since we didn't want to focus on this part of the game for the prototype. The enemy player gets a certain amount of points, starting at 30 points. With these points the enemy player can buy units. These units can then be placed in an area of the level opposite to the player spawn. After each level the enemy player gets 10 additional points to buy units with. Traps were placed somewhat randomly in the level, however, always in such a way that the player character would not instantly be killed once the game began. The player proceeds to the next level once all enemies in a level are defeated. The game is over once the player character defeats the boss enemy in the final level or their health reaches zero.

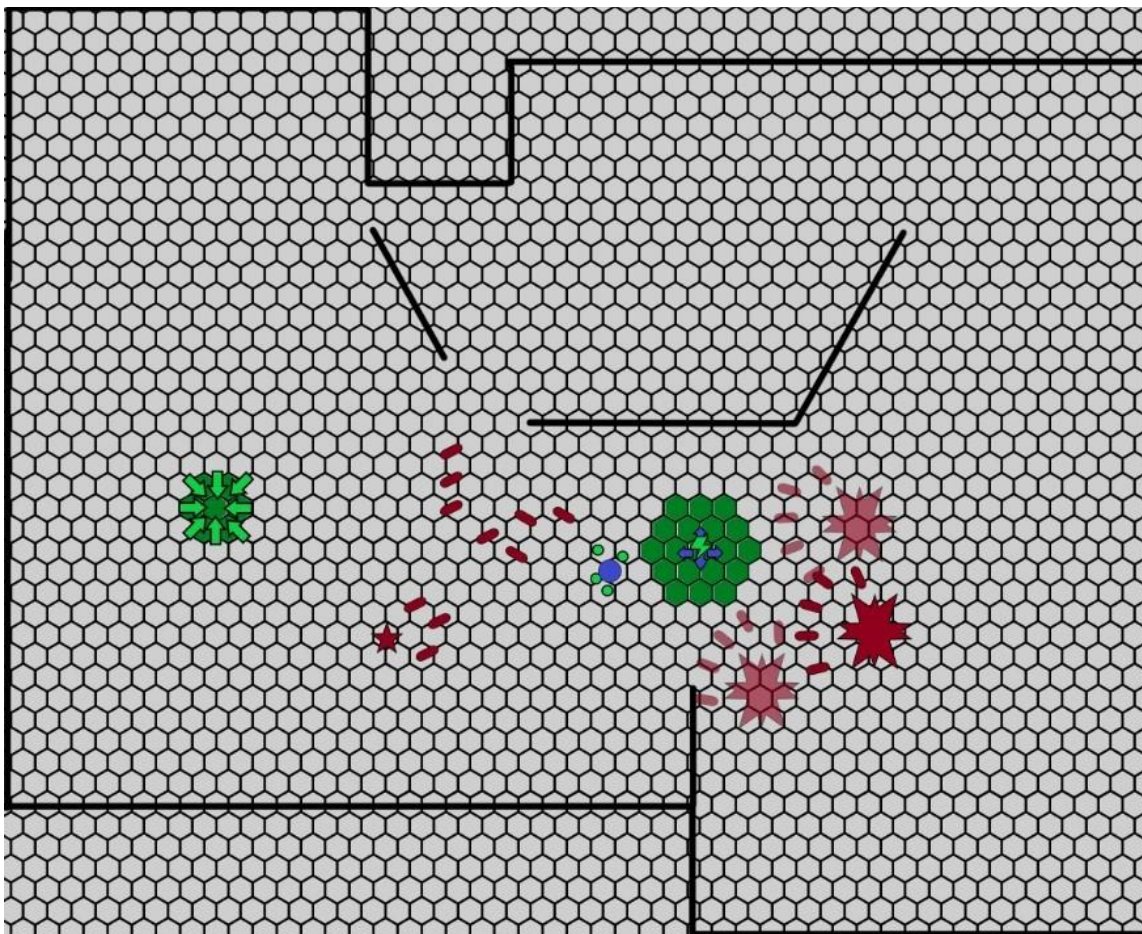
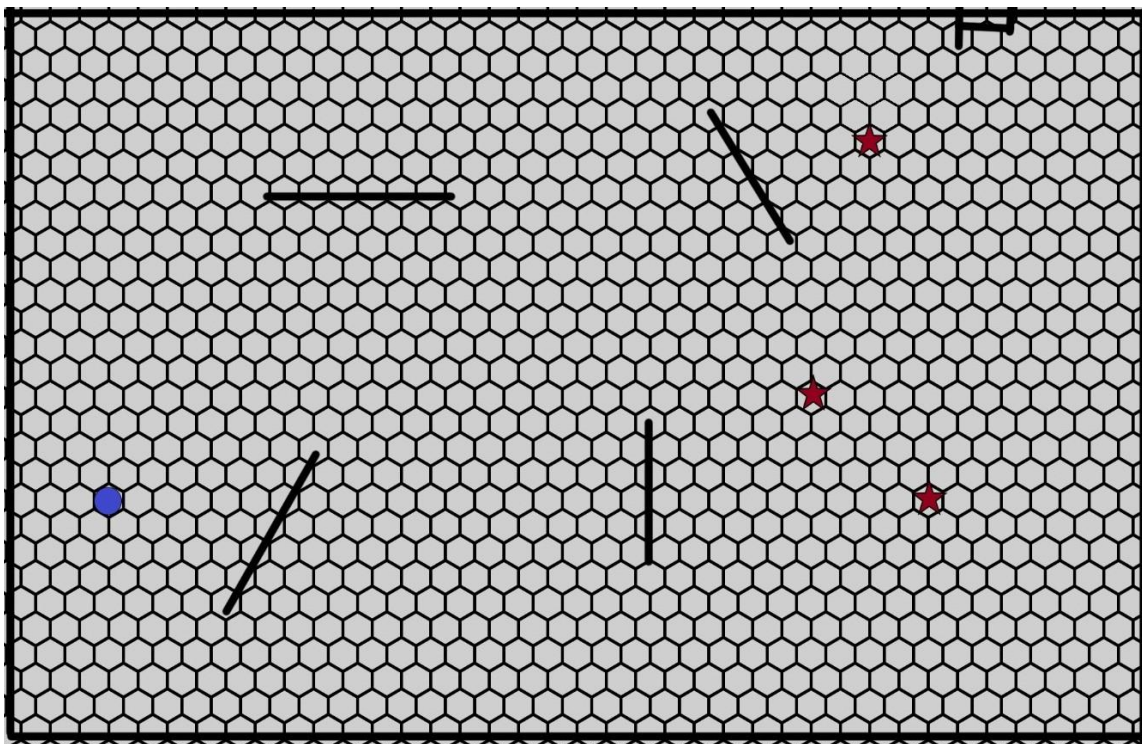
Since we opted for a turn-based approach for our prototype we also needed to somehow abstract our game space to make the prototype more manageable for the players. We decided to subdivide the space into a hexagonal grid. At the beginning of each turn we moved the bullets and after that the player character and the enemies took their turn simultaneously. During each turn every character can take a movement action as well as shoot bullets or use an ability.

We decided on the following numbers to calculate game behavior:

- Character movement: 3 tiles/turn
- Player (Blue circle):
 - Health: 100
 - Weapons
 - Pistol: 10 dmg per shot, 6 bullets, max. 2 shots/turn, 1 turn reload
 - Burst Rifle: 3x5 (15) dmg, 21 bullets, 1 burst/turn, 1 turn reload
 - Sniper: 30 dmg, 1 bullet, 1 shot/turn, 1 turn reload
 - Abilities
 - Dash: 3 tiles range, 2 turns cooldown
 - Teleport: 15 tiles range, 1 turn channel time, 3 turns cooldown
 - Slow field: 3 tile radius, 2 turns duration, 3 turns cooldown, x0.5 attack speed and movement for enemies
 - Hack: 1 turn duration, 3 turns cooldown
 - Charge: 1 turn channel, 2 turns duration, 3 turns cooldown
 - Stun: 1 turn duration, stun 3 enemies closest to player
- Enemies

- Submachine gun type enemy (red five-point star)
 - 20 health, 3 shots per turn, 20 dmg/bullet
 - 10 points cost
- Shotgun type enemy (red six-point star)
 - 45 health, 1 shot of 3 bullets per turn, 15 dmg/bullet
 - 20 points cost
- Rocket launcher type enemy (red eight-point star)
 - 65 health, on impact projectile deals 30 dmg in a two tile radius
 - 30 points cost
- Boss enemy (red ten-point star)
 - 300 health
 - shoots 5 bullets in a cone, 20 dmg/bullet
 - appears after five levels
 - can spawn two reflections of itself, which mirror it's behavior
- Traps:
 - Inversion field:
 - Player movement is randomized while in the field (dice roll)
 - Infection:
 - 2 tile radius, player gets 3 dmg/turn while in the field, afterwards 3 dmg/turn for 3 turns
 - Vortex:
 - 2 tile radius, pulls player to the middle, then throws them 5 tiles in a random direction (dice roll)

For a further description of player and enemy abilities we would like to refer to our game design document ("Formal Game Proposal").



Prototype Experience

The main problem with our prototype was that due to the nature of our game a substantial amount of pieces, especially bullets, had to be moved every turn. This slowed down the pace of the game substantially. In hindsight, it might have been preferable to abstract the bullets as well. Further, it was very easy to mess up turns due to the chaotic nature of our game. More often than not, we forgot to move certain bullets or even characters or we just weren't sure whether they had moved already or not. Overall, we have doubts whether our prototype accurately reflects the gameplay experience we are going for.

Nonetheless, the prototype was at times quite tense, because the enemy player tried to predict player movement in order to defeat the player character. The prototype also helped us to better understand our design as it forced us to think about aspects of the game we probably would have thought about a lot later and also showed us some things that would have become very problematic later on.

What we have learnt

The most important thing we realized during prototyping is probably that we need to reduce our scope if we want our final game to be a well-balanced experience. Although, some features may be relatively easy to add to the game, i.e. additional weapons are easily implemented after the first one, the effort required during playtesting and for balancing is going to grow exponentially.

Further, we realized that some of our planned mechanics were just boring and did not offer any interesting functionality. We were able to spice some of these mechanics up so that they contribute a little more to the gameplay experience. Others were just scrapped altogether to reduce the complexity of the game. We also have a first idea in what range player and enemy stats could lie, however, these will probably change a lot over the course of development.

We also realized that the enemy AI will be very important. The prototype was at times quite tense, because it was played by two humans. Our AI might need to be similarly challenging as a human who predicts and attempts to tactically engage the opposing player. Implementing this as an AI is certainly going to be a challenge.

Balancing of abilities will also be important. As it currently stands the abilities seemed very powerful. Depending on the AI this might make the game way too easy for the player.

Although we didn't focus on the level design aspect of our game in the prototype we learned that the level size will be important. In our prototype the levels were often too big

with a lot of empty space that was never used. This made the game feel calmer than we wanted.

Design Revisions

- For now, we are going to reduce the types of weapons the player can wield to one. Mechanically, there is not really a difference between the weapon types and as such the additional effort required to balance them can probably be spent elsewhere to a greater effect.
- A trap field (infection) where the player is damaged once they step on it is really boring. Instead, we decided to have the player chased by the infection for a fixed amount of time once they get too close. The damage is then applied if the infection catches the player character.
- In the prototype we did not test directed enemy movement with a random factor. We are not sure whether we want to keep that aspect of the game since the prototype worked without it.