

# Progress Report

In the implementation phase until the interim demo we archived almost the complete the Layer 2 and also started to implement some features of Layer 3.

## Character

We have implemented a controllable 3rd person character, which is able to cast different magic spells and can perform a roll and jump. The character has a health, stamina and a mana pool. The state of the character is shown as UI bars at the top left and spells are shown at the bottom of the screen. If his mana or stamina is depleted he is not able to cast any spells or can't roll anymore. Both mana and stamina replenish over time.

The player controls the character with the typical WASD and mouse control. WASD keys for movement, left mouse button to cast a spell, which then uses mana. The roll is performed by the Alt key and consumes stamina. The spells can be selected via the number keys. With the middle mouse button the player can open a ring menu and choose a trap type to place. Placing of the traps is not implemented yet.



The radial menu for selecting a trap.

## Traps

We have also started to implement some trap functionalities like the slowing effect of the enemies if they are walking through an oil field and the effect on the pathing due to the slow movement speed.



Enemy spider walking through an oil field.

## AI

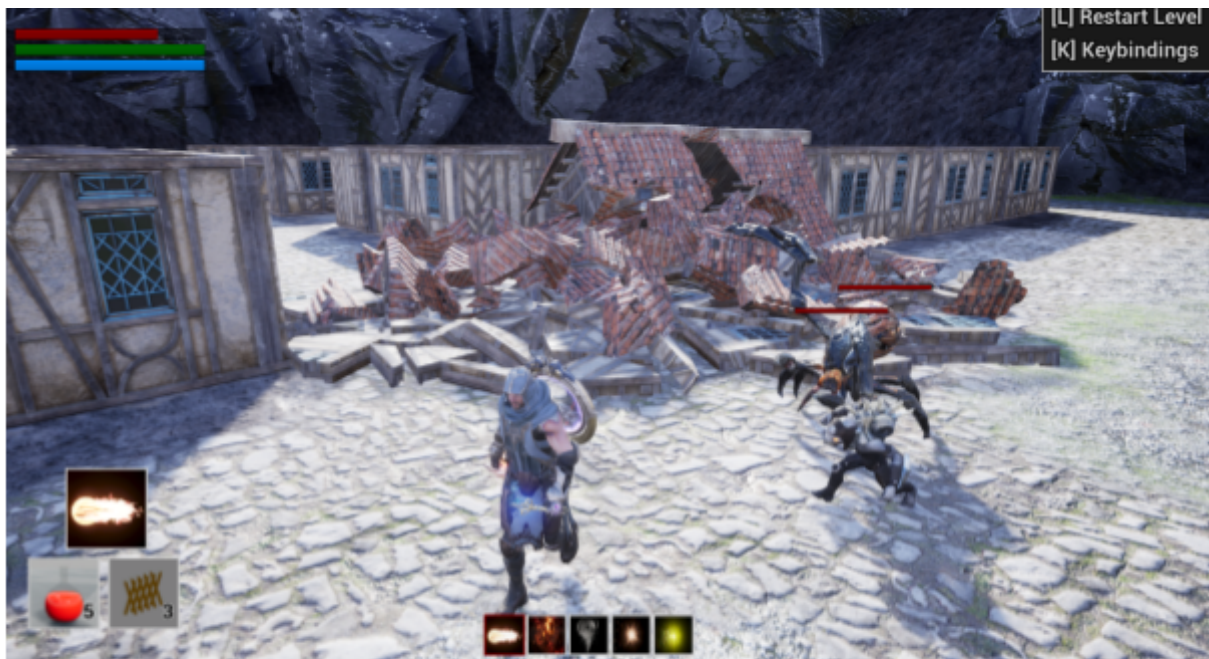
Two enemy types (spider and gruntling) have been added to the game with the fundamentals of the required AI system. The enemy AI first and foremost finds a path to the mystical power source (back of the village), runs towards it and tries to destroy it. The enemies have also a sight perception, which means that if they see the player character they start to approach and attack him instead of running to the core. When they lose sight they start advancing to the mystical power source again.



Fighting against a wave of damaged enemies.

## Destructible Environment

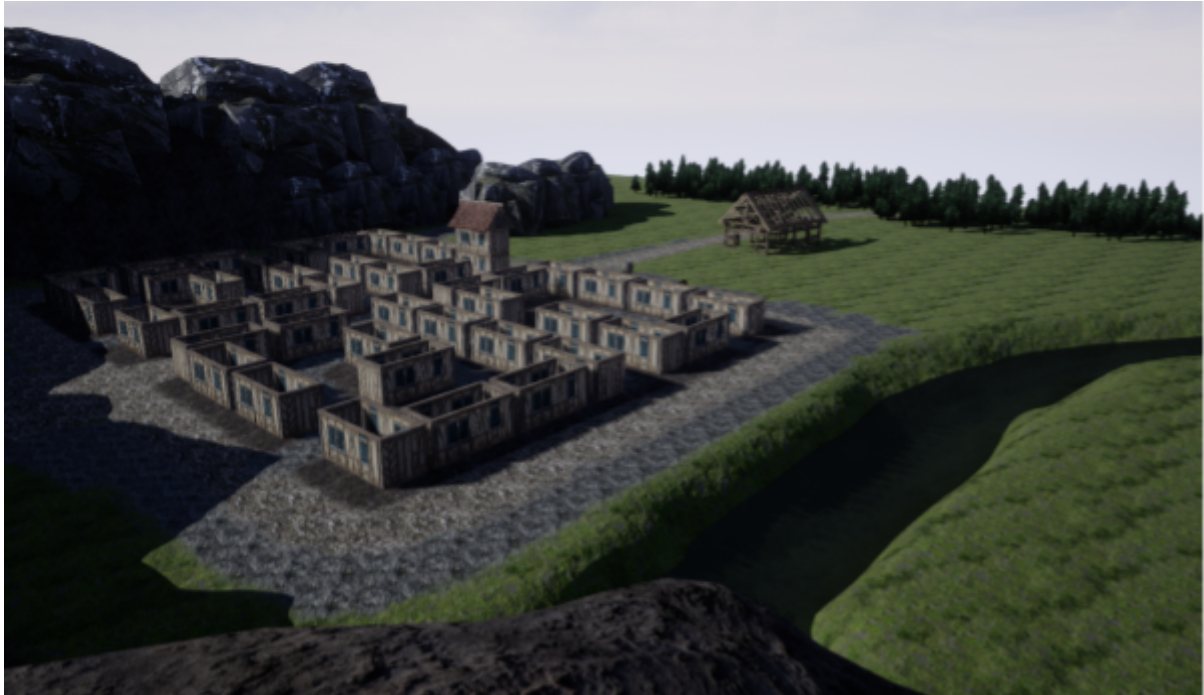
Up until now the basic house types are in the game and are destructible by shooting at them. Further the destroyed houses also interact with other destructions. The destruction of the houses can be controlled in such a way that you can destroy a building on the side it should collapse. The debris are rigid bodies which interact with other rigid bodies in the scene.



Destruction of a two story building.

# Level Design

The level design was already established during the prototype phase. During the implementation of the interim demo the level has been set up the same way in the game. Only the bridge over the river is missing. Due to the fact that our basic houses are not final and currently rather small we decided to wait with the final level design until all the houses are done.



Overview over the current state of the city.

# General Gameplay

In the current version of our game enemies are spawning in 3 different locations and have the main priority of destroying the mystical power source of our village. The enemies can see the player and also attack him if they do so. If they reach the mystical power source they attack it until destroyed, causing the player to lose the game. If the player is able to fight off all incoming enemy waves he has successfully defended the city and thus won the game. Currently the user can destroy houses to block roads to slow down enemies to make the game easier.

In order to inform about the currently selected skill or trap, the user has ui elements to do so.

# Challenges

The destruction of houses turns out to be a lot of work to get the settings right and achieve the desired results. Furthermore, the interaction of the destruction with the pathfinding of enemies is a challenging task which we have to solve.

Creating missing animations with no animator in the team turned out to be more time consuming than expected.

Another time consuming task was to build the Unreal Editor from source to have full support for the Chaos destruction system and compatibility of Chaos with the standard physics system of Unreal.

Luckily we expected these challenges and thus weren't forced to remove any of our previously stated goals.

# ToDo

The current destruction is not influencing the pathfinding. This is however a must have for the game to work and will be the primary goal for the alpha release. The next goals are also implementing the trap placement and trap functionalities and an advanced AI system with pathing and the ability to destroy obstacles/buildings. Additionally, we have to further develop the level.