

Project Cataclysm

Team 31 - Product Backlog

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Problem Statement

The base (often called “vanilla”) game of Minecraft has a variety of exploration, crafting, and building options. However, the combat and weapons systems of the game are severely lacking in variety and depth. In fact, the base game of Minecraft only contains 2 major weapon types, melee– with axes and swords, and ranged– with bows, tridents, and crossbows. Our project aims to enhance the bland combat system of vanilla Minecraft by adding unique weapons with interesting and varied combat properties.

Background Information:

Audience

Minecraft has existed since its release in 2011, despite its age, the combat system has evolved slowly throughout its lifespan. The last major change to the base combat system of Minecraft was in 2016, with the release of Minecraft version 1.9. Since then, little has changed in terms of user combat against AI-controlled enemies (typically called “mobs” in Minecraft– mobile entities). Since Project Cataclysm is a mod of the base-game, it will be targeted towards existing Minecraft players.

Similar Mods

There are several existing mods that aim to enhance the base combat system of Minecraft such as *Tinkers’ Construct*, *Spartan Weaponry*, and *Age of Weapons*. These existing mods modify combat-related sections of the game in different ways. *Tinkers’ Construct* adds advanced weapons-crafting, *Spartan Weaponry* adds a variety of unique melee weapons, and *Age of Weapons* adds a variety of military armaments and fantasy weapons.

Limitations

While there are many weapons mods that already exist, few implement a diverse selection of weapons, typically, these additions must be combined with other mods to offer a larger collection. Combining weapon mods often results in an overall imbalance of weapon-strength, because the mods were not designed to be used together. Our goal is to give players the option to use conventional weapons such as guns and missiles, but also the option to use elemental/magical/mystical weapons to utilize against opponents; all while making sure the weapons are relatively balanced in terms of combat prowess.

Functional Requirements:

1. As a player, I would like to be able to craft new weapons.
2. As a player, I would like to be able to craft new explosives.
3. As a player, I would like to be able to craft new defensive items.
4. As a player, I would like to be able to damage my opponent from a short-distance with a shotgun.
5. As a player, I would like to be able to damage my opponent with a rapid-fire machine gun.
6. As a player, I would like to be able to damage my opponent from a long-distance with a sniper rifle.
7. As a player, I would like to be able to damage my opponent with a pistol.
8. As a player, I would like to be able to damage my opponent and/or the landscape with a bazooka.
9. As a player, I would like to be able to damage my opponent with a gun that sprays bullets wildly.
10. As a player, I would like to be able to damage my opponent with a laser rifle/weapon.
11. As a player, I would like to be able to propel myself in any direction with a recoil gun.
12. As a player, I would like to be able to damage my opponent & the environment with a fire explosive.
13. As a player, I would like to be able to summon lightning with a lightning explosive.
14. As a player, I would like to be able to slow my opponent & spread snow/ice with an ice explosive.
15. As a player, I would like to be able to cause floods with a water explosive.

16. As a player, I would like to be able to plant trees and flowers with a nature explosive.
17. As a player, I would like to be able to damage my opponents with poison using a gas bomb.
18. As a player, I would like to be able blind my opponents with a light-bomb.
19. As a player, I would like to be able to throw my opponent & blocks into the sky with an air explosive.
20. As a player, I would like to be able to create hills with an earth explosive.
21. As a player, I would like to be able to damage my opponent and/or the landscape with a larger version of TNT.
22. As a player, I would like to be able to damage my opponent and/or the landscape with a nuclear/massive explosive.
23. As a player, I would like to be able to entrap my opponent with a black hole bomb.
24. As a player, I would like to be able to entrap my opponent with a web cage/web bomb.
25. As a player, I would like to drown/entrap my opponent with a water cage.
26. As a player, I would like to be able to hinder my opponent's movement with a stun bomb.
27. As a player, I would like to be able to damage my opponents and/or the landscape with a cluster bomb.
28. As a player, I would like to be able to disable and/or disarm explosives.
29. As a player, I would like to be able to launch missiles from a launching-platform with attached explosives from the mod.
30. As a player, I would like to be able to launch missiles from a launching-platform at specific coordinates.
31. As a player, I would like to be able to launch a missile from a launching-platform with a redstone signal.
32. As a player, I would like to be able to launch a missile from a launching-platform with remote control.
33. As a player, I would like to be able to protect myself with a personal shield that can only block certain weapons.
34. As a player, I would like to be able to place down a larger shield that is capable of blocking all weapons.
35. As a player, I would like to be able to use a weapon that can steal health from the opponent.

36. As a player, I would like to be able to craft weapons using a custom crafting table.
37. As a player, I would like to craft weapons through new specific item/block/mob interactions.
38. As a player, I would like for the mobs to drop new items upon being killed.
39. As a player, I would like to use magic to swap x/y/z coordinates with another player/mob.
40. As a player, I would like to use a magic weapon to summon a stone/dirt wall in front of my body.
41. As a player, I would like to use weapons from popular TV series and movies (if time allows).
42. As a player, I would like to be able to teleport between two places using a gun capable of placing two portals (if time allows).
43. As a player, I would like to be able to launch a missile from a launching-platform that follows my opponent (if time allows).
44. As a player, I would like to be able to launch a heat-seeking missile from a launching-platform that ignores “undead” enemies (if time allows).
45. As a player, I would like to be able to launch missiles of varying tiers using different tiered launching-platforms (if time allows).
46. As a player, I would like to be able to launch a missile at my opponent’s current location (in game-coordinates) (if time allows).
47. As a player, I would like to track players using radar (if time allows).
48. As a player, I would like to defeat my opponents with Purdue-related weaponry (if time allows).
49. As a player, I would like to battle Purdue Pete himself as a enemy-NPC (if time allows).

Non-Functional Requirements:

Toolchain and Compatibility

This game-addition will use the Fabric modding toolchain & loader. Fabric is lightweight and modular, and is easy to use for both developers and players. Having a mod toolchain & loader allows the use of multiple mods without breaking compatibility with each other. It also ensures that, as developers, we won’t need to modify the original game files. The mod will be compatible with commonly used performance mods.

Usability

The activation of each tool should be intuitive to the user. Crafting recipes will be recorded somewhere so that users will know how to make each tool. The materials used for each recipe should also be reasonably intuitive for the user.

Reliability

This addition to the base-game shouldn't/will not break any existing base-game features. The mod will not cause any crashes within reason (for example, setting off 1,000 explosives at once isn't reasonable); the mod will not cause any memory-leaks.

Efficiency

The mod will be able to run on a computer that meets the requirements for vanilla Minecraft, except for a slight adjustment to the required RAM. These requirements are as follows:

- CPU: Intel Core i3 3210 | AMD A8 7600 APU or equivalent
- RAM: 8 GB RAM
- GPU: Intel HD Graphics 4000 or AMD Radeon R5 series | NVIDIA GeForce 400 Series or AMD Radeon HD 7000 series
- OS: 64-bit Windows 7 or later