

Project Cataclysm

Team 31 - Sprint 2 Planning Document

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Sprint Overview

During this sprint, we hope to expand upon the base/parent objects that we have build for the mod. This will include expansion on the ExplosiveBlock class, Fabricator-block recipes, ranged weapons implementations, and further improving the functionalities and/or code-bases of those objects already implemented. We are much better prepared to implement more complicated features, so this sprint will focus on the addition of more technically-challenging user stories.

Scrum Master: Jackson Bounds

Meeting Plan: Tuesday 3:30pm, Thursday 7pm, Sunday 10:30am

Risk and Challenges:

Our team got a lot experience using the Fabric modding-toolchain from the previous sprint, and learned a lot about how Minecraft class objects interact with each other and the world. Because of this, we can more accurately assess the time it will take to implement certain features. With that being said, there is always a chance for user stories/features to take much longer than expected. Alongside that, the Fabric documentation can be lack-luster, so we will need to be cautious with our team-management.

Current Sprint Details

User Story 3b:

As a player, I would like to be able to summon lightning with a lightning explosive.

Sub Task	Description	Estimated Time	Owner
1	Create model and texture for inventory item and block	1 hr	Jackson Bounds
2	Create block & block entity, link to registry, and add to entity renderer	1 hr	Jackson Bounds
3	Add block-state, crafting recipe, translations, advancements, and model json	1 hr	Jackson Bounds
4	Create explode() method	3 hrs	Jackson Bounds
5	Test/debug ignition, explosion effect, crafting recipe, and player/mob damage	1 hr	Jackson Bounds

Acceptance Criteria:

- Given that the model and texture are properly implemented, the lightning explosive item/block will appear in-game with a unique texture.
- Given that the crafting recipe is implemented, the lightning explosive will be craftable with its own unique recipe.
- Given that the lightning explosive block is properly linked to the ExplosiveBlock parent object, the explosive will be able to be ignited with the flint & steel item (right-clicked on explosive) or an activated redstone signal.
- Given that the lightning explosive's explosion effect is properly implemented, the lightning explosive, a few seconds after ignition, will strike the ground with many lightning bolts.

User Story 3c:

As a player, I would like to be able to slow my opponent & spread snow/ice with an ice explosive.

Sub Task	Description	Estimated Time	Owner
1	Create model and texture for inventory item and block	1 hr	Jackson Bounds
2	Create block & block entity, link to registry, and add to entity renderer	1 hr	Jackson Bounds
3	Add block-state, crafting recipe, translations, advancements, and model json	1 hr	Jackson Bounds
4	Create explode() method	4 hrs	Jackson Bounds
5	Test/debug ignition, explosion effect, crafting recipe, and player/mob damage	1 hr	Jackson Bounds

Acceptance Criteria:.

- Given that the model and texture are properly implemented, the ice explosive item/block will appear in-game with a unique texture.
- Given that the crafting recipe is implemented, the ice explosive will be craftable with its own unique recipe.
- Given that the ice explosive block is properly linked to the ExplosiveBlock parent object, the explosive will be able to be ignited with the flint & steel item (right-clicked on explosive) or an activated redstone signal.
- Given that the ice explosive's explosion effect is properly implemented, the ice explosive, a few seconds after ignition, will spawn a large circle of snow and ice, and will apply the "slow-effect" to entities nearby.

User Story 3h:

As a player, I would like to be able to throw my opponent & blocks into the sky with an air explosive.

Sub Task	Description	Estimated Time	Owner
1	Create model and texture for inventory item and block	1 hr	Jackson Bounds
2	Create block & block entity, link to registry, and add to entity renderer	1 hr	Jackson Bounds
3	Add block-state, crafting recipe, translations, advancements, and model json	1 hr	Jackson Bounds
4	Create explode() method	8 hrs	Jackson Bounds
5	Test/debug ignition, explosion effect, crafting recipe, and player/mob damage	1 hr	Jackson Bounds

Acceptance Criteria:.

- Given that the model and texture are properly implemented, the air explosive item/block will appear in-game with a unique texture.
- Given that the crafting recipe is implemented, the air explosive will be craftable with its own unique recipe.
- Given that the air explosive block is properly linked to the ExplosiveBlock parent object, the explosive will be able to be ignited with the flint & steel item (right-clicked on explosive) or an activated redstone signal.
- Given that the air explosive's explosion effect is properly implemented, the air explosive, a few seconds after ignition, will propel nearby entities and blocks into the air.

User Story 6d:

As a player, I would like to be able to place down a larger shield that is capable of blocking all weapons.

Sub Task	Description	Estimated Time	Owner
1	Create model and texture for inventory item and block	1 hr	Eric Li
2	Create blocks placed by shield	1 hr	Eric Li
3	Add block-state, crafting recipe, translations, advancements, and model json	1 hr	Eric Li
4	Add functionality placing blocks around the player	3 hrs	Eric Li

Acceptance Criteria:

- Given that the model and texture are properly implemented, the protective barrier item/block will appear in-game with a unique texture.
- Given that the crafting recipe is implemented, the protective barrier will be craftable with its own unique recipe.
- Given that the protective barrier functionality is properly implemented, a sphere of protective blocks will appear around the player protecting from all damage

User Story 4a:

As a player, I would like to be able to launch missiles from a launching-platform with attached explosives from the mod.

Sub Task	Description	Estimated Time	Owner
1	Create model and texture for inventory item and launch platform	5 hr	Eric Li
2	Create interactive control panel with GUI	5 hr	Eric Li
3	Add block-state, crafting recipe, translations, advancements, and model json for launch platform	1 hr	Eric Li
4	Add functionality for launching missiles	3 hrs	Eric Li
5	Create missile entity with model and texture	3 hrs	Eric Li
6	Add recipe, translations, advancements, and model json for missile	1 hr	Eric Li

Acceptance Criteria:

- Given that the model and texture are properly implemented, the launch platform item/block will appear in-game with a unique texture.
- Given that the crafting recipe is implemented, the launch platform will be craftable with its own unique recipe.
- Given that the control panel is implemented, a custom GUI will be opened when interacting with it.
- Given that the missile entity is properly implemented, it will appear in-game with a unique texture and model

User Story 4b:

As a player, I would like to be able to launch missiles from a launching-platform at specific coordinates.

Sub Task	Description	Estimated Time	Owner
1	Add coordinate selection functionality in control panel GUI	3 hr	Eric Li
2	Add functionality for missile entity traveling to specified coordinates	3 hr	Eric Li
3	Add functionality for missile exploding when reaching destination	2 hr	Eric Li

Acceptance Criteria:

- Given that the coordinate selection is implemented correctly, the player will be able to enter coordinates into the control panel
- Given that the missile trajectory is implemented correctly, the missile will travel in an arc to the targeted location
- Given that the missile explosion is implemented correctly, the missile will explode when reaching its destination

User Story 2a:

As a player, I would like to be able to damage my opponent from a short-distance with a shotgun.

Sub Task	Description	Estimated Time	Owner
1	Create model and texture for inventory item and gun	2.5 hrs	Jackson Douglas
2	Create crafting recipe functionality	0.5 hrs	Jackson Douglas
3	Create gun functionality: shooting, reload, reload hunger cost	3 hrs	Jackson Douglas
4	Create functional ammo indicator tooltip	0.5 hrs	Jackson Douglas

Acceptance Criteria:

- Given that the crafting recipe is implemented, the shotgun will be craftable with its own unique recipe.
- Given that the model and texture are properly implemented, the shotgun will appear in-game with a unique texture.
- Given that the shotgun is implemented properly, it shoots one bullet with a long pause. The bullet does not travel more than 8 blocks
- Given that the shotgun is implemented properly, when a user shoots at an enemy, the enemy receives the correct amount of damage and the correct damage indicator occurs.
- Given that the ammo indicator tooltip is implemented properly, the user will be able to see the remaining ammo in the clip on their HUD.

User Story 2h:

As a player, I would like to be able to propel myself in any direction with a recoil gun.

Sub Task	Description	Estimated Time	Owner
1	Create model and texture for inventory item and gun	2.5 hrs	Jackson Douglas
2	Create crafting recipe functionality	0.5 hrs	Jackson Douglas
3	Create gun functionality: propel effect, reload, hunger cost	7 hrs	Jackson Douglas
4	Create functional indicator tooltip	0.5 hrs	Jackson Douglas

Acceptance Criteria:

- Given that the crafting recipe is implemented, the recoil gun will be craftable with its own unique recipe.
- Given that the model and texture are properly implemented, the recoil gun will appear in-game with a unique texture.
- Given that the recoil gun is implemented properly, it shoots a shot that propels you opposite to the direction that the player is facing.
- Given that the ammo indicator tooltip is implemented properly, the user will be able to see the remaining ammo in the clip on their HUD.

User Story 3n:

As a player, I would like to drown/entrap my opponent with a water cage spell.

Sub Task	Description	Estimated Time	Owner
1	Create model and texture for inventory item and spell	2.5 hrs	Jackson Douglas
2	Create crafting recipe functionality	0.5 hrs	Jackson Douglas
3	Create spell functionality w/ spell switching ability	10 hrs	Jackson Douglas

Acceptance Criteria:

- Given that the crafting recipe is implemented, the wand will be craftable with its own unique recipe.
- Given that the model and texture are properly implemented, the item/block will appear in-game with a unique texture.
- Given that the water cage spell is implemented properly, it will entrap the enemy in a water cage.

User Story 3g:

As a player, I would like to be able blind my opponents with a light-bomb.

Sub Task	Description	Estimated Time	Owner
1	Create model and texture for inventory item and block	1 hr	Ryan Chang
2	Create block & block entity, link to registry, and add to entity renderer	1 hr	Ryan Chang
3	Add block-state, crafting recipe, translations, advancements, and model json	1 hr	Ryan Chang
4	Create explode() method	6 hrs	Ryan Chang
5	Test/debug ignition, explosion effect, crafting recipe, and player/mob damage	1 hr	Ryan Chang

Acceptance Criteria:

- Given that the model and texture are properly implemented, the light-bomb explosive item/block will appear in-game with a unique texture.
- Given that the crafting recipe is implemented, the light-bomb explosive will be craftable with its own unique recipe.
- Given that the light-bomb explosive block is properly linked to the ExplosiveBlock parent object, the explosive will be able to be ignited with the flint & steel item (right-clicked on explosive) or an activated redstone signal.
- Given that the light-bomb explosive's explosion effect is properly implemented, the light-bomb explosive, a few seconds after ignition, will blind players in the vicinity of the explosion.

User Story 3m: As a player, I would like to be able to entrap my opponent with a web spell.

Sub Task	Description	Estimated Time	Owner
1	Create spell switch functionality for all spells on a single wand	3.5 hr	Ryan Chang
2	Add reach attribute	1 hr	Ryan Chang
3	Create spell functionality: effect, cooldown	3.5 hr	Ryan Chang
4	Create spell notification that tells you what spell is selected	2 hrs	Ryan Chang

Acceptance Criteria:

- Given that the model and texture are properly implemented, the item/block will appear in-game with a unique texture.
- Given that the crafting recipe is implemented, the wand will be craftable with its own unique recipe.
- Given that the “web” spell is implemented correctly, when the user uses it on a target, the target will be entrapped in a web cage.

User Story 5d: As a player, I would like to blink to a location using magic.

Sub Task	Description	Estimated Time	Owner
1	Create spell switch functionality for all spells on a single wand	3.5 hr	Ryan Chang
2	Add reach attribute	1 hr	Ryan Chang
3	Create spell functionality: effect, cooldown	3.5 hr	Ryan Chang
4	Create spell notification that tells you what spell is selected	2 hrs	Ryan Chang

Acceptance Criteria:

- Given that the model and texture are properly implemented, the item/block will appear in-game with a unique texture.
- Given that the crafting recipe is implemented, the wand will be craftable with its own unique recipe.
- Given that the “blink” spell is implemented correctly, when the user uses it, the target will teleport to the selected block.

Remaining Backlog

Functional Requirements

1. General

- ~~a. As a player, I would like to be able to craft new weapons.~~
- ~~b. As a player, I would like to be able to craft new explosives.~~
- ~~c. As a player, I would like to be able to craft new defensive items.~~
- ~~d. As a player, I would like to be able to craft weapons using a custom crafting table.~~
- ~~e. As a player, I would like to craft weapons through new specific item/block/mob interactions.~~

2. Firearms

- a. As a player, I would like to be able to damage my opponent from a short-distance with a shotgun.
- ~~b. As a player, I would like to be able to damage my opponent with a rapid-fire machine gun.~~
- ~~c. As a player, I would like to be able to damage my opponent from a long-distance with a sniper rifle.~~
- ~~d. As a player, I would like to be able to damage my opponent with a pistol.~~
- e. As a player, I would like to be able to damage my opponent and/or the landscape with a bazooka.
- f. As a player, I would like to be able to damage my opponent with a gun that sprays bullets wildly.
- g. As a player, I would like to be able to damage my opponent with a laser rifle/weapon.
- h. As a player, I would like to be able to propel myself in any direction with a recoil gun.

3. Explosives

- ~~a. As a player, I would like to be able to damage my opponent & the environment with a fire explosive.~~
- b. As a player, I would like to be able to summon lightning with a lightning explosive.

- c. As a player, I would like to be able to slow my opponent & spread snow/ice with an ice explosive.
- d. As a player, I would like to be able to cause floods with a water explosive.
- e. As a player, I would like to be able to plant trees and flowers with a nature explosive.
- f. As a player, I would like to be able to damage my opponents with poison using a gas bomb.
- g. As a player, I would like to be able blind my opponents with a light-bomb.
- h. As a player, I would like to be able to throw my opponent & blocks into the sky with an air explosive.
- i. As a player, I would like to be able to create hills with an earth explosive.
- ~~j. As a player, I would like to be able to damage my opponent and/or the landscape with a larger version of TNT.~~
- ~~k. As a player, I would like to be able to damage my opponent and/or the landscape with a nuclear/massive explosive.~~
- l. As a player, I would like to be able to entrap my opponent with a black hole bomb.
- m. As a player, I would like to be able to entrap my opponent with a web spell.
- n. As a player, I would like to drown/entrap my opponent with a water cage spell.
- o. As a player, I would like to be able to hinder my opponent's movement with a stun bomb.
- p. As a player, I would like to be able to damage my opponents and/or the landscape with a cluster bomb.
- q. As a player, I would like to be able to disable and/or disarm explosives.

4. Missiles

- a. As a player, I would like to be able to launch missiles from a launching-platform with attached explosives from the mod.
 - b. As a player, I would like to be able to launch missiles from a launching-platform at specific coordinates.
 - c. As a player, I would like to be able to launch a missile from a launching-platform with a redstone signal.
 - d. As a player, I would like to be able to launch a missile from a launching-platform with remote control.
 - e. As a player, I would like to be able to launch a missile from a launching-platform that follows my opponent (if time allows).
 - f. 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).
 - g. As a player, I would like to be able to launch missiles of varying tiers using different tiered launching-platforms (if time allows).
 - h. 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).
5. Magic
- ~~a. As a player, I would like to use magic to swap x/y/z coordinates with another player/mob.~~
 - ~~b. As a player, I would like to use a magic weapon to summon a stone/dirt wall in front of my body.~~
 - ~~c. As a player, I would like to be able to use magic that can steal health from the opponent.~~
 - d. As a player, I would like to blink to a location using magic.
 - e. As a player, I would like to use weapons from popular TV series and movies (if time allows).
 - f. 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).
6. Miscellaneous

- a. ~~As a player, I would like for mobs to drop new items upon being killed.~~
- b. ~~As a player, I would like to find and mine a new ore block for a new crafting material~~
- e. ~~As a player, I would like to be able to protect myself with a personal shield that can only block certain weapons.~~
- d. As a player, I would like to be able to place down a larger shield that is capable of blocking all weapons.
- e. As a player, I would like to track players using radar (if time allows).]
- f. As a player, I would like to defeat my opponents with Purdue-related weaponry (if time allows).
- g. As a player, I would like to battle Purdue Pete himself as a enemy-NPC (if time allows).