Project Cataclysm

Team 31 - Sprint 3 Planning Document

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Sprint Overview

During this sprint, we hope to further expand on the previous 2 sprints base-object and base-item code bases. We now deeply understand the Fabric modding toolchain, and implementation of items/blocks/entities has become significantly simpler now that we know what we are doing. Because of this, during this final sprint we hope to finish the items on the remaining backlog, and potentially improve existing items/blocks, as well as ensure that our code is clean and readable.

Scrum Master: Jackson Bounds

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

Risk and Challenges:

There is still a risk of under/over-estimating the time required for certain user stories. Despite our efforts, it is difficult to predict the time required for many features to be implemented in Minecraft. Regardless, we have become more adept at time estimation, so this challenge will be less impactful than in previous sprints.

Current Sprint Details

User Story 3d:
As a player, I would like to be able to cause floods with a water 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 hr	Jackson Bounds
5	Test/debug ignition, explosion effect, crafting recipe	1 hr	Jackson Bounds

Acceptance Criteria:.
- Given that the model and texture are properly implemented, the water explosive item/block will appear in-game with a unique texture.
- Given that the crafting recipe is implemented, the water explosive will be craftable with its own unique recipe.
- Given that the water explosive's explosion effect is properly implemented, the water explosive, a few seconds after ignition, will flood the area with water and sea-creatures.

User Story 3e:

As a player, I would like to be able to plant trees and flowers with a nature 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 nature explosive item/block will appear in-game with a unique texture.
- Given that the crafting recipe is implemented, the nature explosive will be craftable with its own unique recipe.
- Given that the nature explosive's explosion effect is properly implemented, the nature explosive, a few seconds after ignition, will plant various flowers, beehives, and spawn bee entities.

User Story 3o:

As a player, I would like to be able to damage my opponents and/or
the landscape with a cluster bomb

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 cluster explosive item/block will appear in-game with a unique texture.
- Given that the crafting recipe is implemented, the cluster explosive will be craftable with its own unique recipe.
- Given that the cluster explosive's explosion effect is properly implemented, the cluster explosive, a few seconds after ignition, will shoot out smaller explosive entities that have their own tiny explosion.

User Story 3p:

As a player, I would like to be able to disable and/or disarm explosives.

Sub Task	Description	Estimated Time	Owner
1	Create model and texture for inventory item	1 hr	Jackson Bounds
2	Add block-state, crafting recipe, translations, advancements, and model json	1 hr	Jackson Bounds
3	Create disarm() method	5 hrs	Jackson Bounds
4	Test/debug explosive entity removal	1 hr	Jackson Bounds

Acceptance Criteria:.
- Given that the model and texture are properly implemented, the disarm remote will appear with a unique model/texture.
- Given that the crafting recipe is implemented, the disarm remote will be craftable with its own unique recipe.
- Given that the disarm remote's disarm() method is properly implemented, when the disarm remote is right-clicked on a "primed" explosive entity, it will remove the explosive entity and the entity will not explode.

User Story 3f:
As a player, I would like to be able poison my opponents with a
gas-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	3 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 gas-bomb explosive item/block will appear in-game with a unique texture.
- Given that the crafting recipe is implemented, the gas-bomb explosive will be craftable with its own unique recipe.
- Given that the gas-bomb explosive's explosion effect is properly implemented, the gas-bomb explosive, a few seconds after ignition, will poison players in the vicinity of the explosion.

User Story 3i:

As a player, I would like to create hills with an earth-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	3 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 earth-bomb explosive item/block will appear in-game with a unique texture.
- Given that the crafting recipe is implemented, the earth-bomb explosive will be craftable with its own unique recipe.
- Given that the earth-bomb explosive's explosion effect is properly implemented, the earth-bomb explosive, a few seconds after ignition, will create hills of earth and stone.

User Story 3l:

As a player, I would like to be able to entrap my opponent with a black hole 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	3 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 black hole-bomb explosive item/block will appear in-game with a unique texture.
- Given that the crafting recipe is implemented, the black hole-bomb explosive will be craftable with its own unique recipe.
- Given that the black hole-bomb explosive's explosion effect is properly implemented, the black hole-bomb explosive, a few seconds after ignition, will suck players into its center.

User Story 5e:

As a player, I would like to pull targets closer to me with a pull 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 "pull" spell is implemented correctly, when the user uses it on a target, the target will be pulled towards the user.

User Story 2e:

As a player, I would like to be able to damage my opponent and/or the landscape with a bazooka.

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

Acceptance Criteria:

- Given that the crafting recipe is implemented, the bazooka will be craftable with its own unique recipe.
- Given that the model and texture are properly implemented, the bazooka will appear in-game with a unique texture.
- Given that the bazooka is implemented properly, it shoots an explosive that damages the opponent and the surrounding area.
- 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 2f:

As a player, I would like to be able to damage my opponent with a gun that sprays bullets wildly.

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

Acceptance Criteria:

- Given that the crafting recipe is implemented, the gun will be craftable with its own unique recipe.
- Given that the model and texture are properly implemented, the gun will appear in-game with a unique texture.
- Given that the gun is implemented properly, it shoots bullets that spray out of the weapon in random direction from the player within their FOV.
- 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 2g:

As a player, I would like to be able to push my opponent away with an almighty push spell.

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

Acceptance Criteria:
- Given that the crafting recipe is implemented, the wand w/ the spell 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 almighty push is implemented properly, it will push the enemy backwards.

User Story 5f:

As a player, I would like to be able to teleport between two places using a gun capable of placing two portals.

Sub Task	Description	Estimated Time	Owner
1	Create model and texture for inventory item and spell	2 hrs	Jackson Douglas
2	Create crafting recipe functionality	0.5 hrs	Jackson Douglas
3	Portal rendering on blocks	3 hrs	Jackson Douglas
4	Functionality for placing portals	3 hrs	Jackson Douglas
5	Functionality of the teleporting	3 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 portal spell is implemented properly, it will allow for a player to teleport between two places in the world.

User Story 4c:

As a player, I would like to be able to launch a missile from a launching-platform with a redstone signal.

Sub Task	Description	Estimated Time	Owner
1	Convert Control Panel block to a Block Entity	4 hrs	Eric Li
2	Create check for redstone power	2 hr	Eric Li

Acceptance Criteria:
- Given that the Control Panel block is properly converted to a Block Entity, the Control Panel will be able to save information previously entered into the GUI.
- Given that the redstone power check is implemented correctly, the missile will launch when the control panel receives a redstone signal and all required data is saved in the block.
- Given that the redstone power check is implemented correctly, the missile will NOT launch when the control panel receives a redstone signal and missile parts are not present.

User Story 4d:

As a player, I would like to be able to launch a missile from a launching-platform with remote control.

Sub Task	Description	Estimated Time	Owner
1	Create model and texture for remote control	1 hr	Eric Li
2	Add functionality to sync with launch platform	3 hrs	Eric Li
3	Create GUI for remote control	4 hrs	Eric Li
4	Add remote launching from remote control	4 hrs	Eric Li
5	Add crafting recipes for remote control	1 hr	Eric Li

Acceptance Criteria:
- Given that the crafting recipe is implemented, the remote control will be craftable with its own unique recipe.
- Given that the model and texture are properly implemented, the remote control item will appear in-game with a unique texture.
- Given that the GUI is implemented correctly, the remote control will open a GUI when right clicked.
- Given syncing functionality is implemented correctly, the remote control will sync with a launch platform when right clicked while looking at the control panel.
- Given remote launching is implemented correctly, missiles will be able to be launched from a distance using the remote control.

User Story 4d:

As a player, I would like to be able to launch a missile at my opponent's current location (in game-coordinates).

Sub Task	Description	Estimated Time	Owner
1	Add new tab in Control Panel GUI	4 hrs	Eric Li
2	Add ability to search for entities in range	4 hrs	Eric Li
3	Add entity selection and launching	3 hrs	Eric Li

Acceptance Criteria:
- Given that the entity selection tab is implemented correctly, clicking on a tab in the coordinate selection GUI will switch to the entity selection GUI.
- Given that the entity search functionality is implemented properly, the entity selection will show all entities in range of the launch platform.
- Given that the entity selection and launching functionality is implemented correctly, the user will be able to select an entity and launch a missile at it.

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 push my opponent away with an almighty push spell.
   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 damage my opponents and/or the landscape with a cluster bomb.

p. 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 (<u>if time allows</u>).
f. As a player, I would like to be able to launch a heat-seeking missile from a launching-platform that ignores "undead" enemies (<u>if time allows</u>).
g. As a player, I would like to be able to launch missiles of varying tiers using different tiered launching-platforms (<u>if time allows</u>).
h. As a player, I would like to be able to launch a missile at my opponent's current location (in game-coordinates) (<u>if time allows</u>).

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 pull a target closer to me with a magic spell
   f. As a player, I would like to use weapons from popular TV series and movies (<u>if time allows</u>).
   g. As a player, I would like to be able to teleport between two places using a gun capable of placing two portals (<u>if time allows</u>).

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~~
c. ~~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 (<u>if time allows</u>).
f. As a player, I would like to defeat my opponents with Purdue-related weaponry (<u>if time allows</u>).
g. As a player, I would like to battle Purdue Pete himself as an enemy-NPC (<u>if time allows</u>).