Enchantment Order

A utility app for helping Minecrafters enchant items in Minecraft using an anvil

Experience Levels in Minecraft

- Experience is a currency in Minecraft which you gain by doing things like killing mobs, breeding animals, trading with villagers, etc. Basically, doing progress in the game gives you experience in the form of experience orbs.
- Experience is measured in levels. Experience levels is what is used in enchanting, not orbs.
- The number of experience orbs needed to increase your experience level gets higher and higher as your level gets higher.

Experience Levels in Minecraft

Level	Total XP	Difference of XP between levels[Collapse]
1	7	7
2	16	9
3	27	11
4	40	13
5	55	15
6	72	17
7	91	19
8	112	21
9	135	23
10	160	25

As shown in this table from the Minecraft Wiki, leveling up from level 0 to 1 is much easier than leveling up from level 9 to 10.

Enchanting in Minecraft

- In Minecraft, there are two ways you could enchant an item. First, using an enchantment table, which will give your item a random set of enchantments for only a small amount of experience.
- Experience is a currency in Minecraft which you gain by doing things like killing mobs, trading with villagers, etc.
- However, with this method, you cannot control which enchantments you want to add to your item.

Enchanting in Minecraft

- The more efficient method is by using enchanted books with specific enchantments. This can be done by combining your item with the enchanted books using an anvil.
- However, this costs a lot of experience, and if you do it in the wrong order, the anvil will eventually stop you from combining items further with the note “too expensive.”
- This happens when you have done enough combinations with a specific item.

Anvil Mechanics

- Anvil uses are the number of times an item has been used in an anvil.
- Every time an item has been used in an anvil, it gets one anvil use. If the player adds an enchanted book that had never been used in an anvil with a sword that had never been used in an anvil, then the sword gains 1 anvil use.

- Minecraft Wiki

Anvil Mechanics

- The order of which you combine enchanted books with an item is also very important.
- Combining certain enchantments in certain orders will cost you more or less experience.

App’s Purpose

- The goal of this app is to get the best order of combining the enchanted books to minimize the amount of experience you will need to fully enchant an item.
- This will prevent you from getting the “too expensive” anvil prompt.
- This will also reduce the amount of grinding necessary to get the number of experience levels you need to fully enchant your items.

Similar Apps

- There is one app in the web that already exists that does this.
- However, the app only supports enchanted books with single enchantments, which you get from villagers.
- However, books with multiple enchantments also exist, which you could get from fishing and raiding loot chests, or books that you have combined yourself beforehand.
- Also, it does not support items with existing enchantments.
- This app supports all these.

Similar Apps

- Also, that app is outdated, and does not support the new enchantment “Swift Sneak”. It also does not allow you to add curse enchantments.

Our database

- Our database uses the Entity Framework Core 6, which reduced the amount of boilerplate that we had to write.
- Also, EF Core made our code safer from accidental SQL command errors, like syntax errors. This is because EF Core uses LINQ, which uses C# functions to run the queries.
- Our database does not use any relational model, since our data model is too complicated. Instead, object properties are serialized using JSON and saved to the database as strings.

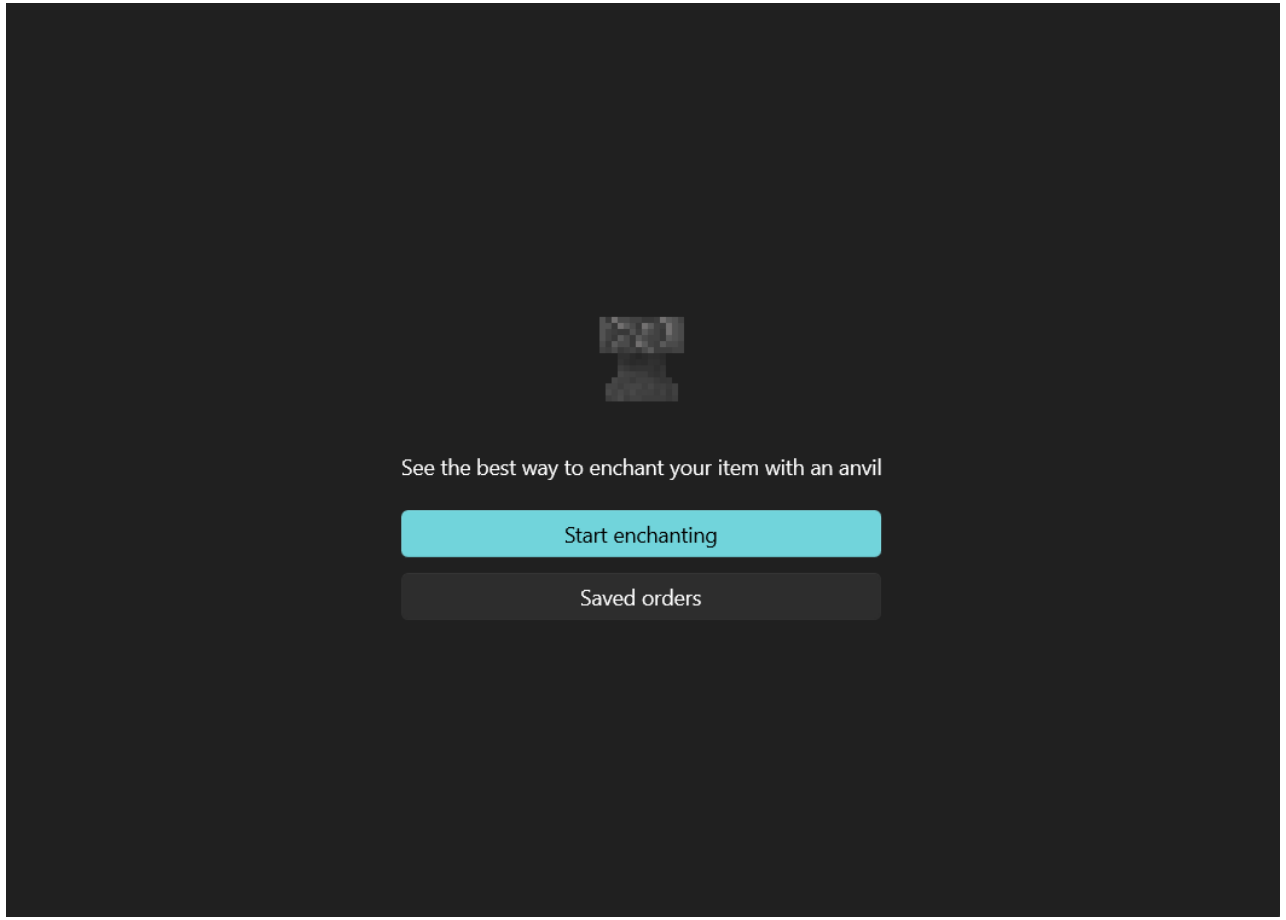
Abstraction and Encapsulation

- Our app used abstraction encapsulation heavily to prevent other modules of the app from accidentally modifying data that they are not supposed to have access to and to simplify the code for readability.

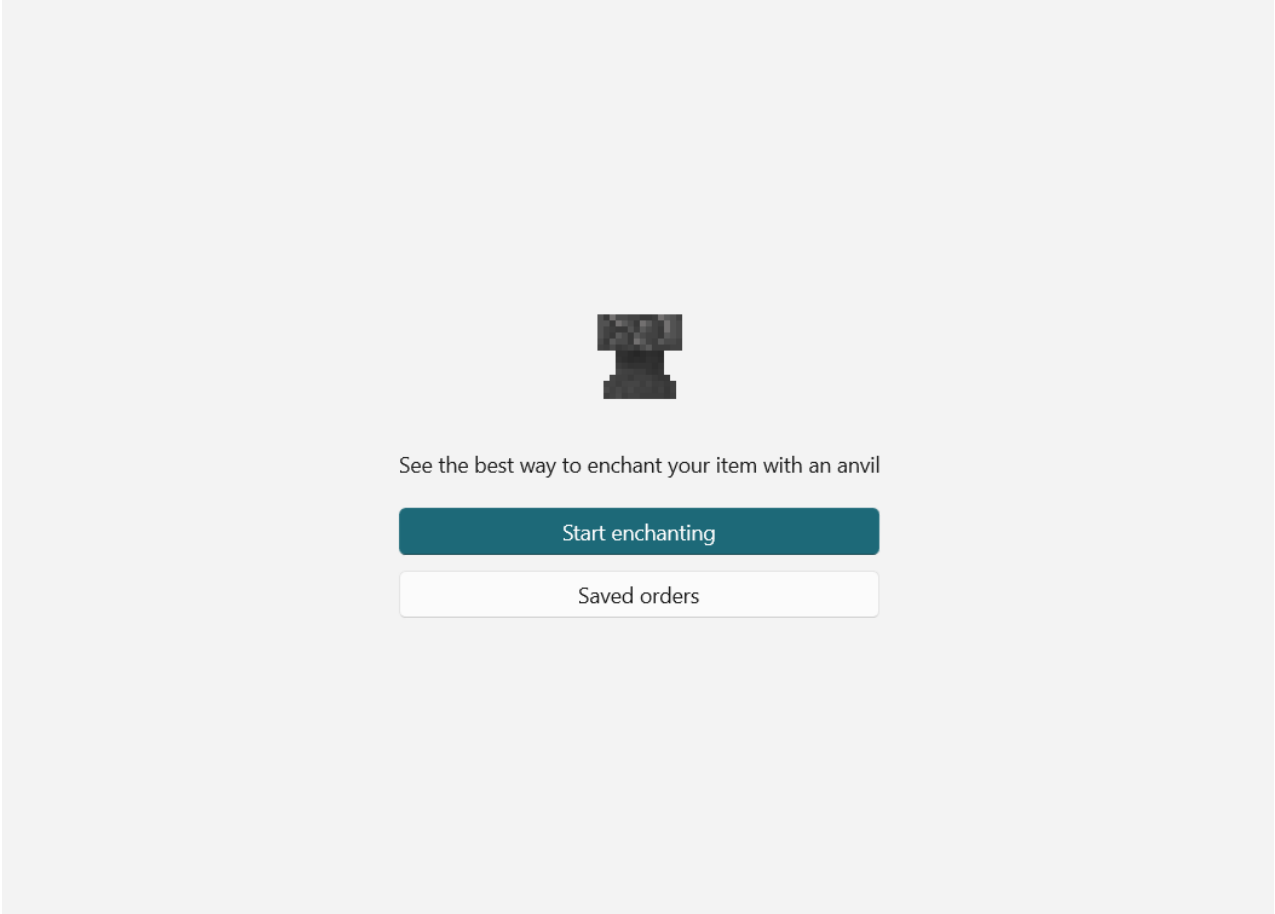
App Specifications

- Our app is made using the Windows App SDK, a descendant of the Universal Windows Platform.
- Windows App SDK is the current recommendation from Microsoft for building Windows apps. It uses WinUI 3, the latest UI library from Microsoft that provides a modern feel to the app.
- It runs on both Windows 10 and 11.
- Supports both light and dark themes, depending on your system settings.

Dark Theme


See the best way to enchant your item with an anvil
Start enchanting
Saved orders

Light Theme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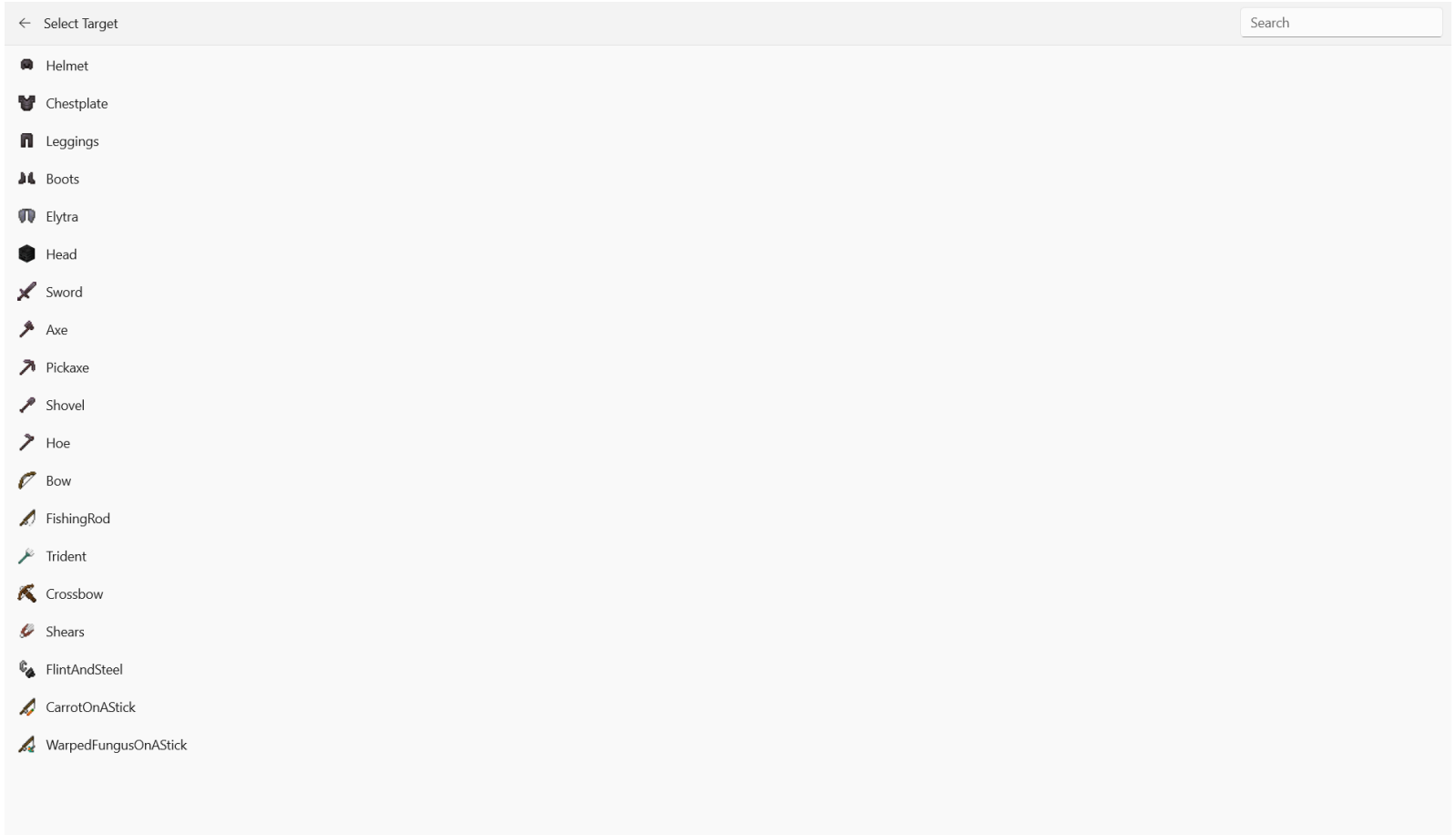
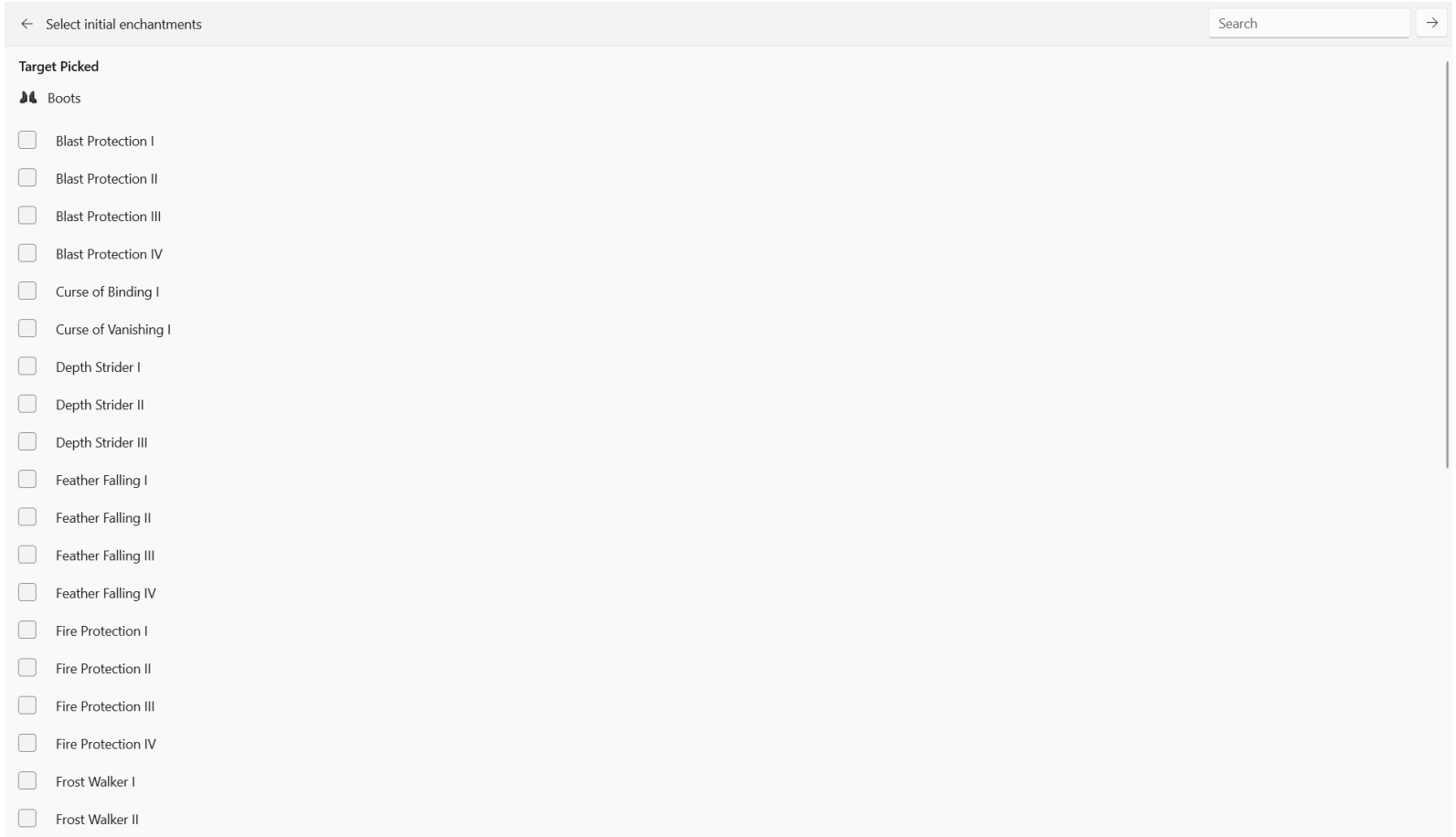
Other Screenshots



Other Screenshots



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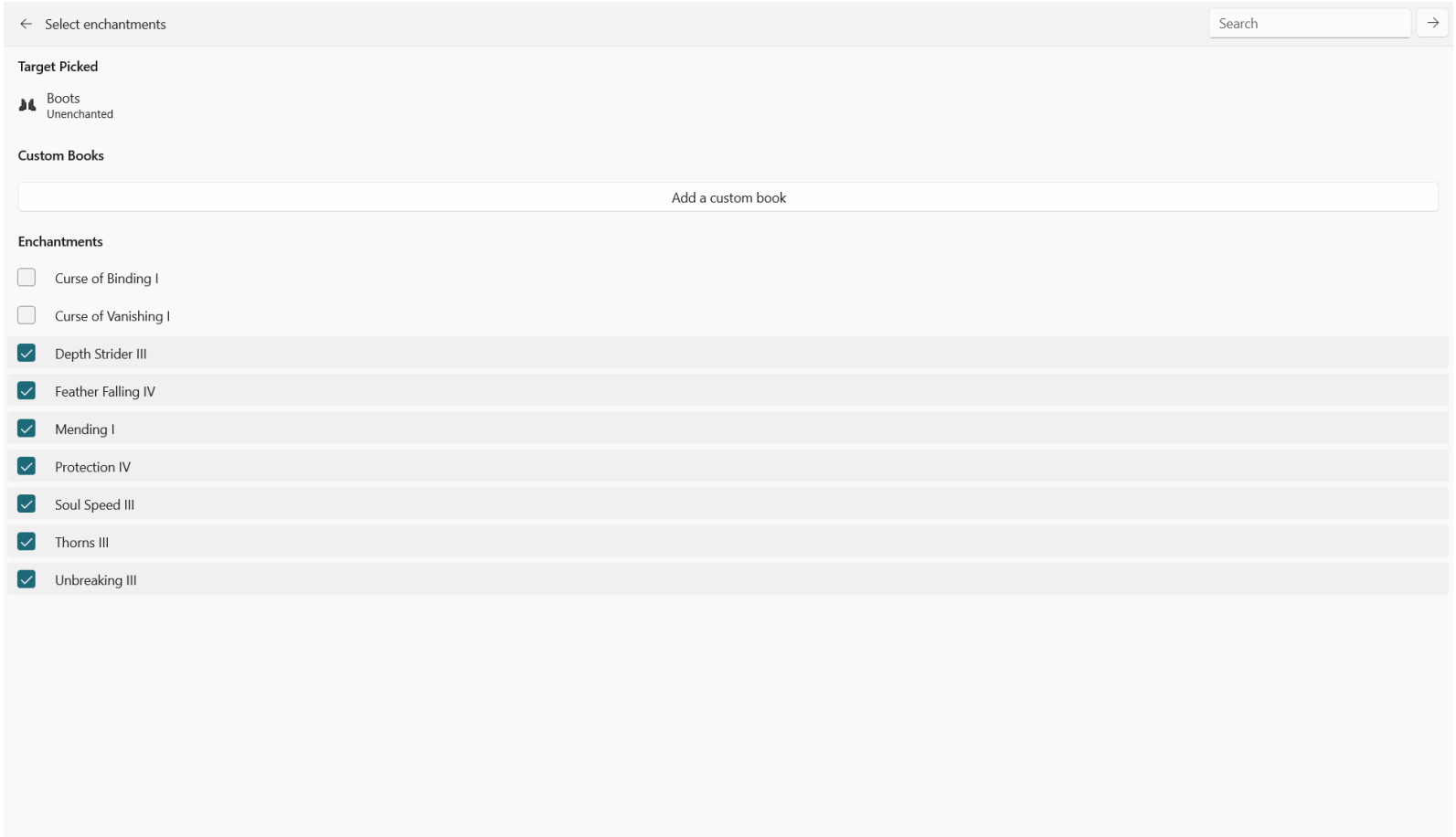

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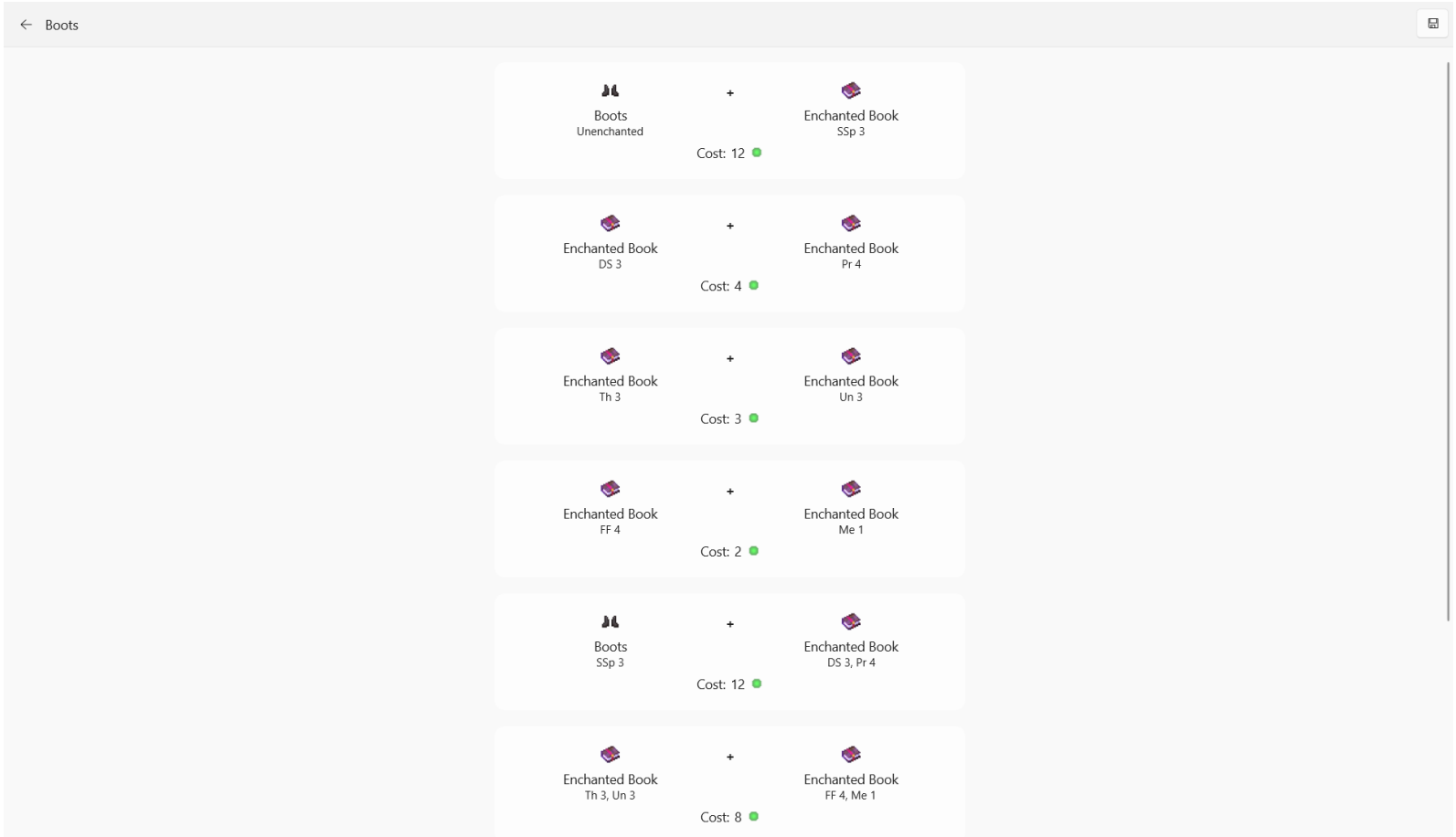
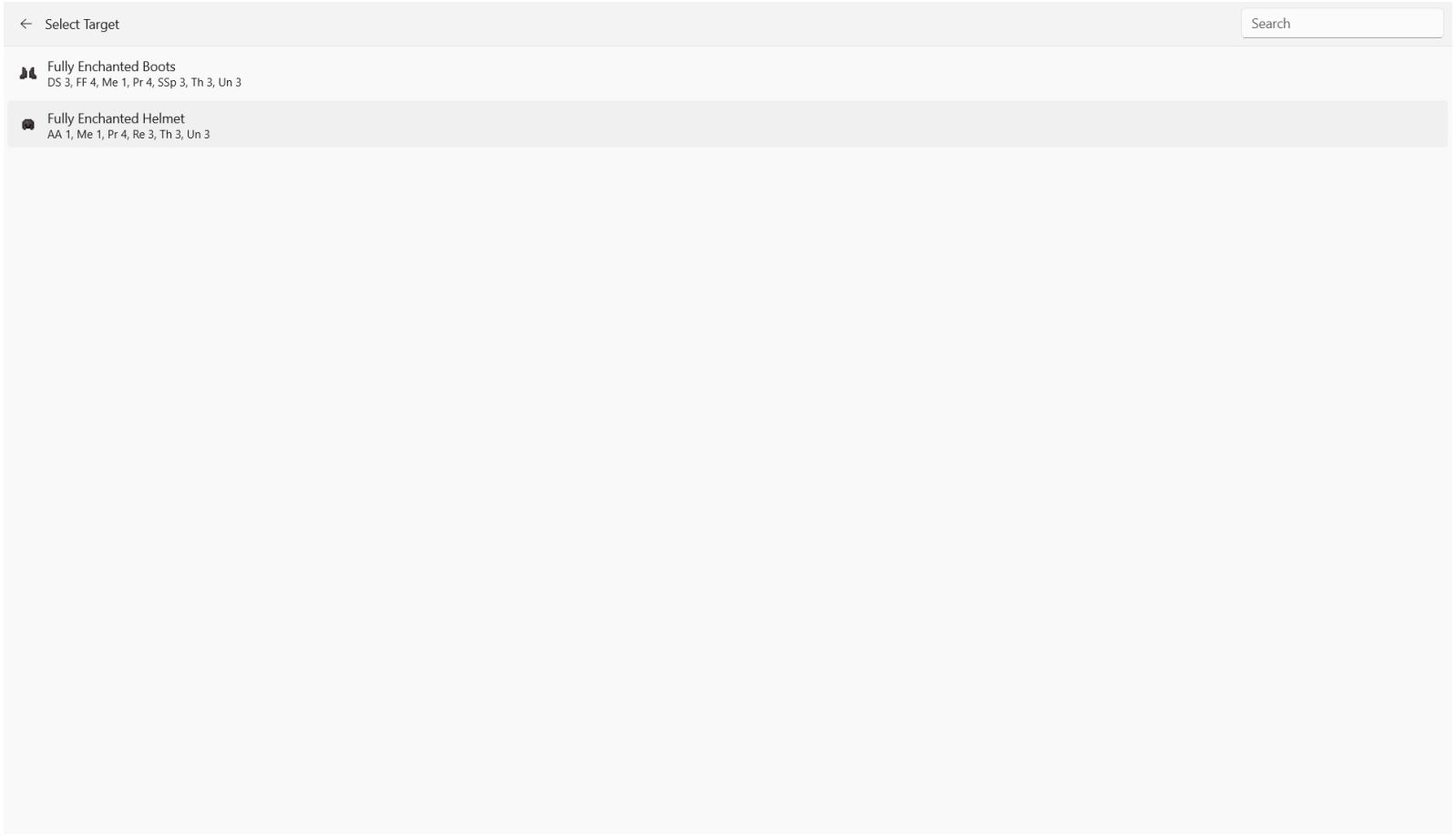
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