

Prototype or GUI Mockup with Design Rationale

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Project Overview

The proposed system is a separate, searchable catalog for combat items in Kingdom of Loathing (KoL). Right now, information about these items is spread across wiki pages, item descriptions, and player knowledge, which can make it difficult to compare items and figure out which ones are useful for a specific situation. The catalog would bring this information together in one place, with details about damage, healing, combat effects, and other unique behaviors. It would also work with a script that provides information about inventory quantities and Mall prices. The main goal is to make it easier for players to find items that meet their needs and give script authors access to more consistent item information.

Prototype

Currently the only buttons that are actually clickable are **Search catalog**, **Compare 3 selected items**, and **Start a new search**. Everything else is a static representation of making this preselected search: [KoL Clickable Prototype](#)

User Requirements Connection

Each screen connects to a use case and user story from earlier in the course. The Search screen supports Use Case 1 and User Story 1 by letting players find items that deal a specific type of elemental damage. Its exclusions panel supports Use Case 2 by allowing players to filter out unwanted behaviors, with exclusions enabled by default. The Results screen supports Use Case 2 and User Stories 4 and 8. Its warning banner and Needs review status identify items with unknown, conditional or difficult-to-categorize behaviors rather than assigning them inaccurate categories. The "Treat as included for this search only" link lets players override an exclusion without permanently changing the catalog.

The Compare screen supports Use Case 3 and User Story 2 by combining catalog information, such as damage range and reusability, with current inventory quantity and Mall price. This lets players compare an item's effectiveness against its cost and whether they already own it. The Not tradeable label, the prompt to check the closet and Hagnk's, and the verbose toggle address alternate situations from the use case. Together, these screens help players choose combat items without researching each one individually or using a rare or expensive item when another option would work just as well. The design also reflects the data model: inventory quantities and Mall prices are retrieved in real time rather than stored in the catalog, and Needs review identifies behaviors that cannot yet be categorized reliably.

Usability Design Rationale

All three screens share the same header, color scheme and progress indicator for Search, Results and Compare. Each screen has one primary button in a consistent location, while secondary actions like Edit search use an outlined style. This keeps the interface consistent and makes the next step clear. Search options mainly use radio buttons and checkboxes, so players can find items without typing much. Defaults prioritize damage, owned items and lower prices, giving players a useful starting point during a game session.

One of the biggest risks identified in my user stories is accidentally using an item with an unwanted side effect. Exclusions are enabled by default, the Results screen displays the number of active exclusions, and warnings identify items that need review. Players can also select Show hidden items to see what was filtered out. These features make the filtering process more transparent and give players a chance to catch potential problems before choosing an item.

The interface uses plain language rather than database terminology. For example, it says Hurts you too instead of using a technical label for self-damage. Warnings appear above the results table, and the comparison screen calculates cost per average damage and marks the lowest value as Best value. This helps players understand item behavior and compare options without having to interpret technical terms or calculate values themselves.

Accessibility Considerations

The design does not rely on color alone to communicate information. Warnings include an icon, a bold label and a border, while Needs review and Best value appear as text. Body text is at least 16 pixels, and the interface uses dark text on a light background. Visible control labels, grouped fields, descriptive headings and table headers provide a logical structure. An orange focus outline and controls designed to be at least 44 pixels tall also support easier navigation. These are design intentions that would need to be tested in an implemented version, particularly for keyboard navigation and screen reader compatibility.

The default settings and straightforward wording are intended to help newer ASH users, while detailed exclusions and verbose mode give script authors more control. This allows the interface to serve different experience levels without making the basic search process unnecessarily complicated.

Design Limitations and Future Improvements

The prototype uses static screens and sample data, so the displayed values have not been verified against the game. It covers only the main search-to-compare workflow. Future screens could support reviewing and validating item information, creating custom exclusions, and reviewing or resetting temporary overrides. I have also not tested the layout in a narrow window, and the text-based KoLmafia command-line version would need a separate design.

The next step would be to test the prototype with players, script authors and wiki maintainers identified in my requirements plan. I would use their feedback to check whether the default exclusions and comparison columns meet their needs, test accessibility with a screen reader, and add sorting by any comparison column. This would help identify changes needed before implementation.

References

- A KoL Wiki. (2026, July 8). *Banishing*. A KoL Wiki. Retrieved August 30, 2026, from <https://wiki.kingdomfloathing.com/Banishing>
- A KoL Wiki. (2024, January 18). *Combat Items*. A KoL Wiki. Retrieved September 1, 2026, from https://wiki.kingdomfloathing.com/Combat_Items
- gausie. (2026, August 22). *kolmafia/src/data/modifiers.txt*. Github. Retrieved August 30, 2026, from <https://github.com/kolmafia/kolmafia/blob/4b19681c000308d08c4e55452c246883847a4d6c/src/data/modifiers.txt>
- KoLmafia Wiki. (2026). CLI reference. KoLmafia Wiki. Retrieved September 1, 2026, from https://wiki.kolmafia.us/index.php?title=CLI_Reference
- KoLmafia Wiki. (2021, March 15). *Custom Combat Script - Kolmafia*. KoLmafia Wiki. Retrieved September 1, from https://wiki.kolmafia.us/index.php?title=Custom_Combat_Script
- KoLmafia Wiki. (2023, March 10). Modifier Maximizer - Kolmafia. KoLmafia Wiki. Retrieved September 1, 2026, from https://wiki.kolmafia.us/index.php?title=Modifier_Maximizer