

Antipattern App Design
Heuristic Evaluation

CS5760 – Human-Computer Interaction

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Undergraduate Design

The design draws inspiration from blocky code languages and IDEs like Scratch and Snap. It entails around one main page and two sub pages. The main page has a bank of regular expression operators on the left hand side, organized in categories/tabs. In the top right/center is a large canvas to drag and drop the blocks into. Below the canvas is a customizable list to show the test cases the user inputs and whether or not each test should pass or fail. The far right column of this shows the actual result for each test.

UI Domain

The domain is a web application that constructs regular expressions using blocky code.

Heuristic Usability Principles

1. Consistent and intuitive mapping
2. Help users recognize, diagnose and recover from errors
3. Help and documentation
4. Match between system and real world
5. Useful and relevant information
6. User control and freedom

Usability Problems Generated

1. If not done properly, the blocks could fail to align or snap to each other in the GUI.
2. Further visual feedback for errors may be required for users with deuteranomaly, or red-green colorblindness.
3. Optional, different color palettes for blocks and error feedback should be available for the various types of colorblindness
4. The help documentation should have a list of all blocks/regex operators and how they work. A question mark button near the bank of blocks— maybe to the right of the tabs— would be good for this.
5. The system should follow the same rules and contain the same operators for Java regular expressions.
6. The app should not contain information that is otherwise irrelevant to the typical user. For example, the app should not contain details about how to code in Java.
7. The user has control over *most* of the input/app features, but not all.
8. Exporting should have the option to include test results of the regular expression.

Critical Usability Concerns

1. Is there a help/question button? What happens if someone has a question outside of the tutorial?
2. Why is the space block (\s) the same color as the function block?
3. Does the export button only export the regular expression, or can the user get the test results as well in the text file?

Concern Scenario

A high school professor (secondary stakeholder) is trying to use the app to construct a regular expression for a common mistake he sees in his students' Java programs. He encounters an error and the regular expression won't generate. The tutorial did not cover what happens when this error occurs. He does a visual search and does not find a help icon. He is forced to consult the internet to see if there is a solution for troubleshooting online. Most likely, he will not be able to find help and will become stuck.

Dr. X (primary stakeholder) is using the app to document common coding issues among his students. He is primarily using the advanced mode. He seeks to download the regular expression and its test results as a text document. Does the application have an easy way for the researcher to do this?