Improving Searching and Zooming in App Inventor

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App Inventor Background

App Inventor is a blocks programming environment that empowers users to be creators rather than consumers of Android apps. The behavior of apps is specified by visual blocks that resemble jigsaw puzzle pieces. Blocks languages make it easier to create syntactically correct programs and often have blocks that abstract over useful high-level behaviors.

Searching (Ctrl+F)

- The mechanism only highlights the text, which is too subtle for colorful blocks.
- When using the arrow buttons to navigate through the matching text, relevant blocks are not centered.
- If a matching block is within a block that is collapsed to save space, the browser will not display the matching block.

Zooming (Ctrl++, Ctrl+-)

- Everything is scaled within the browser window, rather than just the blocks workspace.
- There is no way to choose a center point for zooming.

We designed and implemented features to address these issues.

Searching

Cecellia implemented a new search box at the top of the blocks editor viewer that is particular to the needs of App Inventor. It is similar to the browser’s default Ctrl+F search mechanism, but with three main improvements:

1. After a search query is entered, irrelevant blocks are greyed out, emphasizing the matching colored blocks to the users.
2. As the user navigates through the searched blocks with arrow keys and arrow buttons, the matching block is centered in the blocks editor and highlighted in pink.
3. Blocks can be collapsed to save space on the workspace. If a matching block is within a collapsed block, the parent block of the collapsed block will still be colored to indicate it contains a match. In addition, as the user navigates to this block with the arrow keys, the collapsed block will expand and center the block accordingly, re-collapsing when navigating to the next matching block.

Future Work

- There is still work that needs to be done with fully integrating zooming with other features of the App Inventor workspace.
- Searching needs to be compatible with folders, a new organizing feature implemented by Xixi (Shirley) Lu ’15 and Devid Farinelli.
- Searching and zooming can be integrated to provide more context when searching, and to make navigation as a whole more efficient.
- The final goal is to make these features available in the public version of App Inventor.

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