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HW2, for Keyboard

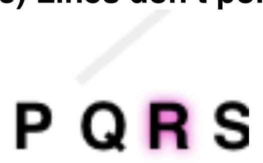
1) Binary model is less efficient

I created a rough KLM for your model vs. a square keyboard (5x5 – I'm ignoring one character to make the math easier). On average, a user would have to make 4 actions per character (moving half the distance of the square). In your model, you need 2 actions minimum, and then an additional 0-4 (4 actions require zero more, 8 require one more, 8 require two more, 4 require three more, 2 require four more). This averages out to 4.69 actions per character. While the numbers would change a bit if factoring in character frequency, the fact remains that your prototype is less efficient than a standard on-screen keyboard. (efficiency, major)

2) Binary search model does not match the real world

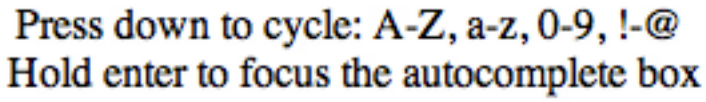
The binary search action is inconsistent with real keyboards. The user does not store the alphabet as a tree diagram, and no real-world search interfaces operate in this fashion. While a standard on-screen keyboard does not require any instruction, your model has a significant learning curve. (match the real world, minor)

3) Lines don't point to the character they select



The line between the large arrow and the characters does not point to the initially selected character. When the user selects a direction, they then follow the line down to the row of characters. Yet the highlighted character is not on that path, forcing the user to jump around and find the cursor. I found myself expecting P to be highlighted in this case. (consistency, minor)

4) Hold message is misleading



Press down to cycle: A-Z, a-z, 0-9, !-@
Hold enter to focus the autocomplete box

'Hold enter to focus' is misleading. When I first tried to switch to the autocomplete box, I help down the enter key (and nothing happened) – the trigger is on a release after a hold. Consider firing the change when the user has held down the enter key for a specified time, as the current message is confusing and inconsistent with the system. (consistency and standards, cosmetic)

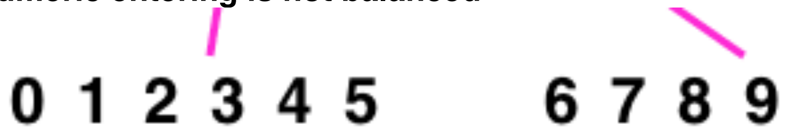
5) No method to go back to prior fields

Once a user has entered a field, there is no way for them to get back to the previous screen. If a user hits enter instead of an arrow key, the screen progresses without any way to backtrack. On a remote, where the enter key is usually in the center of all the arrow keys and prone to a fat-finger problem, this issue is even more severe. (user control & freedom, error recovery, major)

6) Down arrow action is inconsistent with other arrows

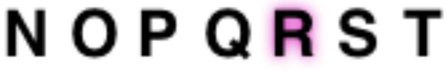
While three of the arrows allow the user to navigate around the interface, the down arrows selects input mode. This inconsistency makes it more difficult for users to build a model in their mind. I often found myself going up, realizing that I should have stayed where I was, and hitting down to get back (only to have the mode change). I would recommend that you make the down arrow bring you down to your last state. (consistency, minor)

7) Numeric entering is not balanced



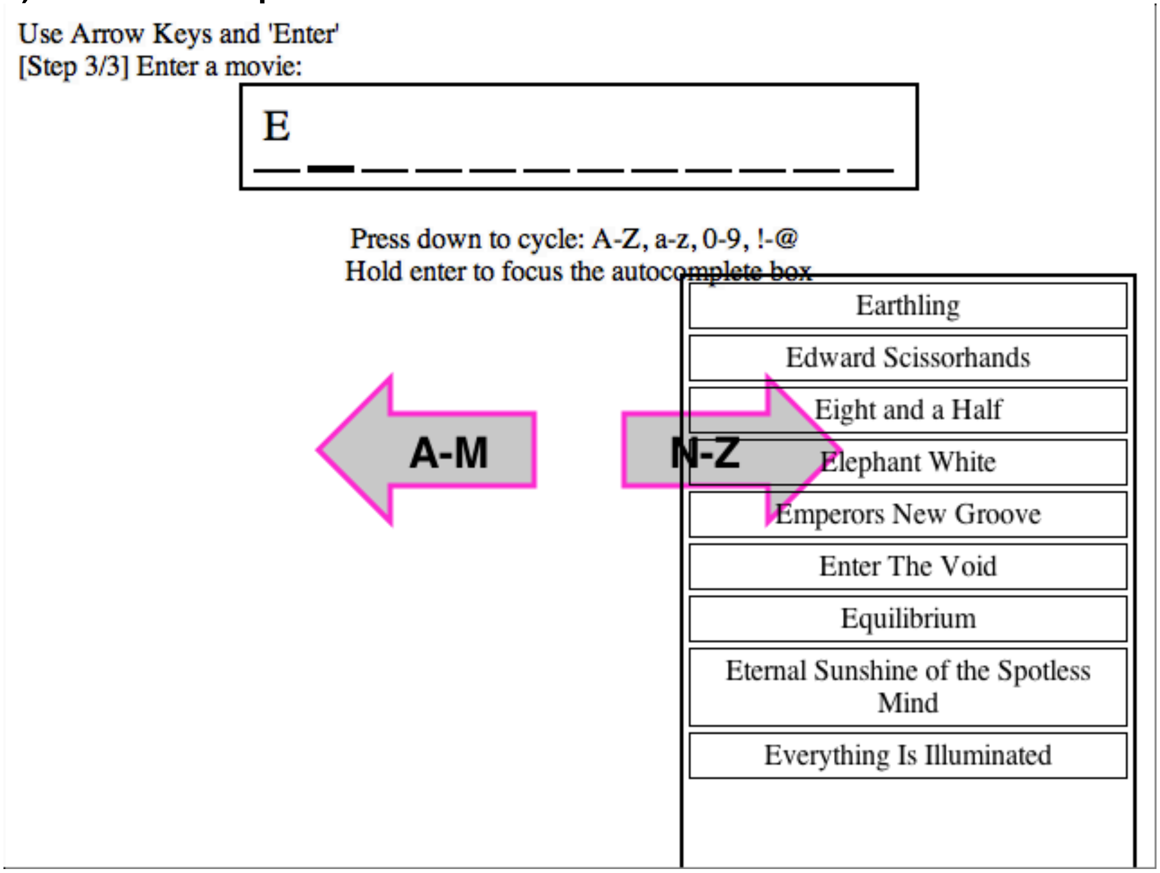
In the numeric input mode, one side has 6 numbers while the other only has 4. This breaks the consistent split in other modes and decreases the efficiency. The ‘5’ should be moved to the right side. (consistency, efficiency, cosmetic)

8) Selected character fails the squint test



While the pink glow looks nice, it fails the squint test. It’s not distinctive enough, and I can’t tell that anything is there when I squint (even on a large monitor). When trying to move quickly I found myself having to slow down and search the characters to find the cursor. Compared to the bright, large sections of pink visible earlier, this highlight is lacking. (visibility of system status, minor)

9) Interface collapses at low screen resolution



Use Arrow Keys and 'Enter'
[Step 3/3] Enter a movie:

E

Press down to cycle: A-Z, a-z, 0-9, !-@
Hold enter to focus the autocomplete box

- Earthling
- Edward Scissorhands
- Eight and a Half
- Elephant White
- Emperors New Groove
- Enter The Void
- Equilibrium
- Eternal Sunshine of the Spotless Mind
- Everything Is Illuminated

Since your design is meant for a TV platform, you should make sure that the interface works at SD resolutions (640x480). The screenshot above shows what happens at SD resolution. Everything collapses together, making it confusing and hard to read. A significant portion people still use SD TVs – you can't ignore such a large part of your target audience. (aesthetic, catastrophic)

10) Cannot delete extra characters

While the user can replace characters, there is no method for deleting characters. If a user accidently types one too many characters (perhaps they thought they had moved on to the text screen already), there is no way to remove the character. (user control, error recovery, major)

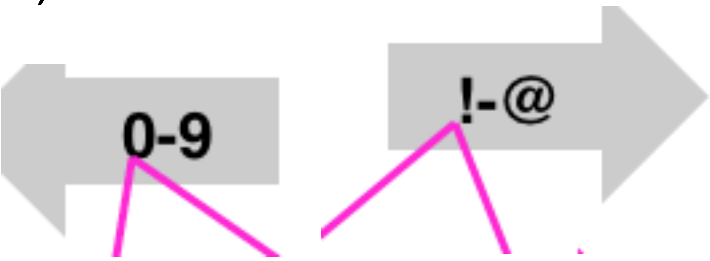
11) No multi-key repeat support
(holding down a key on last level)

If I made a mistake on the last level and ended up on the wrong side, I would always try to hold down the left or right key to move to where I wanted. On a standard keyboard this would pause for a moment before quickly repeating the keypress over and over. Not only does this bring you closer to the real world, but it makes error recovery faster as well. (match the real world, efficiency, error recovery, minor)

12) Deciding left/right requires significant recall

For characters near the middle of the alphabet, I found myself having to recite the alphabet in my head to figure out the correct direction. The user should not have to recall the exact location of a letter. In later levels this is solved by showing all possible characters in each side and allowing overflow from one side to the other. (recognition vs recall, major)

13) Line start locations are not mirrored



Both sets of lines originate from the left character. This throws the interface off balance, and looks strange which switching between the two. It's a very minor point, but it would be nice to see mirrored locations. (aesthetic, consistency, cosmetic)

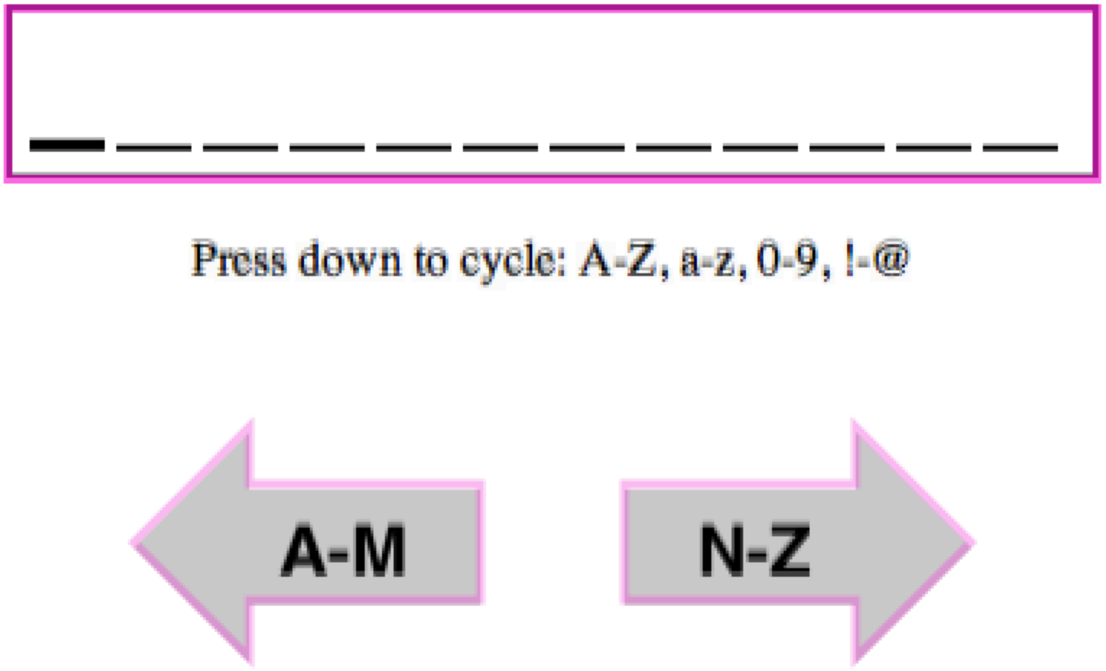
14) Down key has inconsistent behavior depending on location

The down key moves down when the user has the text field selected, and changes the input mode elsewhere. This inconsistency leads to confusion and errors. The down arrow key is meant for navigation – a different key should be used for mode changes. (consistency, error prevention, major)

15) UI Elements are too far apart

Imagine the current interface scaled up to a 50-inch TV. There would be massive gaps between related elements. If the user is trying to find a movie, they will have to visually traverse the entire screen to see the search results. Consider making the interface more compact. (aesthetic, minor)

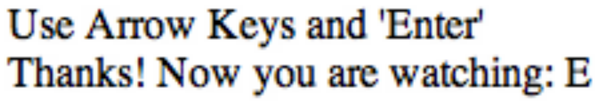
16) Interface shifts between top bar and first arrows



Press down to cycle: A-Z, a-z, 0-9, !-@

I took two screenshots (one when selecting the text box, another while selecting the first set of arrows) and combined them together in photoshop. As you can see, everything below the textbox shifts a bit between the two selections. The movement is also visible when moving between the two items. This is a very minor point, but the movement can be distracting to the user. (aesthetic, cosmetic)

17) Can select a movie that doesn't exist by quickly hitting enter

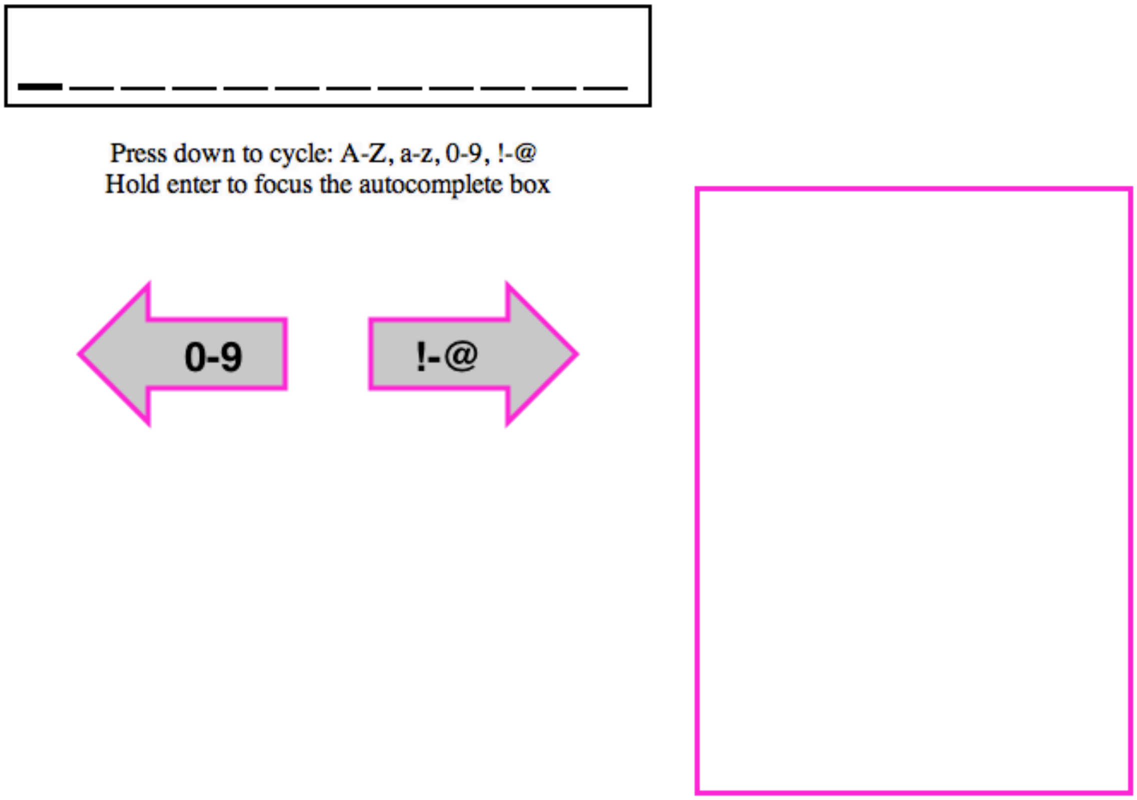


Use Arrow Keys and 'Enter'

Thanks! Now you are watching: E

By hitting enter on the final page, you can select a non-existent movie to watch. Since this is clearly an error condition, you should not allow the user to get into this mode. They can only watch movies that appear in the autocomplete list – don't allow any deviation. (error prevention, major)

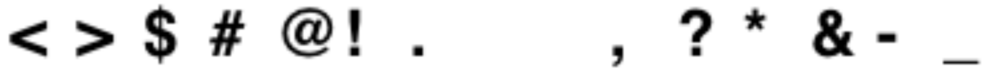
18) Arrows and autocomplete box can be selected simultaneously



Press down to cycle: A-Z, a-z, 0-9, !-@
Hold enter to focus the autocomplete box

When traversing the autocomplete list, the list and the arrows are selected simultaneously. The focus is actually in the autocomplete list, so the highlight on the arrows should be removed. (consistency, aesthetic, cosmetic)

19) Symbols aren’t consistent with a keyboard



< > $ # @ ! . , ? * & - _

The list of symbols seems pretty arbitrary. First of all, the order deviates from the numeric row on the keyboard – ‘!’ should be first, followed by ‘@’. Furthermore, the group of characters is arbitrary and some of the characters are useless. None of the movies in your autocomplete list contain a ‘<’ character, while nine contain a ‘ character. (consistency & standards, match the real world, minor)