

1.

- a. Heuristic evaluation is when a small set of human evaluators (who have been gotten up to speed on the domain and scenarios to be used) to perform certain tasks using the system (they perform each task twice: Once for overview, once for detail). They then evaluate their experiences of performing the task according to the ten usability heuristics. The results are then collated, and each usability problem which was encountered is given a severity rating by the evaluators. The severity rating is a number from 0 to 3 which represents a combination of how frequently the problem happens, how persistent the problem is, and how much it impacts the usability. 0 is for when the evaluators do not agree that this is a problem, 1 is for a cosmetic problem, 2 is for a minor problem, and 3 is for a major problem. Then this feedback is incorporated into the next design iteration. The 10 heuristics are as follows:

- Visibility of system status
- Match between system and real world
- User control and freedom
- Consistency and standard
- Error prevention
- Recognition rather than recall
- Flexibility and efficiency of use
- Aesthetic and minimalist design
- Help users recognise and recover from errors
- Help and documentation

b.

- 1

It is good but still has some issues.

H.1 is violated after the right arrow is clicked, as the user can no longer see which tab is selected.

H.4 is applied here, as all the tabs have the same styling. Depending on the context of the application,

H.6 might be violated, as some of the tab names could be ambiguous (e.g., what is the difference between "Directories" and "Workspace", there is a tab simply named "Info", and one tab named "Tabs"). It would be difficult to figure out what would be in each tab without simply remembering it.

H.7 is violated to an extent, because if you want to switch between the first and last tab that might require several right-arrow clicks which is very inefficient.

H.8 is applied, as the design is minimalist, however it is also violated as dark grey text on light grey background is not very aesthetically pleasing.

Severity rating: 1

- 2

It is bad

H.1 is violated, as you cannot tell whether the non-visual objects are already being viewed. Perhaps this should be a checkbox rather than a button.

H.4 is violated, as one menu item ends with an ellipsis, but the other does not.

H.6 is violated, as it is incredibly unclear what the two options do before you click them. The oxymoron of viewing the non-visual objects is confusing if you do not already know what it does. It is also unclear what "Source..." will do. The trailing ellipsis might suggest that there is more to that label which is not being shown.

H.7 is applied to an extent. The underlined letters suggest that there are Alt-shortcuts, and "Source..." has a keyboard shortcut of F4. This would allow experienced users to use the application much more efficiently.

H.8 is violated slightly, as the interface can seem quite cluttered when a dropdown menu is opened. It also seems like if the menu only contains two options, there should be a better place to put those two options rather than a dropdown menu.

Severity rating: 2

2.

a.

- i. Customers can explain their requirements ambiguously. This can be addressed by having questionnaires/interviews which contain a combination of open-ended and short-answer questions, to get both an overall sense of what they want, as well as specific answers to questions you need.
- ii. Customers can think they want a feature, without understanding the technical implications (e.g., longer loading times, slower performance, task would actually be too difficult to perform). This can be addressed with heuristic evaluation and the iterative design process.
- iii. Potential users might have conflicting views about what their requirements are. This can be addressed by interviewing/collecting data from a large sample of the potential users and seeing what the overall trends are. In some cases, it would be appropriate to design the system to be so flexible that it accommodates a wide variety of the users' requirements.

b. The six principles of Gestalt psychology are

Figure-ground relationship: we group elements as either figures or ground

Proximity: we group by distance or location

Similarity: we group by type

Symmetry: we group by meaning

Continuity: we group by flow/alignment

Closure: We perceive shapes even when they are just implied

In the given interface, the grey background is "ground" while the blue icons are "figures". The icons are all close together, so we group them together as a single set of options. Many of the icons share similar features, such as the silhouette of a person, or straight horizontal lines. The 3x3 grid structure allows us to group by continuity. Closure is employed to make the figures stand out more. For example in the "Followers" icon, a true the space around the frontmost person is removed, giving the illusion of an outline.

c.

- i. P1. H.4
- ii. P5. H.4, H.6
- iii. P6. H.3, H.4, H.7, H.9
- iv. P7. H.9, H.10
- v. P8. H.1, H.3