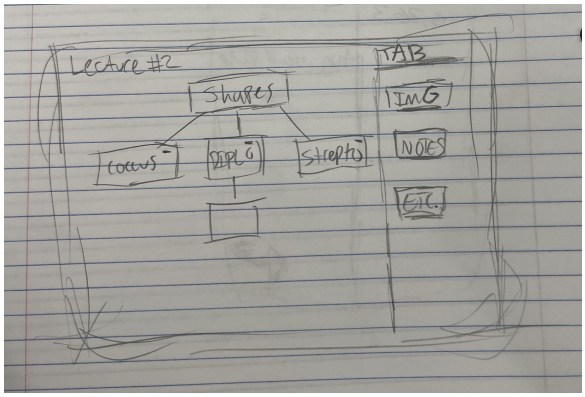
Prototype:

https://docs.google.com/presentation/d/1BpYpqszRyFkKYGS7H4O_wEivKx_V5wtu9cd6NZivj-Q/edit?usp=sharing

Design Rationale:

Our goal is to create a digital note taking system that allows for the detailed and organized structure of handwritten notes, while still providing the convenience and ease of use of digital notes. The organization of our notes is specifically designed for medical students, as the subjects they focus on often include detailed subsystems within systems, which can be translated intuitively into a hierarchy of headings and subheadings within one note document.

Our users have shown us that organization is key in their notetaking. We have found that the way that they structure their notes could vary, but a hierarchical structure is generally how they take notes. We designed the prototype in a way that makes taking hierarchical notes as user-friendly as possible. As our prototype illustrates, the respiratory system can be divided into the upper and lower respiratory systems, and the upper respiratory system can be further subdivided into its parts: the trachea, larynx, etc. Users would be able to expand or close certain subheadings in order to focus on specific information that they have built on the hierarchy while also keeping themselves organized. In each heading and subheading there are also dedicated sections for images, where the user will be able to expand an image and look through an album related to the certain heading they are on.



In an alternative design (pictured above), we considered creating a hierarchical layout through the use of trees, rather than tiered notes. This design succeeded in offering a well-defined structure to the user's notes. However, we found this design posed challenges in how the notes themselves were displayed. In this example, a majority of the screen is taken up by the tree. This screen space in a tree design would

be necessary to allow the user to navigate through their notes. Otherwise, the user would not be able to see nearby sections. The large amount of screen real estate dedicated to navigation meant that the most important information – the notes and pictures associated with each term – would be hidden behind their own menu. In the early design stages, we determined that the notes taken under each section must be easily accessible. This idea led us to the app's current design. With this tree design, it does not offer much information to the user and in the end goes against our goal of making a readable, organized note-taking application. Ultimately, we decided that it was worth sacrificing the structure that a tree gives in favor of making the user's notes more readable. Our current design offers users a compromise between organization and readability.

In terms of what we've learned about Android interfaces, and interfaces more generally, the most important things an interface needs are functionality and simplicity. If an app doesn't do what it says it does, it's essentially useless to a user who needs a specific functionality, and this user will simply stop using the app. Similarly, while complex apps (such as Obsidian) can be functional and useful, an overabundance of options and information may also discourage users from continuing. In general, both functionality and simplicity tie together to create a streamlined user experience. For Android interfaces specifically, it seems important to have an understanding of how different elements on the screen will tie in and interact with each other. If an element is not anchored correctly, it can throw off all the rest. This leads to unintended behavior and a less than ideal visual presentation. Also, the size of the element is important to consider. Some elements seem to default to being too small, meaning that users interacting with the app using their fingers may struggle to use these elements correctly.

Questions and Concerns:

- Button(s) to open all and collapse all sections would allow the user to see all written information.
- We need to decide how to handle the maximum depth of subsections. Every step down further into subsections reduces the width of the subsection. At some depth it will no longer make sense to allow the user to add deeper subsections.
- Our initial prototype did not include any search functions. We believe both a subject search function and a section search function would be important for our application. We do need to figure out how to allow the user to search within each section (Hotkey, Clickable magnifying glass, swipe downward…).
- We can add a way to tie certain notes together by using hyperlinks built into the text, so users can find related information when on a certain page.
- Potentially add a delete button for each smaller section

- We need to decide how to handle reordering of sections (especially with a tablet interface).
- "Can users add an additional images to each level of notes? If so, how do users add additional images?"
    - We need to add support for multiple images and decide how to indicate to the user that multiple images can be added.
- Is there a way to print the notes once a user has completed a document?
- "I feel like it would need more features to set it apart from its competitors. This could include different types of study materials or easy-to-print or pdf versions of the notes."
- "Would it allow us to work simultaneously on the shared note file between users, like in Google Docs?"
- One suggestion I have for the prototype is to add a few examples of the editing functions able for the text boxes and the moving between levels. The hierarchy is clear, but some of the interactions are unclear in the prototype. Overall, your app looks good and would be a nice resource for hierarchical information!

Task Descriptions:

1. It's Sunday night and Bill has finally begun studying for his Kinesiology unit 3 exam tomorrow. The professor recently released the study guide on Canvas, so Bill opens it up and uses it as a basis for his notes. He opens Google Docs on his laptop, and creates a new document. He doesn't bother putting it in a folder; he won't have to study this information again until midterms. He copies down the definitions of different nervous system cells from his textbook, sorting them into categories based on which part of the nervous system they're found in. Below these categories, he writes assorted information about neurons. He pastes diagrams of these cells at the bottom of the page, so they don't take up too much space. While the notes don't look too pretty, he doesn't see the point of spending the extra time to add bullet points.

2. Carlos is attending his fifth BIOL 2531 lecture during the fall semester, ready to take down his notes. He brings out his laptop and pulls up Microsoft Word and creates a new document, and takes down key points that were discussed during lecture. He doesn't care about the specific details yet. Using his laptop helps with being able to keep up with the professor's pace. Later in the evening, he sets aside some time to go over the lecture's recording. While rewatching the lecture, he uses a pen and his notebook to rewrite everything and solidify what was lectured. This helps him retain the important information while also making sure

he did not miss anything from before. After all, they do say that you remember things better when you physically write them out.

3. Ben is attending a lecture for his Anatomy class and opens up the Anatomy folder in the Citeline app on his android tablet. This week's lecture is about the respiratory system, so he creates a new document labeled "Respiratory System" and begins taking notes. He writes down a short summary based on the intro slide of the class powerpoint into the general description box. As the lecture proceeds to delve deeper into the individual parts of the respiratory system, he adds subheadings and descriptions for each individual part. If a diagram is displayed on screen, he uses the "Add Photo" function for the relevant section and snaps a picture to keep in his notes. When it's time to study for the test, he uses the "Expand All" feature to lay out all of the information in an organized format.