**1. Could you tell me a bit about you and your field?**

I’m a volunteer focusing on providing assistance and guidance to people with disabilities, specifically those with visual impairments. My work primarily involves understanding the challenges faced by this community and helping them leverage technology to improve their day-to-day lives.

While I'm not a professional in the field of cognitive science or technology, I've learned a lot from my interactions with visually impaired individuals and the different assistive technologies that I've come across. I've gained insights into how these technologies are designed with cognition and perception in mind, particularly with an emphasis on non-visual modalities such as touch (haptic feedback) and sound (spatial audio cues).

One of the most rewarding aspects of my work is seeing how these technologies can enable greater independence and accessibility for those who might otherwise be significantly hindered by their visual impairments. I'm always learning more about how these tools and devices can be further refined and adapted to better serve the needs of the visually impaired community.

**2. In your experience, what are the challenges visually impaired users encounter when using Apps?**

A. Limited Customization: While apps might have built-in accessibility features, they often lack the flexibility to be customized according to the unique needs of each user. The ability to adjust text size, contrast levels, the speed of text-to-speech, etc., can greatly improve a visually impaired user's experience.

B. Overwhelming Audio Feedback: While audio feedback is crucial for visually impaired users, having too many audio cues simultaneously can create a confusing and overwhelming environment. It's important to design audio feedback in a way that's informative but not overwhelming.

C. Lack of Tactile Interface: Touchscreen interfaces pose a significant challenge as they lack physical differentiation. Traditional keyboards, for example, have keys that can be felt, whereas touchscreens are flat and uniform, making it difficult for visually impaired users to locate specific controls.

D. Inadequate Gesture Recognition: Many modern apps rely on complex touch gestures for navigation and interaction. However, these gestures can be challenging for visually impaired users to execute consistently and accurately.

E. Scarcity of Training or Guidance: Many apps lack intuitive onboarding processes or tutorials specifically designed for visually impaired users. This absence makes it harder for these users to learn how to use an app's features effectively.

**3. Can you give me an example of how you apply different tools, applications, and methods to help users overcome their challenges?**

Let me share an example involving an audio-book application that one of the visually impaired individuals I assist was struggling with. The application, while featuring a wealth of content, presented several challenges for the user. Some of these issues included complicated navigation, an overwhelming amount of audio feedback, and the absence of well-defined search functionality.

Our first step was to determine the key challenges by observing the user interacting with the app. We asked her to verbalize her thoughts and frustrations as she navigated the app, providing us with valuable insights. For example, it became clear that the search function was not only poorly defined but also relied heavily on visual cues, making it almost impossible for her to use it effectively.

We decided to leverage external tools to complement the application. We introduced her to voice-assistant technology, specifically designed to work with mobile apps. By using simple voice commands, she could bypass the complicated in-app navigation and access the content directly. For instance, she could say, "Play the book Pride and Prejudice," and the voice assistant would execute the task within the app.

We also helped her customize the app's settings to reduce the overwhelming audio feedback. By tweaking the audio settings, we managed to streamline the feedback to only provide essential information. This step drastically reduced the cognitive load and made the app more user-friendly for her.

Lastly, to tackle the challenge with the search functionality, we introduced a Braille display device. This device translates on-screen text to Braille, providing tactile feedback. This allowed her to 'read' the search results and choose the content she wanted to engage with.

**4. What aspects of creating accessible content is most challenging, why are they challenging? and how have you overcome these challenges? Can you tell me about your process when you make these changes?**

A. Translating Visual Elements into Non-Visual Formats: Many digital apps and products are inherently visual, designed with sighted users in mind. Translating these complex visual elements into non-visual formats that are equally informative and engaging is challenging. This could involve converting visual information into audio descriptions or haptic feedback. It's often not a straightforward process and requires careful consideration to avoid overloading the user with information. I frequently collaborate with tech experts and rely on user feedback to refine these translations.

B. Inclusion of Real-time Elements: Some applications incorporate real-time features, such as live video streaming, live chats, etc. Making these aspects accessible is complicated. Ensuring screen readers can keep up with real-time updates or finding ways to provide descriptive audio for live video streams pose unique challenges. I find that staying connected with innovative tech communities and attending accessibility-focused tech conferences helps me stay abreast of emerging strategies and solutions.

C. Training and Adoption: Even with accessible content, another challenge is training visually impaired users to effectively utilize these features and adopt new technologies. Every individual has their learning curve, comfort zone, and adaptability level, and these have to be factored in while introducing new tools or methods. I often employ a personalized, hands-on training approach and provide continuous support until the user becomes comfortable with the new tool.

**5. Can you share any experiences where you modified content? What changes were made?**

One instance that comes to mind involves a visually impaired student who was struggling to use an online learning platform for her college coursework. The platform was primarily text-based with small fonts and minimal contrast, making it almost inaccessible for her.

The initial task was to understand the student's specific challenges with the platform. After a few sessions of observation and discussion, it became clear that the main issues were the small text size, low contrast, and poor navigation cues.

With the challenges identified, we started addressing each one. The first was the text size and contrast issue. Using the built-in accessibility settings of her device, we were able to enlarge the text and change the color scheme to a high-contrast one. This simple change made a world of difference in the readability of the content.

The navigation issue was more complex as it involved changing the way the student interacted with the platform. To this end, we used a combination of keyboard shortcuts and screen reading software. The screen reader would read out the content, and the student could navigate through the different sections and menus using the keyboard. We had several training sessions to familiarize her with the various commands and shortcuts.

Finally, for content that was purely visual such as diagrams and charts, we used tactile graphics. Tactile graphics are physical representations of visual images that can be understood through touch. We worked with a service that converted these visual elements into tactile graphics, which the student could then use to get the information.

**6. What aspects of creating accessible content is most challenging, why are they challenging? and how have you overcome these challenges? Can you tell me about your process when you make these changes?**

One of the most challenging aspects of creating accessible content is ensuring its full usability, which includes its discoverability, operability, and comprehensibility. This is because not all features that are useful and accessible for one person will be the same for another. Factors such as the degree of impairment, individual's technology literacy, and their personal preferences can greatly vary.

Discoverability of features or content can be a significant challenge. Visual cues are often used to highlight features or content, but they don't work for visually impaired users. To overcome this, it's crucial to use alternative methods, such as audio cues or tactile feedback. This often involves thinking creatively and out-of-the-box to deliver the same level of discoverability without relying on visuals.

Operability can also be challenging because most interfaces are designed with sighted users in mind. Therefore, it's necessary to redesign or adapt these interfaces to be fully operable through other means such as voice commands or keyboard-only navigation. Overcoming this often requires a deep understanding of the user's needs and the technology's capabilities.

Finally, ensuring the content is comprehensible can be complex. For instance, a data-rich infographic would need to be translated into a format that a visually impaired person can comprehend, like an audio description or a tactile graphic. This involves not only translating the content but also ensuring that the translation effectively communicates the same information and insights as the original.