

Audio Cue Activity

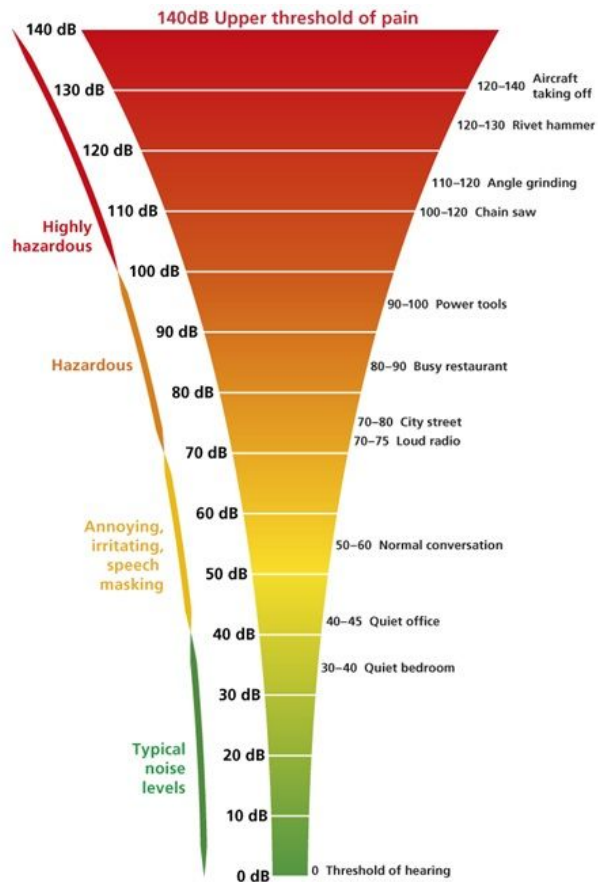
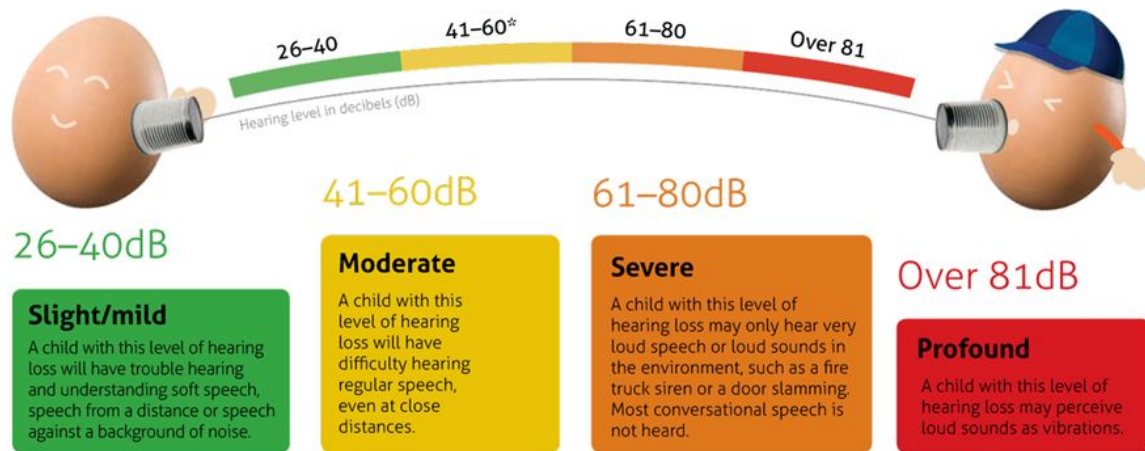
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What is Hearing Impairment?

- A loss of a part or all of the ability to hear

Hearing loss grades



Statistics

- About 2 to 3 out of every 1,000 children in the United States are born with a hearing loss in one or both ears.
- There are an estimated 37.5 million adults that report some trouble hearing.
- More than 90 percent of deaf children are born to hearing parents.
- Hearing loss is a common problem caused by noise, aging, disease, and heredity. Approximately one in three people between the ages of 65 and 74 has hearing loss.



Signs of Hearing Loss

- Have trouble hearing over the telephone
- Find it hard to follow conversations when two or more people are talking
- Often ask people to repeat what they are saying
- Need to turn up the TV volume so loud that others complain
- Have a problem hearing because of background noise
- Think that others seem to mumble

What are Audio Cues?

- An audio cue uses sound to convey key information.
- Examples:
 - A sound from the doorbell to indicate that someone is at the front door.
 - A honk from the car to indicate that the driver wants to get attention, avoid collisions, or warn others.



How do we fix the issue?

- To make software more accessible to Deaf and Hard of Hearing users, the content must be **perceivable**.
- Information and elements of the interface must be both presentable to users in ways they can perceive, meaning should be presented in multiple forms (visual, auditory, or tactile) without a loss of information.
- If audio cues were to be utilized, then you must add visual cues, tactile feedback, or messages/transcript/captions.
- Developers should think about accessibility at the beginning of the project.
- For more information, go [here](#) to see more about Web Content Accessibility Guidelines.

Real World Examples

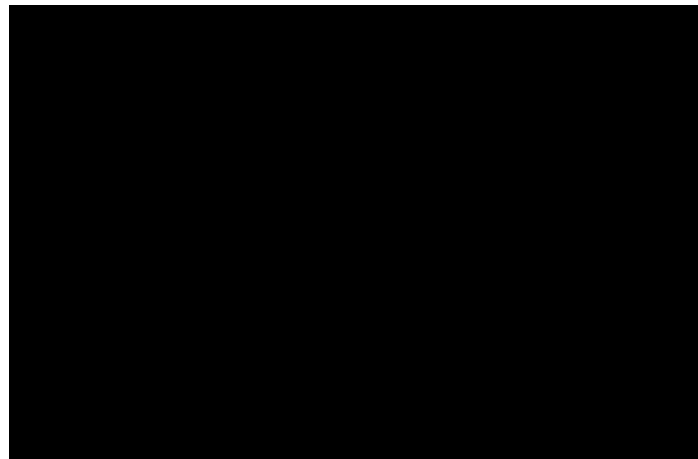
Example #1: Doorbells

- Doorbells will play a sound when pushed. This is to indicate that someone is at the door.
- However, this can be unfavorable for Deaf and Hard of Hearing users.
- To solve this problem, there is a device that will flash lights if the doorbell is pushed.



Example #2: Fortnite

- Fortnite is a popular Battle Royale game.
- Sound can be very advantageous in the game.
- To make this game more accessible to Deaf and Hard of Hearing users, they implemented visual audio effects.
- In this video, you should see audio being visualized in a circular motion.



Example #3: Alarm Clocks

- Most clocks have a feature that allows you set an alarm at a certain time.
- The alarm would play a sound based on time.
- Deaf and Hard of Hearing users will not hear this.
- To make alarm clocks more accessible, they can get a vibrating device which is shown left of the clock in the picture.



Summary

- Accessibility in software is an important factor to consider about.
- Audio cues are not accessible for Deaf and Hard of Hearing users.
- Convey more information in alternative forms (visual & tactile) to make software more accessible.