

This is the writeup portion of the class exercise.

Introductory Paragraph:

My overall guiding theme for the new and improved soundtrack would be to mimic what my perception of video games revolves around. When I first saw the video clip, I started thinking of what I wanted the background music to sound like, something similar to fun, ocean-themed music. For the background, I have some fun hype music with a little bit of the sound of waves and some bubbling in the background to set the scene. After that, I decided on the individual sounds, one at a time. For example, when a fish hits a jellyfish, I wanted it to be a generally negative sound, something that a player would want to avoid hearing. This way, I worked through all the sound ideas, and eventually put them together to fit the video. In the end, I wanted to create a rich, adaptive, and inclusive auditory experience by combining music and sound effects that are both emotionally resonant and functionally relevant. Essentially, the players will hopefully be transported into a captivating world where every sonic element serves a purpose, enhancing their immersion, gameplay, and emotional connection to the game.

At least five pieces of information that are critical to gameplay, but that are conveyed to the player via visuals:

1. Shell locations
 - a. The locations of shells are shown to the user and let them answer the question prompts.
2. Bubble positions
 - a. The bubble positions allow the user to move the fish and score points.
3. Jellyfish positions
 - a. The jellyfish positions help the user avoid bumping the fish into the jellyfish.
4. Where the main fish is currently located
 - a. This helps the user keep track of the avatar's position and move it accordingly.
5. Question prompts
 - a. These allow the user to move the fish to the right shell and answer the question properly.

For each information type, describe how you might sonify that information (e.g. modify a parameter of existing game sound effect to encode data, use spatialization, add a new sound cue that fits thematically with the existing sound track etc.) and motivate your design decisions by referencing concepts about auditory displays, sonification, and accessible/universal design that we have either discussed in class or that you find via independent research.

1. Shell locations
 - a. When a shell opens up in the video, it makes a sound that aligns closely with the opening of something. That shell is the shell the fish is (presumably) closest to.

Playing a sound to indicate that a shell has opened alerts the user to look at the shells and let the fish come to that one if they want.

- b. This approach aligns with the concept of auditory icons in sonification, where familiar sounds are used to represent specific objects or actions. By associating shell presence with a unique sound, players can easily identify the shells and understand their locations.
2. Bubble positions
 - a. When the fish pops a bubble, there will be a sound to indicate that. This sound will mimic the sound of a bubble popping, so users can match the sound with gaining a point.
 - b. This makes use of auditory cues that are accessible to people, as these sounds generally mean the same thing to most people who play video games. The sound of popping a bubble matches with a bubble being popped and the user gaining a point.
3. Jellyfish positions
 - a. When a jellyfish touches the fish, it will output a sound that users can perceive as negative. This sound will be matched with the user visually losing a point.
 - b. This sound illustrates the concepts of simple and intuitive use, as well as perceptible information. Most people will associate a negative sound like the one used when the player loses a point to something they don't want to happen, such as the fish bumping into a jellyfish.
4. Where the main fish is currently located
 - a. The fish's presence and movement is indicated by the constant sound of bubbles, which not only adds to the background ambience and brings together the cohesive sound atmosphere, but also reminds the user that the fish is on-screen, and that the setting of the game is under the sea.
 - b. This makes use of the auditory feedback concept. In this case, the constant sound of bubbles serves as auditory feedback representing the fish's presence and movement in the game. Additionally, the sound of the bubbles contributes to the overall ambience, creating a cohesive and immersive auditory experience that aligns with the underwater theme of the game.
5. Question prompts
 - a. When the question prompts switch, a noise that can be played to let the user know that the question has changed. This lets the user decide when to move the fish to a specific shell. The sound will be something that people normally associate with switching cards, slides, or, in this case, questions.
 - b. This approach uses musical mapping, associating specific sounds with different concepts or actions. By leveraging the musical motifs, players can intuitively grasp the meaning of the question prompts and select the correct response. Musical/sound cues provide a memorable and engaging way to convey

information, aligning with principles of auditory displays and enhancing the game's overall accessibility and user experience.

Freesound.org Source URLs:

- Background music
 - https://freesound.org/people/Seth_Makes_Sounds/sounds/657804/
 - <https://freesound.org/people/florianreichelt/sounds/450755/>
 - <https://freesound.org/people/InspectorJ/sounds/398808/>
- Bubble Popping
 - https://freesound.org/people/MATRIXXX_/sounds/506545/
 - <https://freesound.org/people/MootMcnoodies/sounds/426596/>
- Plus One Point
 - <https://freesound.org/people/InspectorJ/sounds/411089/>
- Hitting a jellyfish
 - <https://freesound.org/people/nofeedbak/sounds/21871/>
- Switching questions and the start of the game
 - <https://freesound.org/people/Electroviolence/sounds/234555/>
- Fish hitting a shell
 - <https://freesound.org/people/Timbre/sounds/131557/>

Well-designed individual game sounds/music that have their parameters change to indicate changes in events/actions in the game. For example, changes in the sound parameters may represent data values such as spatial positions of game elements, precise value/information such as the current score, and binary events such as being hit by an enemy. Your video should have multiple versions of the same sound cue that shows how the audio would change in response to changes in the data. You are welcome to use recorded speech but overuse will likely create an unpleasant player experience.

- The best example of this in my movie is the bubbles. When normal bubbles pop, there is a similar sound effect to when the fish pops the bubbles, but with some slight differences. The same background sound effect is used (the popping and clinking noises), but when the fish pops a bubble and gains a point, an extra chime is used as well, and the volume of the sound is higher, compared to when a bubble pops without the fish.
- Another example is the wave sound. You can perpetually hear the wave sounds in the background of the game, but they become especially loud for a little bit of time when the game starts, or the question at the top changes. When these events happen, the wave sound increases, and it is the most-heard sound cue in the game. Thus, the same sound effect is being employed, but changes based on certain events (in this case, the game starting or the question changing).