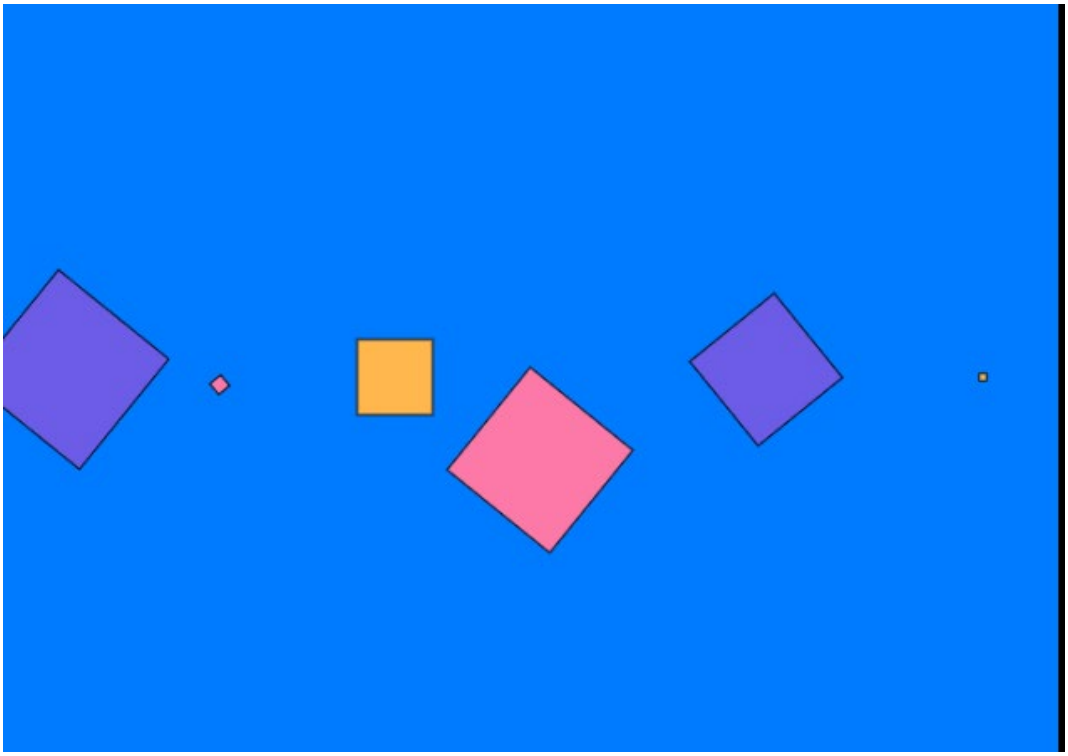
Documentation of the DJ app music visualizer with command voices

Accommodation of the features in the Canvas



Features of Meyda library by canvas order

Figure 1 - Spectral Rolloff:

- Visual Impact: The size of the first figure on the canvas is determined by the spectral rolloff multiplied by 0.01. Since spectral rolloff points to the frequency below which a certain percentage of the energy is concentrated, this figure will grow larger with more high-frequency content. In a techno track, this can represent the intensity of high-frequency leads or drops, giving a visual cue to these energetic moments.

Figure 2 - Spectral Centroid:

- Visual Impact: The second figure's size is controlled by the spectral centroid times 2. The spectral centroid represents the 'brightness' of the sound, so this figure will become larger as the sound becomes brighter, which is often the case with synth leads or high-hats in techno music. The doubling factor emphasizes these changes, making them more noticeable in the visual representation.

Figure 3 - Spectral Flatness:

- Visual Impact: The third figure's size is derived from the spectral flatness multiplied by 1000. A higher spectral flatness indicates a more noise-like sound, which could correspond to the presence of white noise sweeps or atmospheric pads in techno. This large scaling factor may lead to significant visual changes, reflecting the presence of these textural elements in the track.

Figure 4 - Energy:

- Visual Impact: The sixth figure (as per your comment) uses the energy feature scaled by 10. The energy level corresponds to the loudness and intensity of the sound. In the visual domain, this figure will pulsate more dramatically with the driving beat and basslines of techno music, offering a visual heartbeat to the track.

Figure 5 - Spectral Spread:

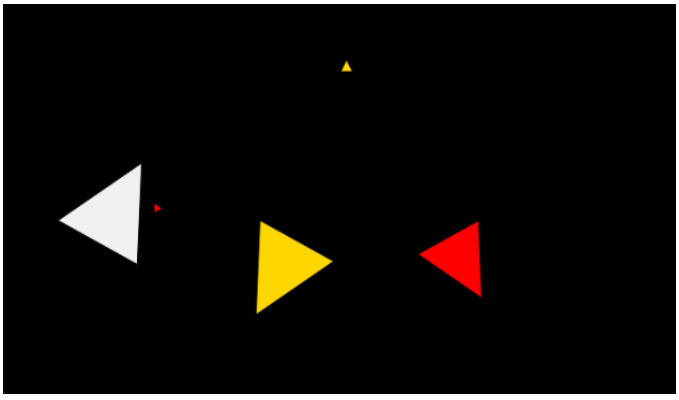
- Visual Impact: The fifth figure is sized based on the spectral spread times 5. As spectral spread describes how the spectral energy is distributed, this figure will visually represent the fullness or sharpness of the sound. In techno, wider spectral spread could relate to the fullness of a chord or the breadth of a noise sweep, and this scaling helps visualize that spread.

Figure 6 - Spectral Kurtosis:

- Visual Impact: Contrary to the comment, the fourth figure in your order is actually sized by spectral kurtosis directly. Spectral kurtosis measures the 'tailedness' of the frequency distribution. This figure may not change size dramatically unless there are sounds with pronounced frequency spikes or dips, which can be characteristic of specific synth stabs or bass hits in techno.

Voice Command implementations and microphone button

The parseResult() function is set up to listen for specific words and change visual elements based on these commands. When words like "black," "white," "red," "green," "triangle," "circle," "square," and "pentagon" are recognized, the function adjusts the colors and shapes displayed in the canvas accordingly. For instance, saying "black" or “triangle” will change the background color to green and triangles shapes to adjusts the colors of various figures to a predefined theme.



The toggleMicPermission() function is responsible for enabling or disabling the microphone. When the microphone is enabled, it initializes the speech recognition service, sets it to continuous and interim results mode, and starts it. The button's text and color are updated to reflect the microphone's status, turning green and saying "Disable Microphone" when active, and turning red with the text "Enable Microphone" when not active. When the microphone is disabled, the system will ignore the speech recognition results, but the service continues to

listen in the background. This setup allows users to interact with the visual elements on the canvas using voice commands, enhancing the interactive experience of the audio-visual project.