OUTLINE

VectorOctave

OBJECTIVE:

Develop an application for simultaneous auditory and visual composition.

OVERVIEW:

VectorOctave is a basic drawing application for iPad. The user generates sound in VectorOctave by drawing on the artboard. The sound is affected by the speed at which the user draws and where the stylus is touching on the artboard

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Device:

iPad paired with Apple Pencil

Basic Capabilities of application (MVP):

What the user can do within application

•User can draw anywhere on their artboard

(The artboard contains an invisible, 16 point coordinate plane. This is how the user generates sound)

•User has 1 brush size (2 point radius) to draw with

•User is able to select from 3 brush colors

Selecting and Triggering The Sound Elements

•First, the user must select a color. Each color contains a unique chord progression, and the chords within that progression will "populate" the points of the 16 point coordinate plane on the user's artboard when they select that color.

•For example, the color TEAL contains the chords: D, B minor, G, and A. This means that when the user selects TEAL, (2,1) on the coordinate plane contains a B minor chord (1,1) contains a G chord, (0,1) contains a D chord, and so on.

•As the user draws a line across their artboard, they will pass over those points with their stylus, "triggering" the chord to play. (Like a trip-wire, or mine-field).

WIREFRAME

The screen which the user can draw on is called the ARTBOARD
The artboard is a coordinate plane with 16 POINTS

The user can select from;

° 1 brush size: 2 point radius
° 3 COLORS: teal(T), midnight blue(MB), light gray (LB)
Each COLOR contains SOUND:
- Each SOUND contains CHORDS
  - T contains the following chords: D, B min, G, A
  - MB contains the following chords: C#Dim, A, B minor, E minor
  - LG contains the following chords: A#dim, B

Selecting COLOR:
User can select color by clicking on graphic icon on ARTBOARD

(All SOUNDS are played in the KEY of D major)
(All SOUNDS have reverb effect)

Activating SOUND component:
•Touching ARTBOARD(screen of device) with stylus or finger.

Deactivating SOUND component
•Removing stylus or finger from artboard (screen or device)

IN DEPTH

VectorOctave

Description of application — VectorOctave is a drawing platform, an instrument, an experience, and a game; meant to be played *with* as much its meant to be played. At its core, VectorOctave is an application for simultaneous auditory and visual composition. Built upon a basic drawing platform, it allows users to "hear" what they are drawing. Draw a line quickly, with a dark color selected, and a series of minor chords will emanate from the screen, or switch to a bright orange with slow, deliberate swirls to generate something "brighter" and more upbeat.

Potential Users of application — The users of VectorOctave could range from musicians to visual artists, children, and those with Sensory processing Disorders, Autism, or ADHD. The additional stimulus of sound to the action of drawing could evoke compositions outside of the users traditional sound or aesthetic, thus increasing creativity and making for a more immersive experience than if it were purely visual.

How it Works — VecorOctave's sound-generating capability is made possible by the invisible coordinate plane on its artboard, and the chord progressions "set" into the points of that plane by selecting a color. A user-selected color contains a chord progression, made up of 2 to 4 chords, which "populate" the points of the coordinate plane on the artboard.

For example, the color TEAL contains the chords: D, B minor, G, and A. If we select the point (2,1) on the coordinate plane, it has the value of B minor. The coordinate (1,1) has the value of G chord and (0,1) has the value of a D chord. This continues throughout the plane in random order, and the chords within the progression appear in different octaves. Now, as the user draws a line or shape across their artboard, they will pass over those points with their stylus,"triggering" the chord to play. (Like a trip-wire, or mine-field).

User interactions with VectorOctave and Capabilities of MVP (version 1.0) — The user begins by clicking on the application icon. The application's Home screen displays the VectorOctave logo, a "New Project" button, an "Open Project" button, and "Information" button. "New Project" opens a blank artboard. The artboard has a small "VectorOctave" logo in the left-hand corner, and a dock along the bottom of the screen. Clicking on the logo in the left-hand corner of the screen brings the user back to the home screen. In the dock is a < symbol as well, to go back to home screen.

The user has one calligraphic brush with a 2 point radius, and can select one of three colors: Teal, Midnight Blue, or Light Gray. Next to the < button are 3 circular "swatches". The first swatch is Teal, the second is Midnight Blue, and the third is Light gray. The user selects the color of their brush by clicking on one of these swatches. Next to the swatch button is a |–| symbol. When clicked, it undoes the last action performed. Next to the |–| symbol is a green |S| symbol. When clicked, the document is saved.

Existing concepts or applications similar to VectorOctave —
Currently, no application exists which generates sound while drawing. I discovered some attempts to "see" sound via Sine waves, and an application that could convert your photos into a series of notes based upon visual attributes of a particular photo.

Capabilities of subsequent releases — the user will be able to select multiple brush sizes and styles, multiple colors, all containing a different progression of chords, and which instrument the chords are generated by (cello, guitar, pipe organ).

The user will be able to record, and play back their composition if feature is not included in MVP. **Also,** the application will have a miniature, 11 key virtual synthesizer in the dock to "reverse" flow, meaning that instead of hearing sounds based on what the user is illustrating, the user will be able to create an illustration based on chords the they are playing (via the virtual synthesizer).