Title : DJ ART designer

Short description : The aim of the project is to provide visual and interactive art to DJs who want to enhance their performance on set.

Description : The project is a mix between Novel Instrument Design and Interactive Art. The purpose is to enhance the performance of the DJ by increasing the emotional aspects that live show music convey : interaction by dancing and fascination by listening. Now with our project, using a device (like a connected watch with a gyroscope) the dance movement we make can be displayed on a big screen on the stage. Furthermore the different visual art modules are interacting with the music and make the enchantment for the show even bigger. The use is very simple, the DJ just need to transfer sound through a Virtual audio CAble for the processing gets the music and the GUI is designed with an OSC app (paying app for easy learning but free version also very easy to understand).

The user experience is more happiness by dancing and creating an even stronger feeling to be in a group together dancing.

The project requires the combination of several aspects. First, we need to collect the sound from the DJ software (rekordbox) and access it in Processing. This is made possible thanks to the Sound library for Processing. Once we have the sound, we need to display a window that creates visual arts.

Visual art in music is a broad and wide subject that includes a myriad of possibilities. Here we have worked on 4 different modules : Chladni patterns, circle dancing, interactive painting and fractal visual. All modules are coded in Processing except for Fractal visual that is coded with TouchDesigner. This increases the number of options we have to make visual art aided by a computer. Finally the DJ can change from one to another module sending OSC messages to the software with his phone (TouchOSC, OSC Controller, Sensors2OSC...)

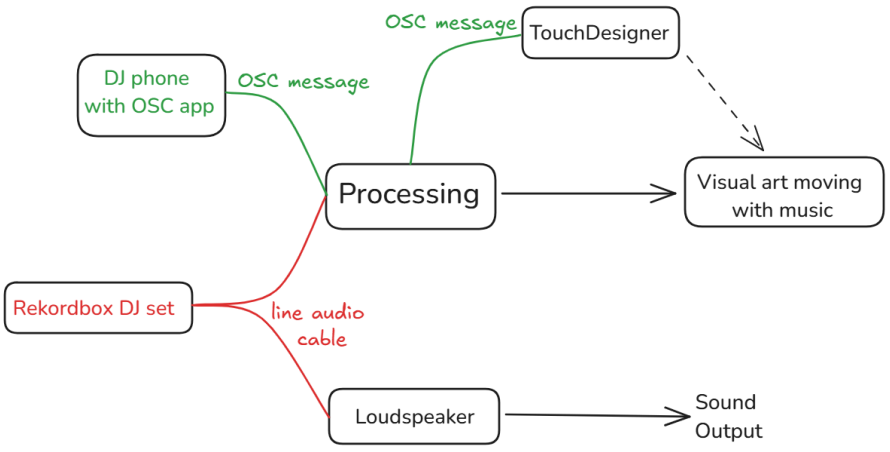

Figure 1. Scheme of the Project

Challenges : During this project we faced many problems, principally one was to make the project work in real time with a good resolution (and with no budget). Indeed there is no clear audio connection from the software we use so we have to use a virtual line audio cable. It exist free version of hardware like this but they are not optimal and come with a lot of imperfection making the fast fourier transform and other feature extraction calculations in Processing with flaws.

Similarly we had no access to several devices to make an optimal interaction app. During our video presentation we are using what's within our reach so telephones with OSC free apps.

The best accomplishment we are proud of is making the app work in real time with minimum delay between the music and the sound (near 0 seconds). Indeed the pipeline from rekordbox to the projection through a projector is long. However we optimized it and made it work flawlessly.

We learnt many things about the interaction of agents coming from different softwares and some of us discovered about the DJ world.

Technology : We used many different technologies.

- Softwares : Processing, Reckordbox, TouchDesigner, Virtual line Audio Cable,
- Softwares on phone : OSC Controller, Sensor2OSC, Sound Cool OSC
- Libraries : Processing.Sound, OscP5
- Hardware : computer, different phones (minimum 3)
- Coding languages : Processing (Java language) and TouchDesigner

Students :

- Djavan BORIUS : worked on the interaction of the different software (Processing, reckordbox and ToucheDesigner). Coded the module *Chladni pattern*. Worked on the presentation, the report and video making.
- Andrea CRISAFULLI : worked on the modules *Circle Dancing, features, Interactive Painting*. Worked on the presentation, the report and video making.

Links :