

MULTIMEDIA TECHNOLOGY

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SUBJECT

Digital DJ controller applying visual disk effects and audio filters in 2 decks using Web Audio API.



COMPATIBILITY (1)

Operating systems:

- Windows 10
- Linux
- Mac OS

Browsers:

- Google Chrome
- Microsoft Edge
- Safari

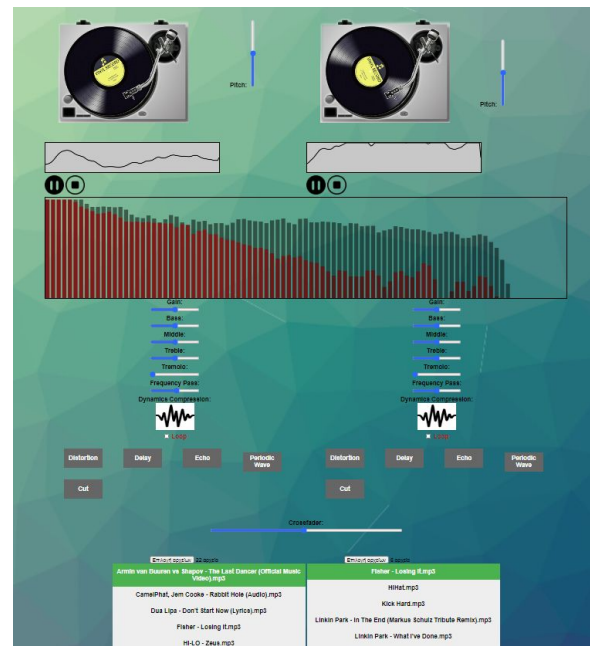
COMPATIBILITY (2)

Works with some functionality issues:

- Mozilla Firefox
- Opera

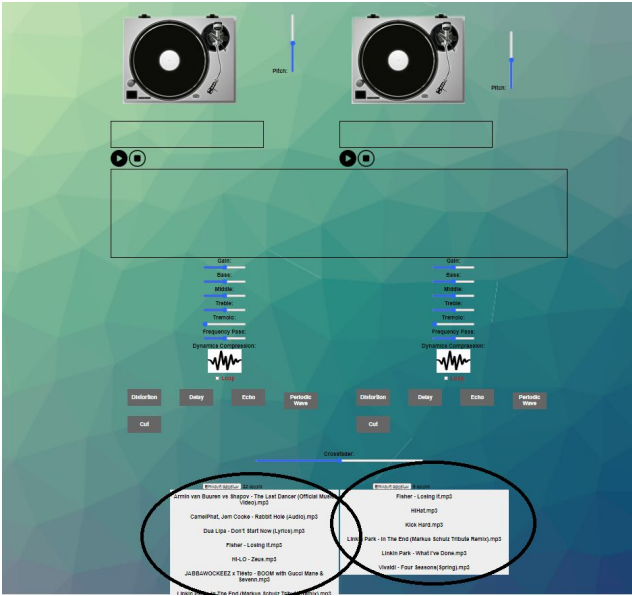
USER INTERFACE

- User-friendly colors and buttons
- Layout based on other popular DJ virtual environments

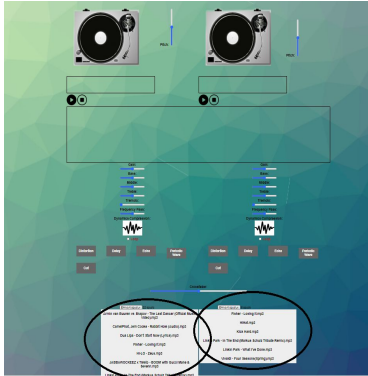


A SIMPLE USE CASE

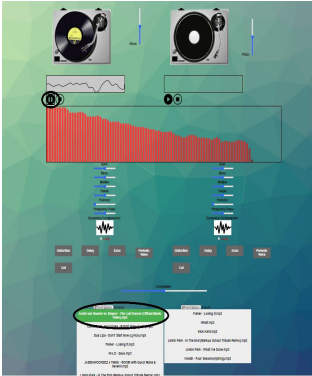
Load an mp3 folder to the decks



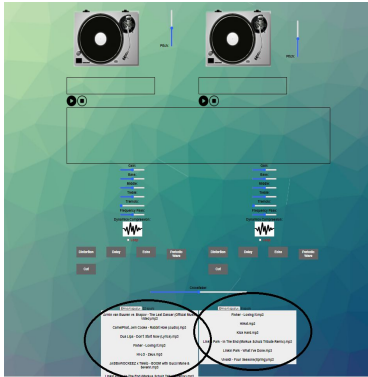
Load an mp3 folder to
the deck(s)



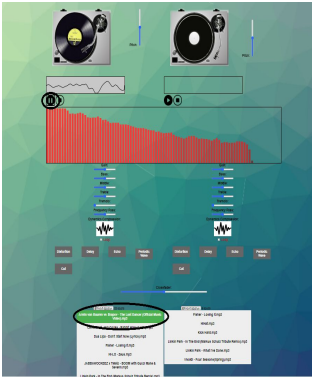
Choose a song
& Press Play



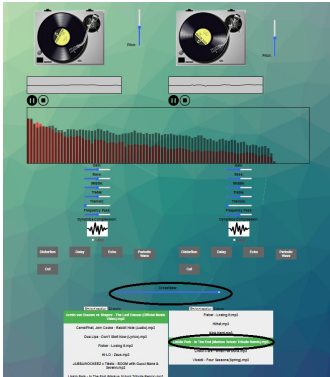
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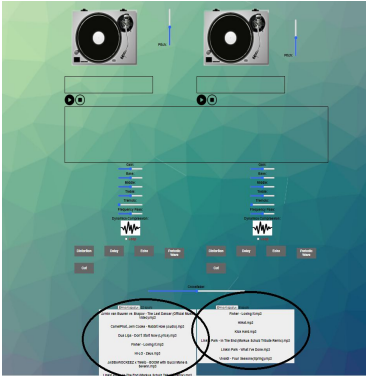
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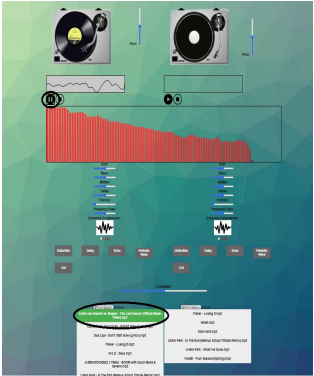
Fade between the decks by using the crossfader



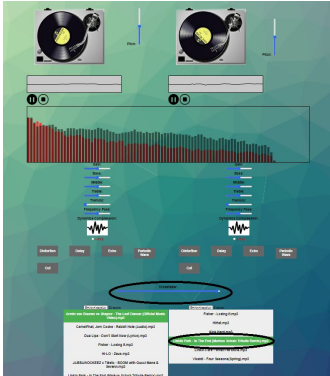
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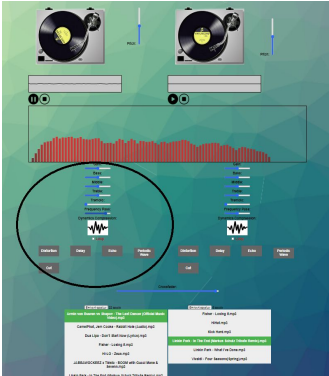
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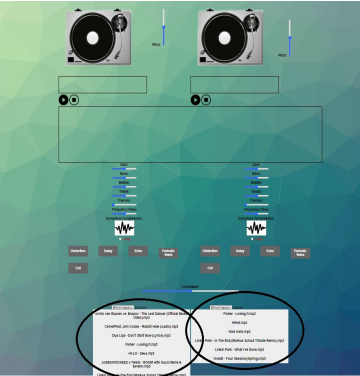
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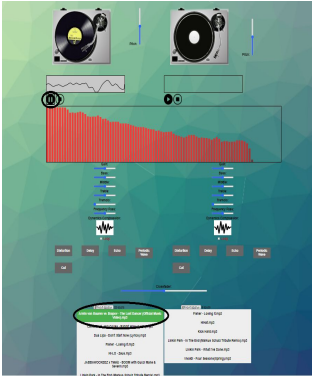
Interact with filters and effects



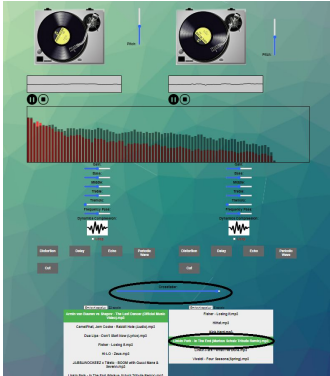
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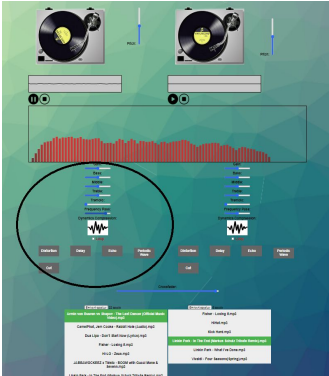
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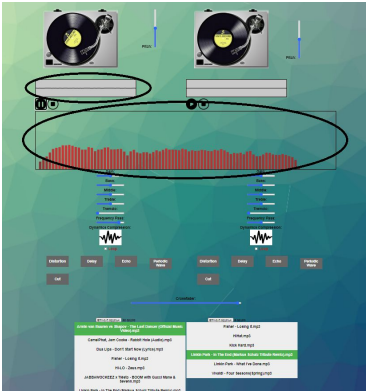
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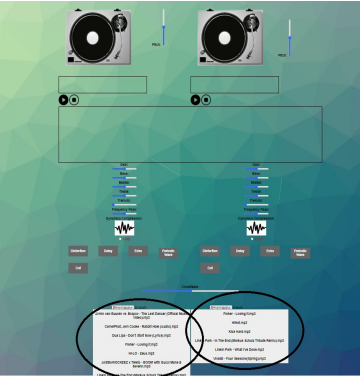
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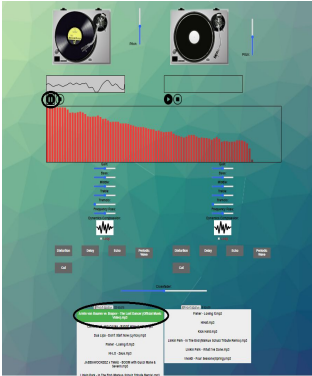
Observe their impact through visualization



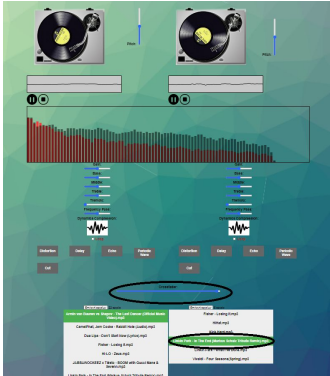
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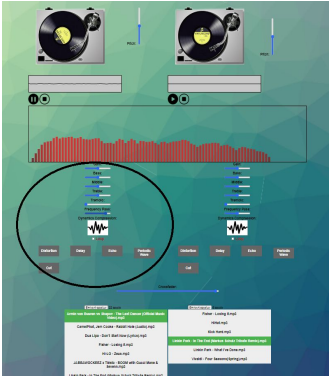
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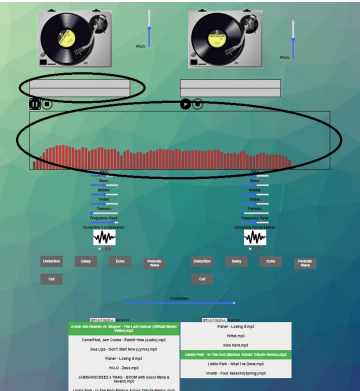
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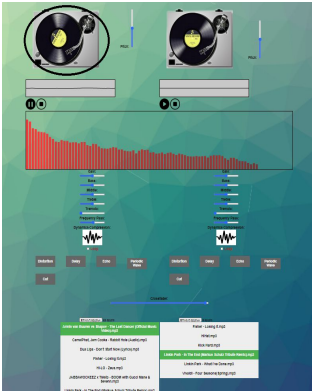
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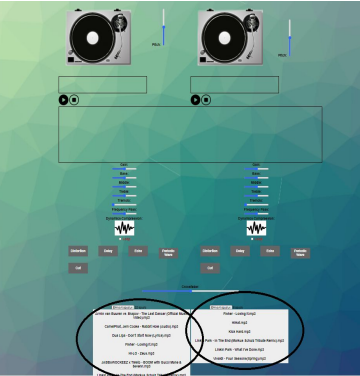
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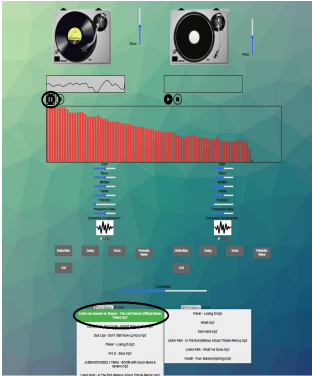
Scratch the vinyl disk



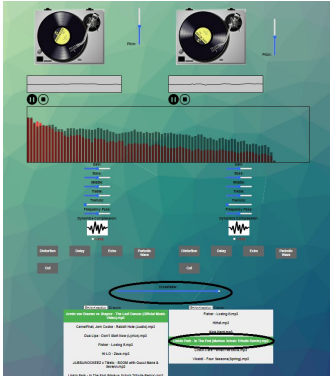
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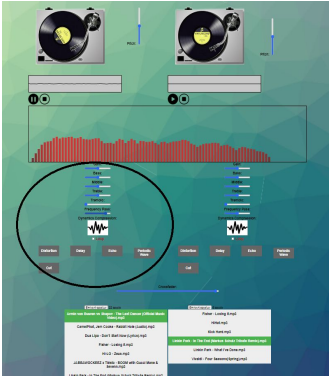
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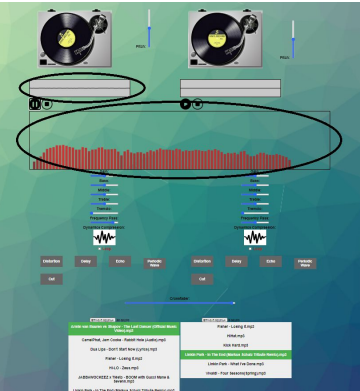
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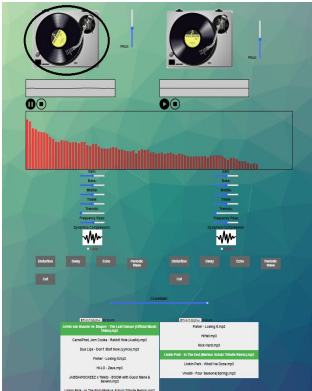
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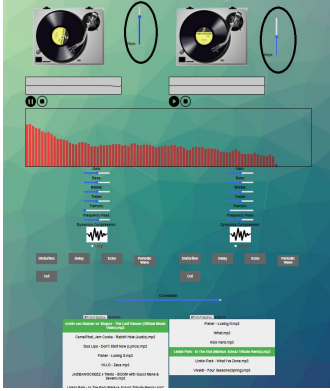
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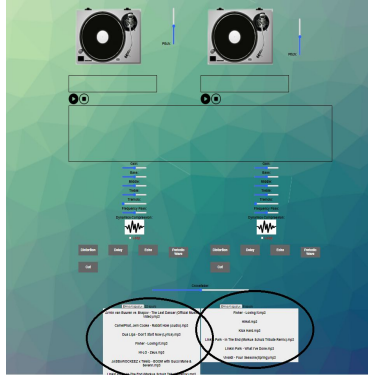
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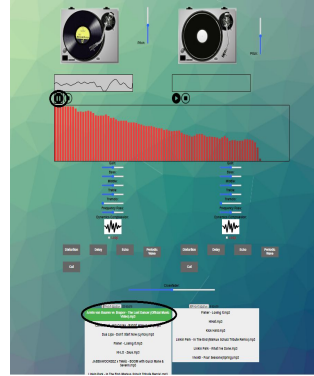
Control song playback rate (speed)



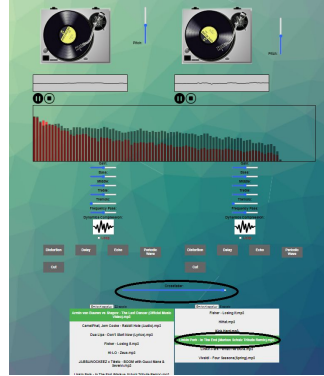
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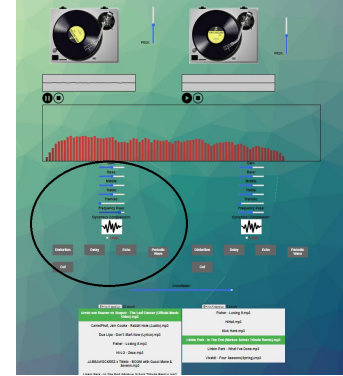
Choose a song & Press Play



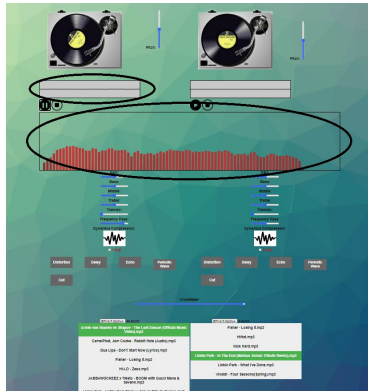
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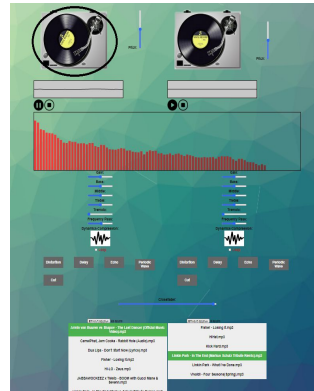
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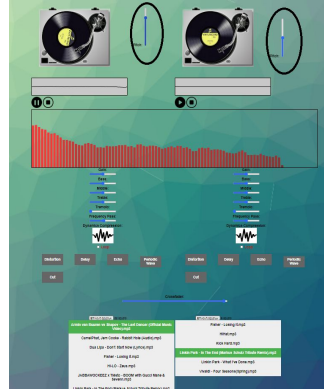
Observe their impact through visualization



Scratch the vinyl disk



Control song playback rate (speed)



Sharpen your mixing skills!

SOUND EFFECTS AND OTHER FEATURES

SOUND EFFECTS (1)

- Gain: volume control (in dB)
- Bass: enhance low frequencies
- Middle: peak middle frequencies
- Treble: enhance high frequencies
- Tremolo: add trembling effect to your audio through an LFO
- Frequency Pass: keep only high/low frequencies
- Dynamics Compression: use a simple compressor with fixed params(attack, release, etc.)
- Loop: play your audio again and again automatically (useful for “Kicks” and “HiHats”...and for your favourite song)
- Pitch: Control audio speed by keeping frequency on the same level

SOUND EFFECTS (2)

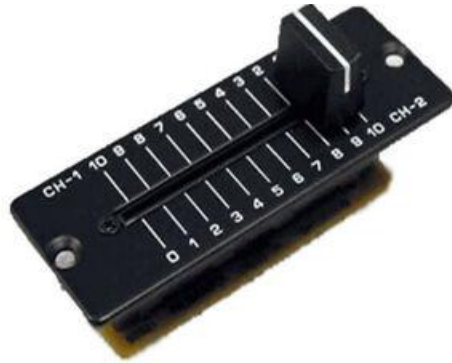
- Distortion: add noise to the audio
- Delay: repeat the last second's audio behind the normal audio
- Echo: mute normal audio and repeatedly echo the last second
- Periodic Wave: produce sound through an oscillator
- Cut: every 300ms of audio include 60ms of silence

Audio combination of both the consoles:

- Crossfader

CROSSFADER

- Mixing between the 2 decks
- Fading smoothly by using a cosine function
- Useful for switching songs swimmingly



VISUALS

- Disk rotation(scratch effect) based on human interaction and pitch value
- A time-domain graph that shows how a signal changes with time in every disk separately
- A stacked, frequency-domain graph that shows how much of the signal lies within each given frequency band over a range of frequencies for the playing instant

DEMO TIME
