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DJ MUSIC FLUX APP





THE DJ DILEMMA

- No all-in-one, pro-grade mixing tool
- Limited creative control
- Sync issues derail the vibe
- Live-mix inefficiencies → flat performances

DJ MUSIC FLUX APP

OUR ULTIMATE DJ SOLUTION

01

Core Track Operations:

Load, play, pause, stop, crossfade, adjust volume, tempo/BPM, & pitch control

02

Effects & Mixing:

Apply sound effects (echo, reverb, flanger, distortion) & equalizer adjustments

03

Advanced DJ Features:

Sync track & microphone input integration

04

Library Management:

Search tracks & download mashups



DIGITAL DJ PRO

DECK A

Glass Animals - Heat Waves.mp3 0:49 3:59

MASTER

LOAD SYNC

JOG SEEK

HIGH MID LOW VOL

TEMPO 100%

EFFECTS

ECHO REVERB FLANGER

DISTORT LOW PASS HIGH PASS

INTENSITY +50.0 WET/DRY +0.6

DECK B

Avicii - The Nights (FIFA 15 Soundtrack) 0:59 2:55

MASTER

LOAD SYNC

JOG SEEK

HIGH MID LOW VOL

TEMPO 100%

EFFECTS

ECHO REVERB FLANGER

DISTORT LOW PASS HIGH PASS

INTENSITY +50.0 WET/DRY +0.6 FEEDBACK +0.5

SWAP DECK A MASTER DECK B MASTER

DJ PRO

RECORDING

REC Ready to Rec...
 Include Microphone

CROSSFAADER

1.0s

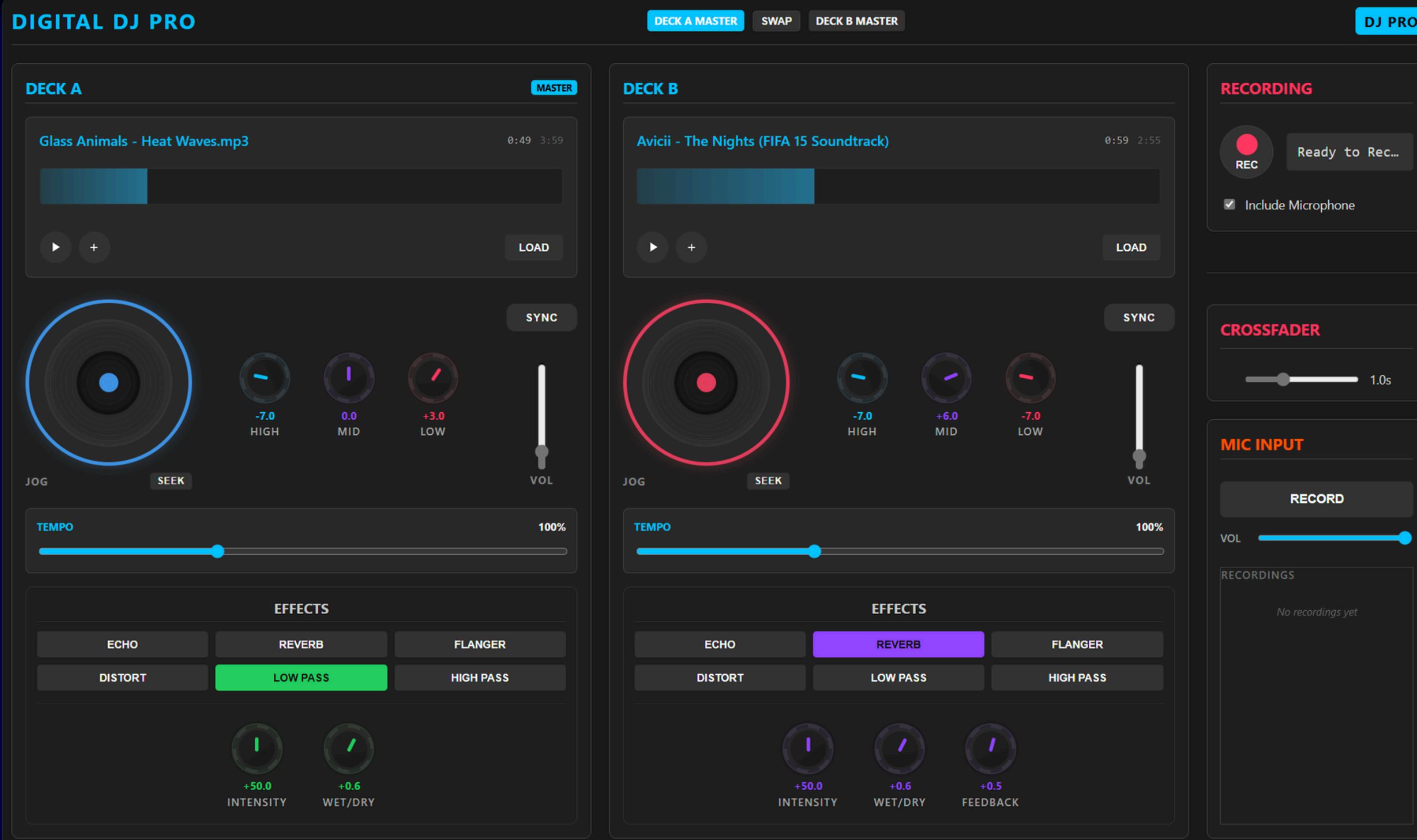
MIC INPUT

RECORD

VOL

Recordings

No recordings yet



DJ MUSIC FLUX APP

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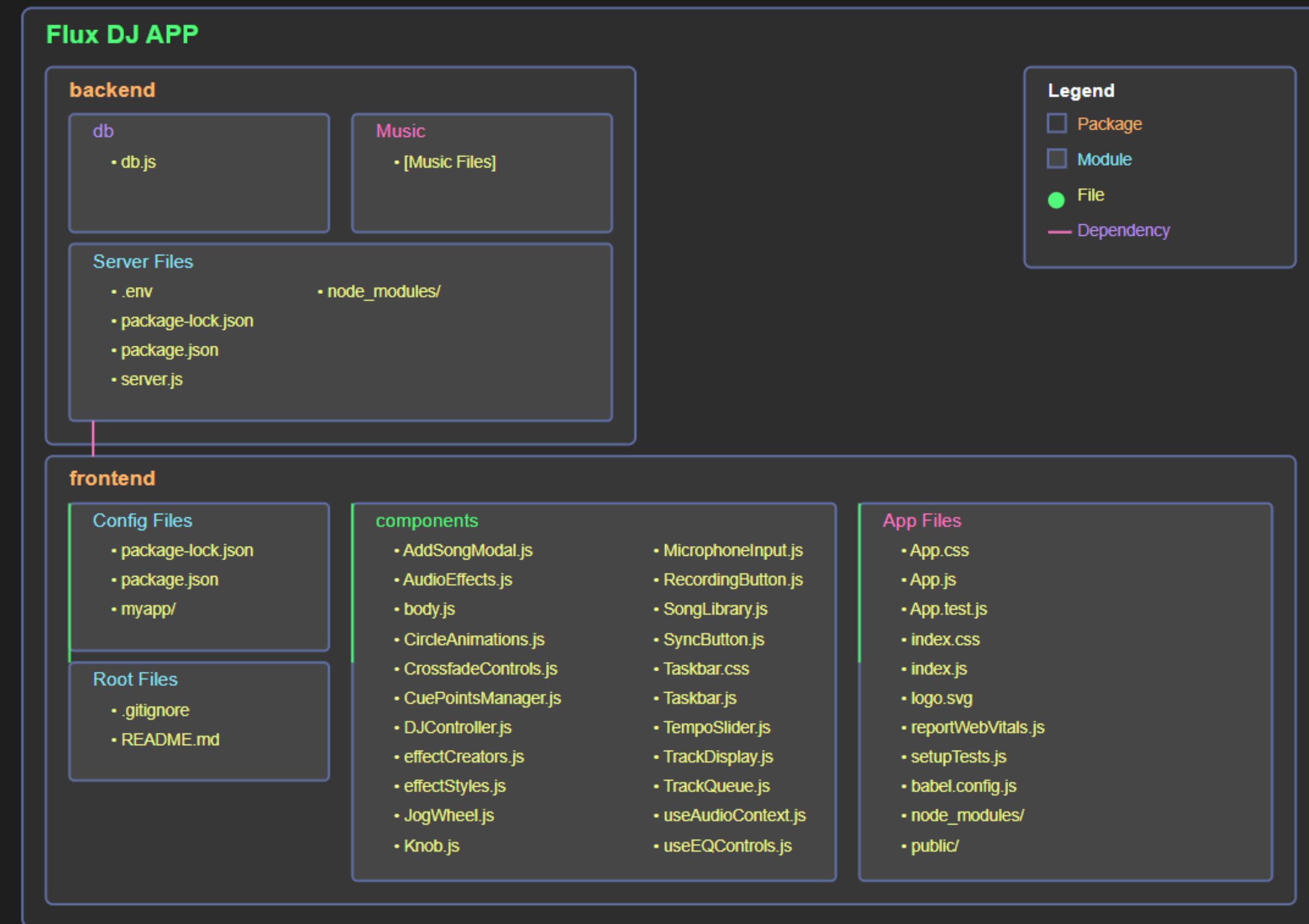
ARCHITECTURE



Flux DJ Music App - Architecture

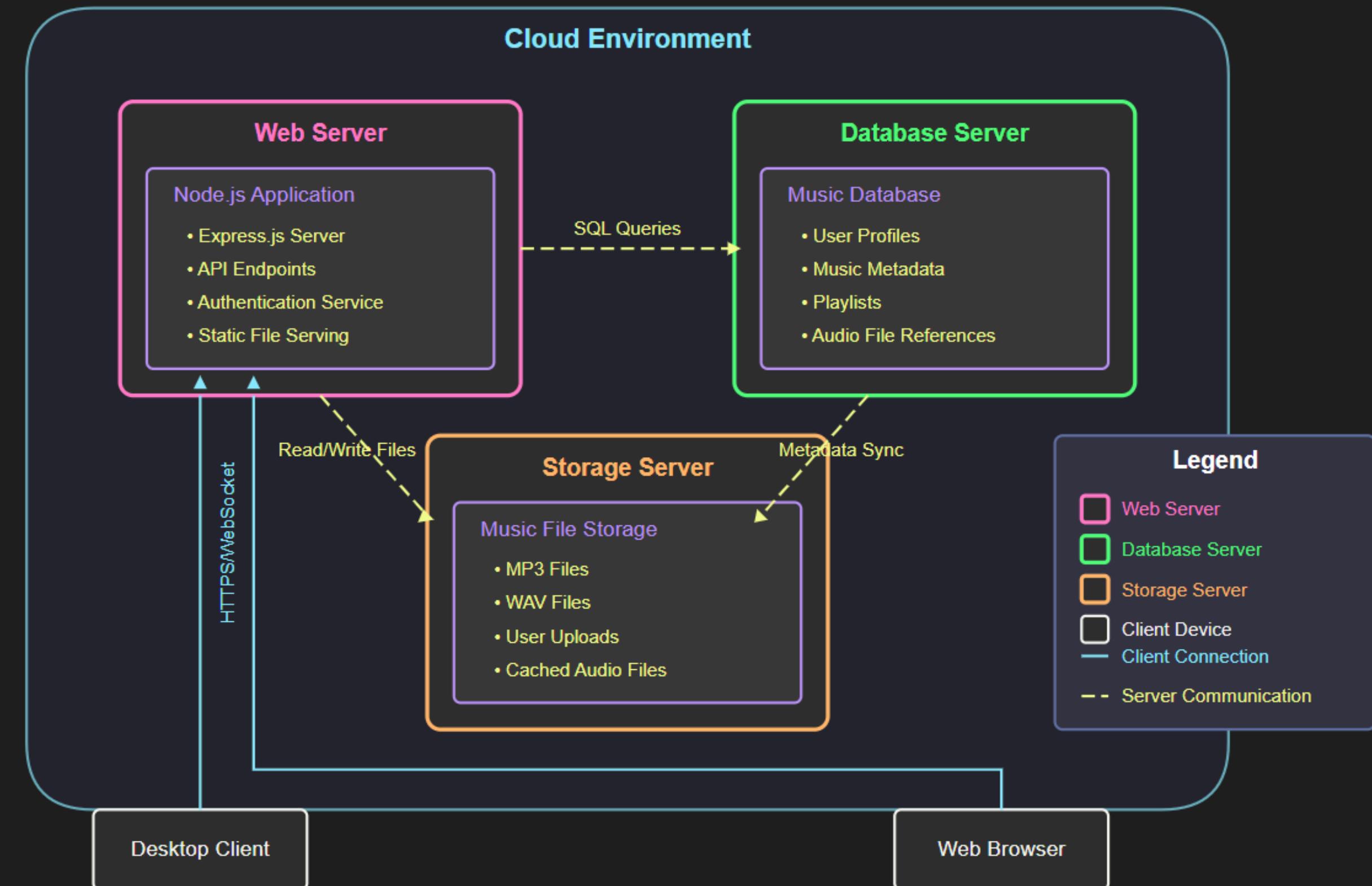
PACKAGE DIAGRAM

2-TIER ARCHITECTURE



Flux DJ Music App - Deployment Diagram

DEPLOYMENT DIAGRAM



DJ MUSIC FLUX APP

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PROJECT PLANNER





WORK BREAKDOWN STRUCTURE (WBS)

- Core DJ Features
- Effects and Mixing
- Library and Playlist Management
- Advanced DJ Features

Tools:

- Trello (Task Tracking)
- JEST (Testing)
- Daily SCRUM Meetings

Sprint 0

Main Controller Interface

Main UI Design

Track Management (start)

Backend Setup

Database Management

API Development

Utilities Hooks

Sprint 1

Track Management (finish)

Taskbar Navigation

Audio Processing

Equalizer Controls

Audio Effects

Real-time Controls (start)

Jog Wheels

Sprint 2

Crossfade Functionality

Real-time Controls (finish)

Knobs Sliders

Playback Controls

Synchronization Recording

Deck Synchronization

Session Recording

Additional Components

Microphone Input

Sprint 3

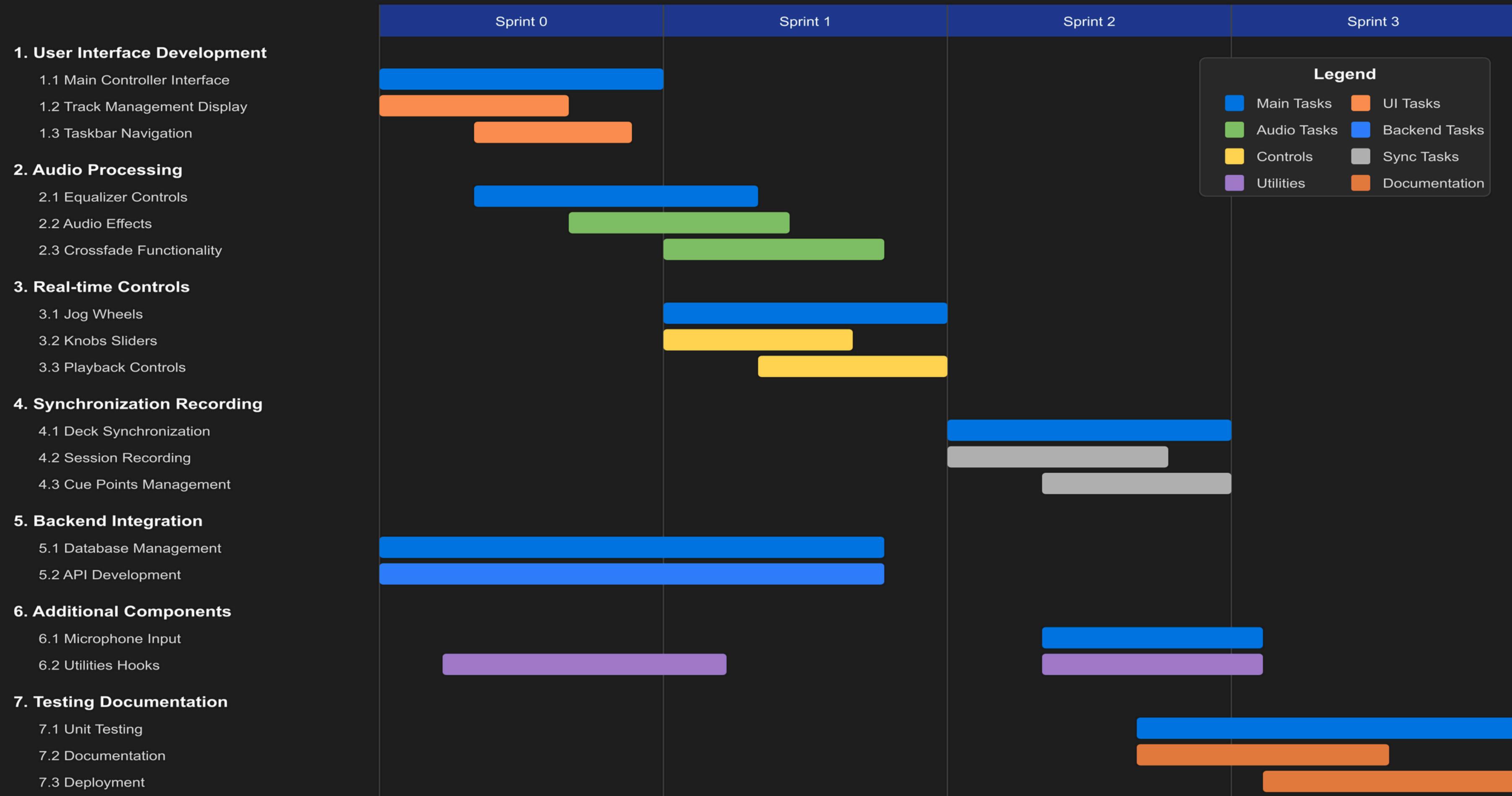
Cue Points Management

Testing Documentation

Unit Testing

Documentation

Flux DJ Application: Project Gantt Chart



USER STORIES



Story ID: S001

Story Title: Load Track

User Story:

As a: DJ

I want: to load a track from my device or cloud storage,
so that: I can prepare it for playback and mixing.

Importance:

5/5

Acceptance Criteria

I can browse and select a track from my device or cloud storage.
The selected track loads into a deck and is ready for playback.
The system displays a confirmation if the track is successfully loaded.

Type:



Core DJ Features



Effect and Mixing



Playlist Management



Advance Features

Story ID: S011

Story Title: Apply Sound Effects

User Story:

As a: DJ

I want: to apply sound effects like echo, reverb, and flanger to my tracks

so that: I can enhance my mix and create a unique sound.

Importance:

5/5

Estimate:

3

Acceptance Criteria

I can select different sound effects from a list.

I can adjust effect intensity in real time.

The effect is applied without audio lag.

Type:



Core DJ Features



Effect and Mixing



Playlist Management



Advance Features

Story ID: S030

Story Title: Microphone Input

User Story:

As a: DJ

I want: to add live microphone input

So that: I can interact with my audience during a set

Importance:

4/5

Estimate:

3 Story Points

Acceptance Criteria

- User can enable or disable microphone input.
- Mic volume control is independent of track volume.
- Echo and reverb effects are available for mic input.
- Mic input does not affect Auto-Mix mode.

Type:



Core DJ Features



Effect and Mixing



Playlist Management



Advance Features

DJ MUSIC FLUX APP

TRELLO BOARD

The screenshot shows a Trello board with the following structure:

- To Do**: Contains one card: "Meeting" (checked) with due date "Mar 1 - Mar 1".
- Product Backlog**:
 - Core DJ Features**: Contains one card: "Core DJ Features" (checked).
 - Effects and Mixing**: Contains one card: "Effects and Mixing" (checked).
 - Playlist Management**: Contains one card: "Playlist Management" (checked).
 - Advanced DJ Features**: Contains one card: "Advance DJ Features" (checked).
- Sprint Backlog**: Contains one card: "+ Add a card".
- Ongoing**: Contains one card: "+ Add a card".
- Completed**:
 - Core DJ Features**: Contains five cards: "1. Load Track", "2. Play Track", "3. Pause Track", "4. Stop Track", and "5. Crossfade Between Tracks".
 - Core DJ Features**: Contains one card: "Core DJ Features" (checked).

At the top of the board, there are several navigation and settings icons: Flux, Workspace visible, Board, SE-Project, Power-Ups, Automation, Filters, Share, and a user icon.

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TESTING



BLACK BOX TESTING

Equivalence Class Partitioning (ECP)

Feature	Parameter	Valid Classes	Invalid Classes
Load Track	File Type	.mp3, .wav, .flac	.txt, .exe
Adjust Volume	Volume %	0-100%	< 0%, > 100%
Apply Sound Effects	Intensity %	0-100%	< 0%, > 100%



BLACK BOX TESTING

Boundary Value Analysis (BVA)

Feature	Parameter	Test Values
Load Track	File Type	.txt, .exe, .mp3, .wav
Adjust Volume	Volume %	-1%, 0%, 1%, 99%, 100%, 101%
Apply Sound Effects	Intensity %	-1%, 0%, 1%, 99%, 100%, 101%





DJ MUSIC FLUX APP



WHITE BOX TESTING

```
Test Suites: 4 failed, 12 passed, 16 total
Tests:      7 failed, 150 passed, 157 total
Snapshots:  0 total
Time:       19.778 s
Ran all test suites.
```



JEST REPORT

All files src/components

88.62% Statements 849/958 77.8% Branches 389/500 78.49% Functions 146/186 89.33% Lines 829/928

Press *n* or *j* to go to the next uncovered block, *b*, *p* or *k* for the previous block.Filter:

File	Statements	Branches	Functions	Lines					
AddSongModal.js	<div style="width: 93.1%;"><div style="width: 1px; background-color: white;"></div></div>	93.1%	27/29	87.5%	71.42%	5/7	93.1%	27/29	
AudioEffects.js	<div style="width: 95.07%;"><div style="width: 1px; background-color: white;"></div></div>	95.07%	193/203	85.71%	66/77	86.36%	19/22	95.43%	188/197
ControlButtons.js	<div style="width: 94.59%;"><div style="width: 1px; background-color: white;"></div></div>	94.59%	35/37	78.94%	15/19	88.88%	8/9	97.22%	35/36
CuePointsManager.js	<div style="width: 89.47%;"><div style="width: 1px; background-color: white;"></div></div>	89.47%	34/38	74.35%	29/39	84.61%	11/13	89.18%	33/37
DJController.js	<div style="width: 65.21%;"><div style="width: 1px; background-color: yellow;"></div><div style="width: 1px; background-color: white;"></div></div>	65.21%	30/46	60.52%	23/38	27.27%	3/11	75%	30/40
JogWheel.js	<div style="width: 98.55%;"><div style="width: 1px; background-color: green;"></div></div>	98.55%	68/69	96.22%	51/53	90%	9/10	98.46%	64/65
Knob.js	<div style="width: 100%;"><div style="width: 1px; background-color: green;"></div></div>	100%	25/25	87.5%	7/8	100%	4/4	100%	24/24
MicrophoneInput.js	<div style="width: 88.15%;"><div style="width: 1px; background-color: green;"></div></div>	88.15%	67/76	73.33%	33/45	90.47%	19/21	87.5%	63/72
RecordingButton.js	<div style="width: 64.4%;"><div style="width: 1px; background-color: yellow;"></div><div style="width: 1px; background-color: white;"></div></div>	64.4%	76/118	55.55%	35/63	52.94%	9/17	64.95%	76/117
SongLibrary.js	<div style="width: 100%;"><div style="width: 1px; background-color: green;"></div></div>	100%	22/22	100%	4/4	100%	10/10	100%	22/22
SyncButton.js	<div style="width: 100%;"><div style="width: 1px; background-color: green;"></div></div>	100%	20/20	100%	21/21	100%	3/3	100%	20/20
Taskbar.js	<div style="width: 50%;"><div style="width: 1px; background-color: yellow;"></div><div style="width: 1px; background-color: white;"></div></div>	50%	1/2	100%	0/0	0%	0/1	50%	1/2
TempoSlider.js	<div style="width: 88.88%;"><div style="width: 1px; background-color: green;"></div></div>	88.88%	24/27	56.25%	9/16	71.42%	5/7	88.88%	24/27
TrackDisplay.js	<div style="width: 91.3%;"><div style="width: 1px; background-color: green;"></div></div>	91.3%	105/115	73.17%	30/41	77.77%	21/27	92.1%	105/114
TrackPlayback.js	<div style="width: 72.72%;"><div style="width: 1px; background-color: yellow;"></div><div style="width: 1px; background-color: white;"></div></div>	72.72%	24/33	80.76%	21/26	55.55%	5/9	71.87%	23/32
VolumeSlider.js	<div style="width: 100%;"><div style="width: 1px; background-color: green;"></div></div>	100%	15/15	100%	7/7	100%	3/3	100%	15/15
useCrossfadeAudio.js	<div style="width: 100%;"><div style="width: 1px; background-color: green;"></div></div>	100%	27/27	100%	11/11	100%	5/5	100%	24/24
useEQControls.js	<div style="width: 100%;"><div style="width: 1px; background-color: green;"></div></div>	100%	56/56	81.25%	13/16	100%	7/7	100%	55/55

FUTURE IMPROVEMENTS

- Custom Track Libraries
- User Personalized Settings
- AI Automatic Vibe Mixer
- Waveforms Display



CONCLUSION

Lessons Learned

- SCRUM + daily meetings ensured steady progress.
- Trello streamlined task tracking and prioritization.
- Testing ensured app reliability.

Team Reflections

- Clear roles and communication improved teamwork.
- Testing complexity highlighted JEST's value.
- User feedback drove rapid iterations.

Final Thoughts

- Delivered a reliable DJ app with modular, tested code.
- Agile practices enable future scalability.

