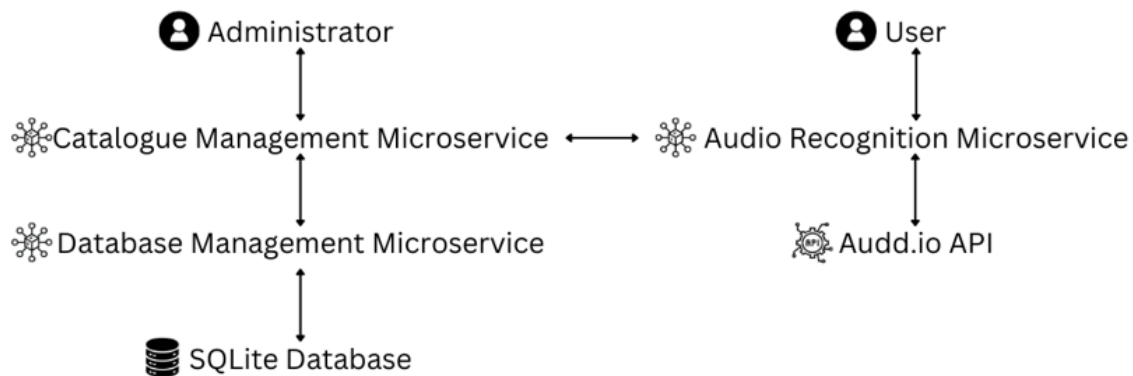# Shamzam Microservices Design

1. Microservice Architecture Overview

The Shamzam MVP consists of three microservices that interact as follows:

1. **Catalogue Management Microservice (Port 3000)** – Handles administrative tasks for managing tracks.
2. **Database Management Microservice (Port 3001)** – Interacts directly with the SQLite database.
3. **Audio Recognition Microservice (Port 3002)** – Identifies audio fragments using AudD.io and retrieves track information.

2. Microservice Endpoint Diagrams

Catalogue Management Microservice (Port 3000)

Verb	Resource	Response Codes	JSON Input	JSON Output
POST	/tracks	201, 400, 500	{"title": "...", "encoded_track": "..."}	{"title": "...", "message": "Track added successfully"}
DELETE	/tracks/{title}	200, 404, 500	N/A	{"message": "Track deleted successfully"}
GET	/tracks	200, 500	N/A	[{ "title": "..."}, ...]
GET	/tracks/search	200, 404, 500	Query param: title	{"title": "..."}

Database Management Microservice (Port 3001)

Verb	Resource	Response Codes	JSON Input	JSON Output
POST	`/db/tracks`	201, 400, 500	`{"title": "...", "encoded_track" : "..."}`	`{"title": "...", "message": "Track added successfully"}`
DELETE	`/db/tracks/{title}`	200, 404, 500	N/A	`{"message": "Track deleted successfully"}`
GET	`/db/tracks`	200, 500	N/A	`[{"title": "..."}, ...]`
GET	`/db/tracks/search`	200, 404, 500	Query param: `title`	`{"title": "..."}`

Audio Recognition Microservice (Port 3002)

Verb	Resource	Response Codes	JSON Input	JSON Output
POST	`/recognise`	200, 400, 404, 500	`{"encoded_track_fragment": "..."}`	`{"title": "..."}` or `{"error": "Track not recognised"}`