Part-2 OLTP Queries
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Github Link - ashutosh-kumar10/BDS-Assignment (github.com)
Loom Video Link - https://www.loom.com/share/2fd88791aa414995b18de8fb35c64a78

Query Execution Snapshot:

1) Query to filter and sort by 'track_genre' (alphabetical order)

```
db.spotify.find({ track_genre: 'acoustic' }).sort({ track_genre: 1 });
```


2)Example: Retrieve tracks in the 'acoustic' genre, sorted by popularity in descending order.

```
db.spotify.createIndex({ track_genre: 1 });
db.spotify.createIndex({ popularity: -1 });
// Sorting query using aggregation pipeline
db.spotify.aggregate([
  { $match: { track_genre: 'acoustic' } }, // Filtering
  { $sort: { popularity: -1 } } // Sorting by popularity in descending order
]);
```


3) Covered Query for Retrieving Acoustic Tracks

```
// Create an index on 'track_genre'
db.spotify.createIndex({ track_genre: 1 });

// Covered query using the index
db.spotify.find({ track_genre: 'acoustic' }, {track_id: 1, track_genre: 1 });
```
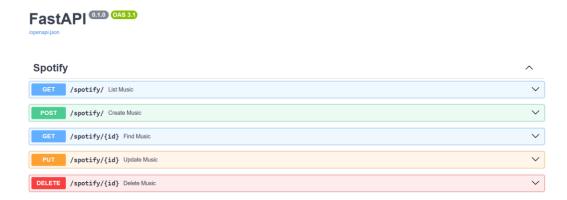

4) Partitioning (Example using Range-based Partitioning):

```
// Assuming 'time_signature' is a relevant key for partitioning
db.spotify.createIndex({ time_signature: 1 });  // Indexing for better query performance
// Query for data within a specific partition (e.g., time_signature = 4)
db.spotify.find({ time_signature: "4" });
```

```
Atlas atlas-erydsr-shard-0 [primary] spotify> db.spotify.createIndex({ time_signature: 1 });
time_signature_1
Atlas atlas-erydsr-shard-0 [primary] spotify> db.spotify.find({ time_signature: "4" });
[
  {
    _id: ObjectId("6587223b8bd7b22648c891c3"),
    track_id: '5SuOikwiRyPMVoIQDJUgSV',
    artists: 'Gen Hoshino',
    album_name: 'Comedy',
```

API Service End Points

FastAPI 0.1.0 OAS 3.1
/openapi.json

Spotify

GET	/spotify/ List Music
POST	/spotify/ Create Music
GET	/spotify/{id} Find Music
PUT	/spotify/{id} Update Music
DELETE	/spotify/{id} Delete Music

Response for calling spotify/{id} end point for track id - 4qPNDBW1i3p13qLCt0Ki3A

```
curl -X 'GET' \
  'http://localhost:8000/spotify/4qPNDBW1i3p13qLCt0Ki3A' \
  -H 'accept: application/json'
```

Request URL

```
http://localhost:8000/spotify/4qPNDBW1i3p13qLCt0Ki3A
```

Server response

Code	Details
200	**Response body**

```
{
  "track_id": "4qPNDBW1i3p13qLCt0Ki3A",
  "artists": "Ben Woodward",
  "album_name": "Ghost (Acoustic)",
  "track_name": "Ghost - Acoustic",
  "popularity": 55,
  "duration_ms": 149610,
  "explicit": "FALSE",
  "danceability": 0.42,
  "energy": 0.166,
```