

## OLTP Queries with MongoDB

```
In [33]: from pymongo import MongoClient
```

## Query to Validate Connectivity

```
In [34]: # Connect to MongoDB (change the connection string accordingly)
client = MongoClient('mongodb://localhost:27017/')
db = client['Spotify'] # Replace 'your_database_name' with your database name
collection = db['train_Data'] # Replace 'your_collection_name' with your collection name

# Fetch data from MongoDB (Read operation)
def fetch_data():
    # Example: Fetch all documents
    cursor = collection.find().limit(5) # Retrieves all documents in the collection
    for document in cursor:
        print(document) # Process each document (you can perform your operations here)
# Run the function to fetch data
fetch_data()
```

```
{'_id': ObjectId('6585961e196812f1ab52efb9'), 'Unnamed: 0': 0, 'track_id': '5SuOikwiRyPMVoIQDJUGSV', 'artists': 'Gen Hoshino', 'album_name': 'Comedy', 'track_name': 'Comedy', 'popularity': 73, 'duration_ms': 230666, 'explicit': False, 'danceability': 0.676, 'energy': 0.461, 'key': 1, 'loudness': -6.746, 'mode': 0, 'speechiness': 0.143, 'acousticness': 0.0322, 'instrumentalness': 1.01e-06, 'liveness': 0.358, 'valence': 0.715, 'tempo': 87.917, 'time_signature': 4, 'track_genre': 'acoustic'}
{'_id': ObjectId('6585961e196812f1ab52efba'), 'Unnamed: 0': 1, '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, 'key': 1, 'loudness': -17.235, 'mode': 1, 'speechiness': 0.0763, 'acousticness': 0.924, 'instrumentalness': 5.56e-06, 'liveness': 0.101, 'valence': 0.267, 'tempo': 77.489, 'time_signature': 4, 'track_genre': 'acoustic'}
{'_id': ObjectId('6585961e196812f1ab52efbb'), 'Unnamed: 0': 2, 'track_id': '1iJBSr7s7jYXzM8EGcbK5b', 'artists': 'Ingrid Michaelson;ZAYN', 'album_name': 'To Begin Again', 'track_name': 'To Begin Again', 'popularity': 57, 'duration_ms': 210826, 'explicit': False, 'danceability': 0.438, 'energy': 0.359, 'key': 0, 'loudness': -9.734, 'mode': 1, 'speechiness': 0.0557, 'acousticness': 0.21, 'instrumentalness': 0.0, 'liveness': 0.117, 'valence': 0.12, 'tempo': 76.332, 'time_signature': 4, 'track_genre': 'acoustic'}
{'_id': ObjectId('6585961e196812f1ab52efbc'), 'Unnamed: 0': 3, 'track_id': '6lfxq3CG4xtTiEg7opyCyx', 'artists': 'Kina Grannis', 'album_name': 'Crazy Rich Asians (Original Motion Picture Soundtrack)', 'track_name': "Can't Help Falling In Love", 'popularity': 71, 'duration_ms': 201933, 'explicit': False, 'danceability': 0.266, 'energy': 0.0596, 'key': 0, 'loudness': -18.515, 'mode': 1, 'speechiness': 0.0363, 'acousticness': 0.905, 'instrumentalness': 7.07e-05, 'liveness': 0.132, 'valence': 0.143, 'tempo': 181.74, 'time_signature': 3, 'track_genre': 'acoustic'}
{'_id': ObjectId('6585961e196812f1ab52efbd'), 'Unnamed: 0': 4, 'track_id': '5vjLSffimiIP26QG5WcN2K', 'artists': 'Chord Overstreet', 'album_name': 'Hold On', 'track_name': 'Hold On', 'popularity': 82, 'duration_ms': 198853, 'explicit': False, 'danceability': 0.618, 'energy': 0.443, 'key': 2, 'loudness': -9.681, 'mode': 1, 'speechiness': 0.0526, 'acousticness': 0.469, 'instrumentalness': 0.0, 'liveness': 0.0829, 'valence': 0.167, 'tempo': 119.949, 'time_signature': 4, 'track_genre': 'acoustic'}
```

## Query to fetch data based on POP Genre

```
In [35]: def fetch_data():

    # Example: Fetch specific documents based on a condition
    specific_documents = collection.find({"track_genre": "pop"}).limit(5)
    for document in specific_documents:
        print(document) # Process each document

    # You can use various query operators (e.g., $eq, $gt, $lt) to fetch data

# Run the function to fetch data
fetch_data()
```

```
{'_id': ObjectId('65859623196812f1ab542c21'), 'Unnamed: 0': 81000, 'track_id': '0VjIjW4GLUZAMYd2vXMi3b', 'artists': 'The Weeknd', 'album_name': 'After Hours', 'track_name': 'Blinding Lights', 'popularity': 91, 'duration_ms': 200040, 'explicit': False, 'danceability': 0.514, 'energy': 0.73, 'key': 1, 'loudness': -5.934, 'mode': 1, 'speechiness': 0.0598, 'acousticness': 0.00146, 'instrumentalness': 9.54e-05, 'liveness': 0.0897, 'valence': 0.334, 'tempo': 171.005, 'time_signature': 4, 'track_genre': 'pop'}
{'_id': ObjectId('65859623196812f1ab542c22'), 'Unnamed: 0': 81001, 'track_id': '3yV2c3cYhkAwSsxAq6nRiv', 'artists': 'Gajendra Verma', 'album_name': 'Table No. 21 (Original Motion Picture Soundtrack)', 'track_name': 'Mann Mera', 'popularity': 74, 'duration_ms': 200120, 'explicit': False, 'danceability': 0.535, 'energy': 0.765, 'key': 1, 'loudness': -7.862, 'mode': 0, 'speechiness': 0.0444, 'acousticness': 0.054, 'instrumentalness': 0.0, 'liveness': 0.0921, 'valence': 0.373, 'tempo': 191.827, 'time_signature': 4, 'track_genre': 'pop'}
{'_id': ObjectId('65859623196812f1ab542c23'), 'Unnamed: 0': 81002, 'track_id': '1aL9518P5G72N92b48tuKw', 'artists': 'AP Dhillon', 'album_name': 'Summer High', 'track_name': 'Summer High', 'popularity': 83, 'duration_ms': 177391, 'explicit': False, 'danceability': 0.86, 'energy': 0.541, 'key': 1, 'loudness': -6.51, 'mode': 0, 'speechiness': 0.0325, 'acousticness': 0.165, 'instrumentalness': 0.163, 'liveness': 0.0663, 'valence': 0.952, 'tempo': 114.984, 'time_signature': 4, 'track_genre': 'pop'}
{'_id': ObjectId('65859623196812f1ab542c24'), 'Unnamed: 0': 81003, 'track_id': '5IgjP7X4th6nMNDh4akUhb', 'artists': 'Chris Brown', 'album_name': 'Indigo (Extended)', 'track_name': 'Under The Influence', 'popularity': 96, 'duration_ms': 184613, 'explicit': True, 'danceability': 0.733, 'energy': 0.69, 'key': 9, 'loudness': -5.529, 'mode': 0, 'speechiness': 0.0427, 'acousticness': 0.0635, 'instrumentalness': 1.18e-06, 'liveness': 0.105, 'valence': 0.31, 'tempo': 116.992, 'time_signature': 4, 'track_genre': 'pop'}
{'_id': ObjectId('65859623196812f1ab542c25'), 'Unnamed: 0': 81004, 'track_id': '7MXVkk9YMctZqd1Srtv4MB', 'artists': 'The Weeknd;Daft Punk', 'album_name': 'Starboy', 'track_name': 'Starboy', 'popularity': 90, 'duration_ms': 230453, 'explicit': True, 'danceability': 0.679, 'energy': 0.587, 'key': 7, 'loudness': -7.015, 'mode': 1, 'speechiness': 0.276, 'acousticness': 0.141, 'instrumentalness': 6.35e-06, 'liveness': 0.137, 'valence': 0.486, 'tempo': 186.003, 'time_signature': 4, 'track_genre': 'pop'}
```

## Fetch a particular song title and update it

```
In [37]: song_to_update = "To Begin Again"

# Define the new title for the song
new_title = "Begin Again"

# Update the song title in MongoDB
result = collection.update_one(
    {"track_name": song_to_update}, # Match criteria for the song to update
    {"$set": {"track_name": new_title}} # Set the new title for the song
)

if result.modified_count > 0:
    print(f"Successfully updated '{song_to_update}' to '{new_title}'")
else:
    print(f"No song titled '{song_to_update}' found for update")
```

Successfully updated 'To Begin Again' to 'Begin Again'

## Add a new song title to the list

```
In [38]: new_song_details = {
    "artists": ["Kailash Kher"],
    "album_name": "Best of Kailash Kher",
    "track_name": "Teri Dewaani",
    "popularity": 70,
    "duration_ms": 240000,
    "explicit": False,
    "danceability": 0.8,
    "energy": 0.7,
    "key": "C",
    "loudness": -5.0,
    "mode": "Major",
    "speechiness": 0.05,
    "acousticness": 0.2,
    "instrumentalness": 0.0,
    "liveness": 0.1,
    "valence": 0.6,
    "tempo": 120.0,
    "time_signature": 4,
    "track_genre": "Pop"
}

# Insert the new song details into MongoDB
result = collection.insert_one(new_song_details)

if result.inserted_id:
    print(f"Successfully added new song '{new_song_details['track_name']}'")
else:
    print("Failed to add new song")
```

Successfully added new song 'Teri Dewaani'

```
In [40]: def fetch_data():  
  
    # Example: Fetch specific documents based on a condition  
    specific_documents = collection.find({"track_name": "Teri Dewaani"}).limit(10)  
    for document in specific_documents:  
        print(document) # Process each document  
  
    # You can use various query operators (e.g., $eq, $gt, $lt) to fetch data  
  
# Run the function to fetch data  
fetch_data()  
  
{'_id': ObjectId('65881314d263a7cbbe2dad06'), 'artists': ['Kailash Kher'],  
'album_name': 'Best of Kailash Kher', 'track_name': 'Teri Dewaani', 'popularity': 70,  
'duration_ms': 240000, 'explicit': False, 'danceability': 0.8,  
'energy': 0.7, 'key': 'C', 'loudness': -5.0, 'mode': 'Major', 'speechiness': 0.05,  
'acousticness': 0.2, 'instrumentalness': 0.0, 'liveness': 0.1,  
'valence': 0.6, 'tempo': 120.0, 'time_signature': 4, 'track_genre': 'Pop'}
```

In [ ]: