**Aror University of Art, Architecture, Design & Heritage Sukkur.**

# Department of Artificial Intelligence and Multimedia Gaming

## Programming for AI (Spring-2025)
## LAB#11

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**Objective of Lab No. 11:**

After performing lab11, students will be able to:

- Learn to interact with databases using SQLAlchemy
- Perform filtering, ordering, grouping, and aggregation
- Convert SQLAlchemy results into Pandas DataFrames for analysis

**Task#01: Create a Database Engine to Interact with Chinook Database and print all the table names from the database.**

**Task#02: Display All records from the Album Table.**

**Task#03: Apply following filtering operations:**

a. Find those rows from the album where artist id is 90

b. Select all those rows from the track table where track duration is longer than 6 minutes

c. Find those tracks from the track table where track name starts with Love

d. Find all those customers who are residents of USA

e. Display all those rows from the invoice where invoice total was in between 10 and 20

f. Find those tracks who are either in 1,2,3 genre (Hint: Use In clause)

g. Find customers whose last name contains 'son'

**Task#04: Display all the albums ordered by title alphabetically.**

**Task#05: Display albums where title starts with 'T'.**

**Task#06: Find the total number of tracks in each Genre, Use Genre Table.**

**Task#07: Find the average track length per media type, Use Media Type Table.**

**Task#08: Find the highest invoice amount per country.**

**Task#09: Convert Track table into pandas data frame and display null values in each column.**