# **MUSIC LIBRARY MANAGEMENT SYSTEM NORMALIZATION**

**Normalization**

UNF (makes): U\_ID, U\_Name, U\_Email, Password, P\_ID, P\_Name, P\_Date

1NF: **U-ID**, U\_Name, U\_Email, Password

**P-ID**, P\_Name, P\_Date

2NF: 1) **U-ID**, U\_Name, U\_Email, Password, P\_ID (FK)

2) **P-ID**, P\_Name, P\_Date

3NF: Same as 2NF

UNF (contains): P\_ID, P\_Name, P\_Date, T\_Date, T\_Name, T\_ID, Duration

1NF: **P-ID**, P\_Name, P\_Date

**T-ID**, T\_Name, T\_Date, Duration

2NF: 1) **P-ID**, P\_Name, P\_Date

2) **T-ID**, T\_Name, T\_Date, Duration

3) P\_ID (PK), T\_ID (FK) / P\_ID (FK), T\_ID (PK)

3NF: Same as 2NF

UNF (listens): U\_ID, U\_Name, U\_Email, Password, T\_Date, T\_Name, T\_ID, Duration

1NF: **U-ID**, U\_Name, U\_Email, Password

**T-ID**, T\_Date, T\_Name, Duration

2NF: 1) **U-ID**, U\_Name, U\_Email, Password

2) **T-ID**, T\_Date, T\_Name, Duration

3) U\_ID (PK), T\_ID (FK) / U\_ID (FK), T\_ID (PK)

3NF: Same as 2NF

UNF (belongs): T\_Date, T\_Name, T\_ID, Duration, G\_ID, G\_Name

1NF: **T-ID**, T\_Date, T\_Name, Duration, **G-ID**, G\_Name

2NF: 1) **T-ID**, T\_Date, T\_Name, Duration

2) **G-ID**, G\_Name

3) T\_ID (PK), G\_ID (FK) / T\_ID (FK), G\_ID (PK)

3NF: Same as 2NF

UNF (composes): Artist\_ID, Artist\_Name, Nationality, T\_Date, T\_ID, T\_Name, Duration

1NF: **Artist-ID**, Artist\_Name, Nationality

**T-ID**, T\_Date, T\_Name, Duration

2NF: 1) **Artist-ID**, Artist\_Name, Nationality

2) **T-ID** ,T\_Date, T\_Name, Duration

3) Artist\_ID (PK), T\_ID (FK) / Artist\_ID (FK), T\_ID (PK)

3NF: Same as 2NF

UNF (creates): Artist\_ID, Artist\_Name, Nationality, Album\_ID, Album\_Name, Album\_date

1NF: **Artist-ID**, Artist\_Name, Nationality

**Album-ID**, Album\_Name, Album\_date

2NF: 1) **Artist-ID**, Artist\_Name, Nationality

2) **Album-ID**, Album\_Name, Album\_date

3) Artist\_ID (PK), Album\_ID (FK) / Artist\_ID(FK), Album\_ID (PK)

3NF: Same as 2NF

UNF (has): Album\_ID, Album\_Name, Album\_Date, T\_Date, T\_Name, T\_ID, Duration

1NF: **Album-ID**, Album\_Name, Album\_Date

**T-ID**, T\_Name, T\_Date, Duration

2NF: 1) **Album-ID**, Album\_Name, Album\_Date, T\_ID (FK)

2) **T-ID**, T\_Name, T\_Date, Duration

3NF: Same as 2NF

**Finalization**

1) U-ID, U\_Name, U\_Email, Password, P\_ID (FK)

2) P-ID, P\_Name, P\_Date

~~3) P-ID, P\_Name, P\_Date~~

4) T-ID, T\_Name, T\_Date, Duration

5) P\_ID (PK), T\_ID (FK)

6) U-ID, U\_Name, U\_Email, Password

~~7) T-ID, T\_Date, T\_Name, Duration~~

8) U\_ID (PK), T\_ID (FK)

~~9) T-ID, T\_Date, T\_Name, Duration~~

10) G-ID, G\_Name

11) T\_ID (PK), G\_ID (FK)

12) Artist-ID, Artist\_Name, Nationality

~~13) T-ID ,T\_Date, T\_Name, Duration~~

14) Artist\_ID (PK), T\_ID (FK)

~~15) Artist-ID, Artist\_Name, Nationality~~

16) Album-ID, Album\_Name, Album\_date

17) Artist\_ID (PK), Album\_ID (FK)

18) Album-ID, Album\_Name, Album\_Date, T\_ID (FK)

~~19) T-ID, T\_Name, T\_Date, Duration~~

## **Final Tables**

1)**U-ID**, U\_Name, U\_Email, Password

2) **P-ID**, P\_Name, P\_Date

3) **U-ID**, U\_Name, U\_Email, Password, P\_ID (FK)

4) **T-ID**, T\_Name, T\_Date, Duration

5 **Artist-ID**, Artist\_Name, Nationality

6)**Album-ID**, Album\_Name, Album\_Date

7) **Album-ID**, Album\_Name, Album\_Date, T\_ID (FK)

8) **G-ID**, G\_Name

9) P\_ID (PK), T\_ID (FK)

10) U\_ID (PK), T\_ID (FK)

11) T\_ID (PK), G\_ID (FK)

12) Artist\_ID (PK), T\_ID (FK)

13) Artist\_ID (PK), Album\_ID (FK)

**Total tables: 13**