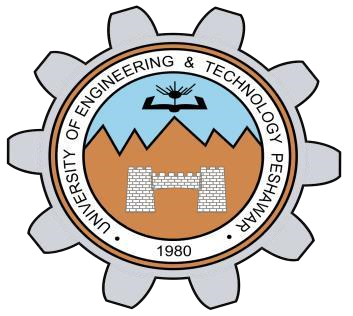
**Key Milestone 2: Normalized Relational Schema**



**DBMS Final Project**

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“On my honor, as student of University of Engineering and Technology, I have neither given nor received unauthorized assistance on this academic work”

Department of Computer Systems Engineering

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**Project: Restaurant Management System**

**Converted Relational Schema (from Conceptual Schema):**

1. **users:**

users(

id PK,

name,

phone,

email,

address,

password

)

1. **employees:**

employees(

id PK,

name,

role,

phone,

salary,

shift\_timing,

date\_of\_joining

)

1. **carts:**

carts(

id PK,

user\_id FK,

food\_id FK,

quantity

)

1. **Food Item:**

food(

id PK,

title,

details,

price,

image)

1. **orders:**

orders(

id PK,

food\_id FK,

user\_id FK,

employee\_id FK

total\_amount,

order\_status

)

1. **tables:**

tables(

id PK,

details,

capacity,

status

)

1. **books:**

books(

id PK,

table\_id FK,

phone,

guests,

date,

time

)

1. **reviews:**

reviews(

id PK,

food\_id FK,

user\_id FK,

review,

rating,

date

)

1. **invoice:**

invoice(

id PK,

order\_id FK,

user\_id FK,

amount,

status,

date

)

**Stepwise Normalization To 3NF:**

1. **users:**

**Unnormalized:**

users(id PK, name, phone, email, address, password)

**1NF:**

* All Attributes are atomic.
* Already in 1NF.

**2NF:**

* id is the primary key.
* No partial dependency exists.

**3NF:**

* No transitive dependency.

**Final Normalized Form:**

users(id PK, name, phone, email, address, password)

1. **employees:**

**Unnormalized:**

employees(id PK, name, role, phone, salary, shift\_timing, date\_of\_joining)

**1NF:**

* All Attributes are atomic.
* Already in 1NF.

**2NF:**

* id is the primary key.
* No partial dependency exists.

**3NF:**

* All non-key attributes are fully dependent on id.

**Final Normalized Form:**

employees(id PK, name, role, phone, salary, date\_of\_joining, shift\_timing)

1. **books:**

**Unnormalized:**

books(id PK, table\_id FK, phone, guests, date)

**1NF:**

* All Attributes are atomic.
* Already in 1NF.

**2NF:**

* id is the primary key.
* No partial dependency exists.

**3NF:**

* No transitive dependency. All fields depend only on id.

**Final Normalized Form:**

books(id PK, table\_id FK, phone, guests, date)

1. **carts:**

**Unnormalized:**

carts(id PK, user\_id FK, food\_id FK, quantity)

**1NF:**

* All Attributes are atomic.
* Already in 1NF.

**2NF:**

* id is the primary key.
* No partial dependency exists.

**3NF:**

* No transitive dependency

**Final Normalized Form:**

carts(id PK, user\_id FK, food\_id FK, quantity)

1. **tables:**

**Unnormalized:**

tables(id PK, details, capacity, status)

**1NF:**

* All Attributes are atomic.
* Already in 1NF.

**2NF:**

* id is the primary key.
* No partial dependency exists.

**3NF:**

* id is primary key.
* No transitive dependency.

**Final Normalized Form:**

tables(id PK, details, capacity, status)

1. **orders:**

**Unnormalized:**

orders(id PK, food\_id FK, user\_id FK, employee\_id FK, total\_amount, order\_status)

**1NF:**

* All Attributes are atomic.
* Already in 1NF.

**2NF:**

* id is the primary key.
* No partial dependency.

**3NF:**

* id is primary key.

**Final Normalized Form:**

orders(id PK, food\_id FK, user\_id FK, employee\_id FK, total\_amount, order\_status)

1. **Review:**

**Unnormalized:**

reviews(id PK, food\_id FK, user\_id FK, review, rating, date)

**1NF:**

* All Attributes are atomic.
* Already in 1NF.

**2NF:**

* id is the primary key.
* No partial dependency exists.

**3NF:**

* No transitive dependency.

**Final Normalized Form:**

reviews(id PK, food\_id FK, user\_id FK, review, rating, date)

1. **Invoice:**

**Unnormalized:**

invoice(id PK, order\_id FK, user\_id FK, amount, status, date)

**1NF:**

* All Attributes are atomic.
* Already in 1NF.

**2NF:**

* id is the primary key.
* No partial dependency exists.

**3NF:**

* No transitive dependency.

**Final Normalized Form:**

invoice(id PK, order\_id FK, user\_id FK, amount, status, date)