**NORMALIZTION OF THE TABLES IN THE GROCERY STORE MANAGEMENT SYSTEM DATABASE**

**Products(Item\_Code , Item\_Name, Item\_Price , GST, Discount\_Offer , Stock)**

Item\_Code -> Item\_Name , Item\_Price , GST , Discount\_Offer ,Stock

Item\_Name -> Item\_Code , Item\_Price , GST , Discount\_Offer ,Stock

Prime attributes :- Item\_Code , Item\_Name

Non Prime Attributes :- Item\_Price , GST , Discount\_Offer ,Stock

Candidate Key :- Item\_Code , Item\_Name

1NF - Table has a primary key as well as 2 candidate keys and there are no multivalued or composite attributes. Hence 1NF.

2NF - Since only prime attributes can derive non prime attributes , thus above table is in 2NF.

3NF - Since there is no transitive dependency we can say that above table is in 3NF.

**Product\_Category(Category\_Id , Category\_Name , Item\_Code)**

Category\_Id -> Category\_Name

Item\_Code -> Category\_Id , Category\_Name

Prime attribute :- Item\_Code

Non Prime Attribute :- Category\_Id , Category\_Name

1NF - all attributes are atomic as well as we have primary key hence it is in 1NF.

2NF - only the prime attribute is deriving all other attributes hence 2NF.

3NF - there is no transitive dependency hence 3NF.

**Buy(Cust\_Id , Item\_Code)**

1NF - since all attributes are atomic hence it is in 1NF.

2NF - since there is no partial dependency thus it is in 2NF

3NF - no transitive dependency hence 3NF

**Customers(Cust\_Id , Cust\_Name, DOB, Email, Address)**

Cust\_Id -> Cust\_Name, DOB, Email, Address

Email -> Cust\_Id , Cust\_Name, DOB, Email, Address

Prime attributes :- Cust\_Id, Email

Non Prime attributes :- DOB, Cust\_Name, Address

1NF - all attributes are atomic

2NF - no partial dependency

3NF - No transitive dependency

**Customers\_Contact\_No(Contact\_Number , Cust\_Id)**

1NF - all attributes are atomic

2NF - No partial dependency

3NF - No transitive dependency

**Payment\_Details(Payment\_Id , Payment\_date, Total\_Amount, Payment\_Method, Emp\_Code)**

Payment\_Id -> Payment\_date , Total\_Amount , Payment\_Method, Emp\_Code

1NF - all attributes are atomic

2NF - no partial dependency

3NF - No transitive dependency

**Order(Order\_Id , Order\_Date, Total\_Amount, Tracking\_Number , Payment\_Id , Order\_Det\_Id , Cust\_Id)**

Order\_Id -> Order\_Date , Total\_Amount , Tracking\_Number , Payment\_Id, Order\_Det\_Id, Cust\_Id

Tracking\_Number -> Order\_Date , Total\_Amount , Payment\_Id, Order\_Det\_Id, Cust\_Id, Order\_Id

Payment\_Id -> Order\_Date , Total\_Amount , Order\_Det\_Id, Cust\_Id, Order\_Id, Tracking\_Number

Order\_Det\_Id -> Order\_Date , Total\_Amount , Payment\_Id, Cust\_Id, Order\_Id, Tracking\_Number

Prime attributes :- Order\_Id, Tracking\_Nmuber , Payment\_Id, Order\_Det\_Id

Non Prime Attributes :- Order\_Date , Total\_Amount , Cust\_Id

1NF - all attributes are atomic

2NF - no partial dependency

3NF - no transitive dependency

**Bill(Order\_Det\_Id , Date\_Of\_billing, Total\_amount, Item\_Code , Bill\_Number)**

Order\_Det\_Id -> Date\_Of\_Billing , Total\_amount, Item\_Code, Bill\_Number

Bill\_Number -> Date\_Of\_Billing , Total\_amount, Item\_Code, Order\_Det\_Id

Prime attributes :- Order\_Det\_Id , Bill\_Number

Non prime attributes :- Date\_Of\_Billing , Total\_amount, Item\_Code

1NF - all attributes are atomic

2NF - no partial dependency

3NF - no transitive dependency

**Tracking\_Details(Tracking\_Number , Courier\_Name)**

Tracking\_Number -> Courier\_Name

Prime attribute :- Tracking\_Number

Non - Prime Attribute :- Courier\_Name

Candidate key / Primary Key :- Tracking\_Number

1NF - all attributes are atomic

2NF - no partial dependency

3NF - no transitive dependency

**Feedback\_Comment(Comment , Feedback\_Id)**

Feedback\_Id -> Comment

Prime attribute :- Feedback\_Id

Non prime attribute :- Comment

Candidate key / Primary Key :- Feedback\_Id

1NF - all attributes are atomic

2NF - no partial dependency

3NF - no transitive dependency

**Feedback(Feedback\_Id , Cust\_Id , Item\_Code , Rating, Feedback\_date)**

Feedback\_Id -> Cust\_Id , Item\_Code , Rating, Feedback\_Date

Cust\_Id -> Item\_Code , Rating, Feedback\_Date , Feedback\_Id

Item\_Code -> Cust\_Id, Rating, Feedback\_Date , Feedback\_Id

Prime\_Attribute :- Feedback\_Id , Cust\_Id , Item\_Code

Non prime attribute :- Rating, Feedback\_Date

1NF - all attributes are atomic

2NF - no partial dependency

3NF - no transitive dependency

**Advertises(Item\_Code,Company\_Code)**

Company\_Code -> Item\_Code

Item\_Code -> Company\_Code

Prime attributes :- Company\_Code  , Item\_Code

1NF - all attributes are atomic

2NF - no partial dependency

3NF - no transitive dependency

**Advertising\_Company(Company\_Code, Company\_Name)**

Company\_Code -> Comapny\_Name

Prime Attribute :- Comapny\_Code

Non prime Attribute :- Comapny\_Name

1NF - all attributes are atomic

2NF - no partial dependency

3NF - no transitive dependency

**Supplier(Supplier\_ID,Supplier\_name,Supplier\_address)**

Supplier\_Id -> Supplier\_Name , Supplier\_address

1NF - all attributes are atomic

2NF - no partial dependency

3NF - no transitive dependency

**Supplies(Supplier\_Id , Item\_Code)**

Supplier\_Id -> Item-Code

Item\_Code -> Supplier\_Id

1NF - all attributes are atomic

2NF - no partial dependency

3NF - no transitive dependency

**Supplier\_Contact(Supplier\_contact, Supplier\_Id)**

Supplier\_Id -> Supplier\_Contact

Prime attribute :- Supplier\_Id

1NF - all attributes are atomic

2NF - no partial dependency

3NF - no transitive dependency

**Supplier\_Email(Supplier\_email, Supplier\_ID)**

Supplier\_Id -> Supplier\_Email

1NF - all attributes are atomic

2NF - no partial dependency

3NF - no transitive dependency

**Employee(Emp\_code, Emp\_name, Date, Month, Year, Age, Position, Salary, Username)**

Emp\_Code -> Emp\_Name , Date, Month, Year, Age, Position, Salary, Username

Username -> Emp\_Code , Emp\_Name , Date, Month, Year, Age, Position, Salary

Prime attributes :- Emp\_Code , Username

Non Prime attributes :- Emp\_Name , Date, Month, Year, Age, Position, Salary

1NF - all attributes are atomic

2NF - no partial dependency

3NF - no transitive dependency

**Admin(Username,Password,Admin\_ID,Admin\_name)**

Username -> Password, Admin\_Id , Admin\_Name

Admin\_Id -> Username, password, Admin\_Name

Prime attributes :- Username , Admin\_Id

Non prime attributes :- Admin\_Name, Password

1NF - all attributes are atomic

2NF - no partial dependency

3NF - no transitive dependency

**Store(Store\_ID,Store\_Name,Location,Operating\_hrs)**

Store\_Id -> Store\_Name , Location , Operatong\_Hours

Prime attributes :- Store\_Id

Non prime attributes :- Store\_Name , Location , Operatong\_Hours

1NF - all attributes are atomic

2NF - no partial dependency

3NF - no transitive dependency

**Store\_Contact\_No(Contact\_Number, Store\_ID)**

Store\_Id -> Conatct\_Number

1NF - all attributes are atomic

2NF - no partial dependency

3NF - no transitive dependenc