**Functional Dependencies**

 Brand

Brand(Brand\_ID, Brand\_Name)

Functional Dependencies:

Brand\_ID → Brand\_Name

Canonical form of functional dependencies:

Brand\_ID → {Brand\_Name}

1NF: the table has no composite or multivalued attributes

2NF: the table is in 2NF since there are no partial dependencies

3NF: There are no transitive dependencies involved

 Category

Category(Category\_ID, Name)

Functional Dependencies:

Category\_ID → Category\_Name

Canonical form of functional dependencies:

Category\_ID → {Category\_Name}

1NF: the table has no composite or multivalued attributes

2NF: the table is in 2NF since there are no partial dependencies

3NF: There are no transitive dependencies involved

 Deal

Deal(Deal\_ID, Discount\_Percentage)

Functional Dependencies:

Deal\_ID → Discount\_percentage

Canonical form of functional dependencies:

Deal\_ID → Discount\_percentage

1NF: the table has no composite or multivalued attributes

2NF: the table is in 2NF since there are no partial dependencies

3NF: There are no transitive dependencies involved

 Product

Product(Product\_Name, Product\_ID, Brand\_ID, Category\_ID, Deal\_ID)

--Brand\_ID, Category\_ID, Deal\_ID are FKs referring to Brand, Category, Deal

relations respectively.

Functional Dependencies:

Product\_ID → Product\_Name

Product\_ID → Brand\_ID

Product\_ID → Category\_ID

Product\_ID → Deal\_ID

Name → Product\_ID

Name → Brand\_ID

Name → Category\_ID

Name → Deal\_ID

Canonical form of functional dependencies:

Product\_ID → {Product\_Name, Brand\_ID, Category\_ID, Deal\_ID}

Name → {Product\_ID}

1NF: the table has no composite or multivalued attributes

2NF: the table is in 2NF since there are no partial dependencies

3NF: There are no transitive dependencies involved

 Seller

Seller(Seller\_ID, Customer\_Rating, Seller\_Name)

Functional Dependencies:

Seller\_ID → Customer\_Rating

Seller\_ID → Seller\_Name

Canonical form of functional dependencies:

Seller\_ID → {Customer\_Rating , Seller\_Name }

1NF: the table has no composite or multivalued attributes

2NF: the table is in 2NF since there are no partial dependencies

3NF: There are no transitive dependencies involved

 Location

Location(Pincode, State, City, Area\_Name)

Functional Dependencies:

Pincode → State

Pincode → City

Pincode → Area\_Name

Canonical form of functional dependencies:

Pincode → {State, City, Area\_Name }

1NF: the table has no composite or multivalued attributes

2NF: the table is in 2NF since there are no partial dependencies

3NF: There are no transitive dependencies involved

 Availability

Availability(Product\_ID, Seller\_ID, Location\_ID, Price)

-- Product\_ID, Seller\_ID, Location\_ID are FKs referring to Product, Seller, Location

relations respectively.

Functional Dependencies:

{ Product\_ID, Seller\_ID, Location\_ID } → Price

Canonical form of functional dependencies:

{ Product\_ID, Seller\_ID, Location\_ID } → Price

1NF: the table has no composite or multivalued attributes

2NF: the table is in 2NF since there are no partial dependencies

3NF: There are no transitive dependencies involved

 Cart

Cart(Product\_ID, Seller\_ID, Location\_ID, Customer\_ID, Quantity)

-- Customer\_Id is FK referring to Customer relation and Product\_ID, Seller\_ID,

Location\_ID are FKs referring to Availability relation.

Functional Dependencies:

{Product\_ID, Seller\_ID, Location\_ID, Customer\_ID } → Quantity

Canonical form of functional dependencies:

{Product\_ID, Seller\_ID, Location\_ID, Customer\_ID } → Quantity

1NF: the table has no composite or multivalued attributes

2NF: the table is in 2NF since there are no partial dependencies

3NF: There are no transitive dependencies involved

 Contains

Cart(Product\_ID, Seller\_ID, Location\_ID, Order\_ID, Shipper\_ID, Quantity)

-- Order\_Id is FK referring to Order relation, Shipper\_Id is FK referring to Shipper

relation and Product\_ID, Seller\_ID, Location\_ID are FKs referring to Availability

relation.

Functional Dependencies:

{Product\_ID, Seller\_ID, Location\_ID , Order\_ID, Shipper\_ID } → Quantity

Canonical form of functional dependencies:

{Product\_ID, Seller\_ID, Location\_ID , Order\_ID, Shipper\_ID } → Quantity

1NF: the table has no composite or multivalued attributes

2NF: the table is in 2NF since there are no partial dependencies

3NF: There are no transitive dependencies involved

 Shipper

Shipper(Shipper\_ID, Shipper\_Name)

Functional Dependencies:

Shipper\_ID → Name

Canonical form of functional dependencies:

Shipper\_ID → Name

1NF: the table has no composite or multivalued attributes

2NF: the table is in 2NF since there are no partial dependencies

3NF: There are no transitive dependencies involved

 CustomerOrder

CustomerOrder(Order\_ID, Order\_Datetime, Customer\_ID, Location\_ID, Payment\_ID)

-- Customer\_Id is FK referring to Customer relation, Location\_Id is FK referring to

Location relation, Payment\_Id is FK referring to Payment relation.

Functional Dependencies:

Order\_ID → Order\_Datetime

Order\_ID → Customer\_ID

Order\_ID → Location\_ID

Order\_ID → Payment\_ID

Canonical form of functional dependencies:

Order\_ID → { Order\_Date , Customer\_ID, Location\_ID, Payment\_ID}

1NF: the table has no composite or multivalued attributes

2NF: the table is in 2NF since there are no partial dependencies

3NF: There are no transitive dependencies involved

 Customer

Customer(Customer\_ID, Customer\_Name, Customer\_Email, Password)

Functional Dependencies:

Customer\_ID → Customer\_Name

Customer\_ID → Customer\_Email

Customer\_ID → Password

Canonical form of functional dependencies:

Customer\_ID → { Customer\_Name, Customer\_Email, Password}

1NF: the table has no composite or multivalued attributes

2NF: the table is in 2NF since there are no partial dependencies

3NF: There are no transitive dependencies involved

 Payment

Customer(Payment\_ID, Payment\_Date, Type, Amount)

Functional Dependencies:

Payment\_ID → Payment\_Date

Payment\_ID → Type

Payment\_ID → Amount

Canonical form of functional dependencies:

Payment\_ID → {Payment\_Date, Type, Amount}

1NF: the table has no composite or multivalued attributes

2NF: the table is in 2NF since there are no partial dependencies

3NF: There are no transitive dependencies involved