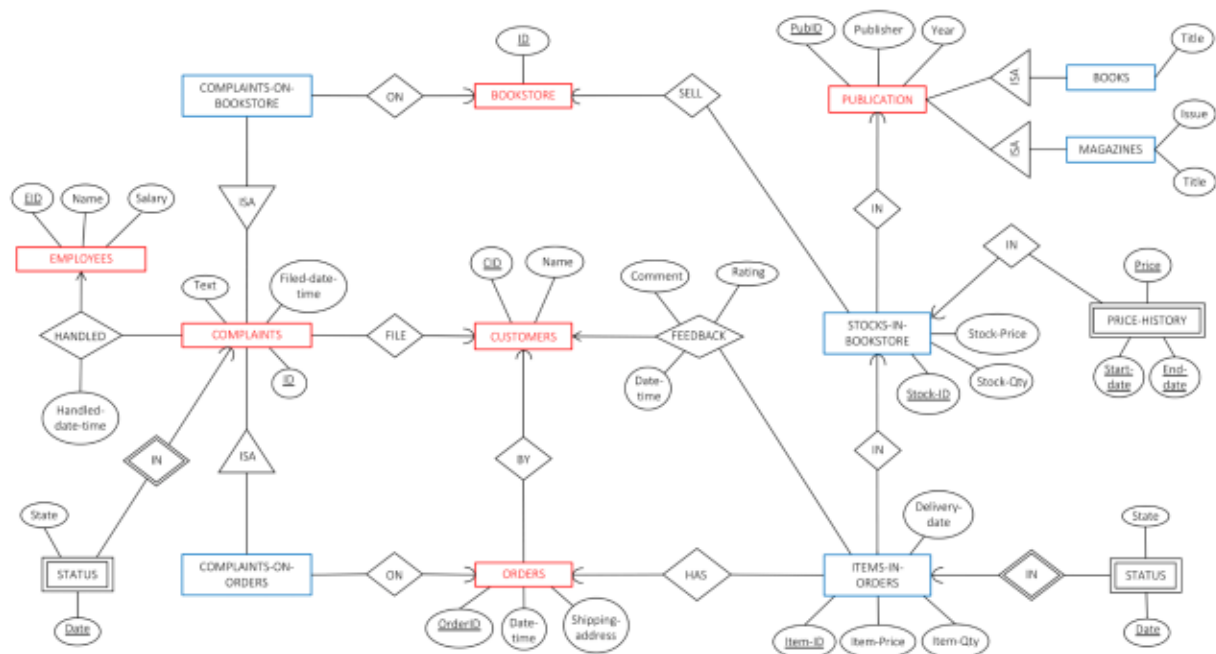# ER Diagram

Relational Schema

Employees(<u>Employee_ID</u>, Name, Salary)

<u>Keys</u>: Employee_ID

<u>Primary Key</u>: Employee_ID

<u>FDs</u>: Employee_ID -> Name, Salary

The relation is in 3NF.

Complaints(<u>Complaint_ID</u>, Text, Filed_Date_Time, Handled_Date_Time, Employee_ID, Customer_ID)

<u>Keys</u>: Complaint_ID

<u>Primary Key</u>: Complaint_ID

<u>FDs</u>: Complaint_ID -> Text, Filed_Date_Time, Handled_Date_Time, Employee_ID, Customer-ID

The relation is in 3NF.

Complaint_Status(Date, Complaint_ID, State)

Keys: Date, Complaint_ID

Primary Key: Date, Complaint_ID

FDs: Date, Complaint_ID -> State

The relation is in 3NF.

Complaints_on_order(Complaint_On_Order_ID, Order_ID)

Keys: Complaint_On_Order_ID

Primary Key: Complaint_On_Order_ID

FDs: Complaint_On_Order_ID -> Order_ID

The relation is in 3NF.

Complaints_On_Bookstore(Complaint_On_Order_ID, Bookstore_ID)

Keys: Complaint_On_Order_ID

Primary Key: Complaint_On_Order_ID

FDs: Complaint_On_Bookstore_ID -> Bookstore_ID

The relation is in 3NF.

Customer(Customer_ID, Name)

Keys: Customer_ID

Primary Key: Customer_ID

FDs: Customer_ID -> Name

The relation is in 3NF.

Bookstore(Bookstore_ID)

Keys: Bookstore_ID

<u>Primary Key</u>: Bookstore_ID

<u>FDs</u>: Bookstore_ID -> Bookstore_ID

The relation is in 3NF.

Orders(<u>Order_ID</u>, Date_time, Shipping_address, Customer_ID)

<u>Keys</u>: Order_ID

<u>Primary Key</u>: Order_ID

<u>FDs</u>: Order_ID -> Date_time, Shipping_address, Customer_ID

The relation is in 3NF.

Publication (<u>Pub_ID</u>, Publisher, Pub_Year)

<u>Keys</u>: {Pub_ID}

<u>Primary Key</u>: {Pub_ID}

<u>FDs:</u> Pub_ID -> Publisher, Pub_Year

The relation is in 3NF.

Books (<u>Pub_ID</u>, Title)

<u>Keys</u>: {Pub_ID}

<u>Primary Key</u>: {Pub_ID}

<u>FDs</u>: Pub_ID -> Title

The relation is in 3NF.

Magazines (<u>Pub_ID</u>, Issue, Title)

<u>Keys</u>: Pub_ID

<u>Primary Key:</u> Pub_ID

<u>FDs</u>: Pub_ID -> Issue, Title

The relation is in 3NF.

Stocks_in_Bookstore (<u>Stock_ID</u>, Stock_Price, Stock_Qty, Pub_ID, Bookstore_ID)

<u>Keys</u>: {Stock_ID}

<u>Primary Key</u>: {Stock_ID}

<u>FDs</u>: Stock_ID -> Stock_Price, Stock_Qty, Pub_ID, Bookstore_ID

The relation is in 3NF.

Price_History (<u>Stock_ID</u>, <u>Price</u>, <u>Start_date</u>, <u>End_date</u>)

<u>Keys</u>: {Stock_ID, Price, Start_date, End_date}

<u>Primary Key</u>: {Stock_ID, Price, Start_date, End_date}

<u>FDs</u>:

The relation is in 3NF.

Item_Status (<u>Date</u>, <u>Item_ID</u>, State)

<u>Keys</u>: {Date, Item_ID}

<u>Primary Key</u>: {Date, Item_ID}

<u>FDs</u>: Date, Item_ID -> State

The relation is in 3NF.

Items_In_Orders(<u>Item_ID</u>, Item_Price, Item_Qty, Delivery_date, Customer_ID, Date_time, Comment, Rating)

<u>Keys</u>: {Item_ID}

<u>Primary Key</u>: {Item_ID}

<u>FDs</u>: Item_ID -> Item_Price, Item_Qty, Delivery_date, Customer_ID, Date_time, Comment, Rating

The relation is in 3NF.