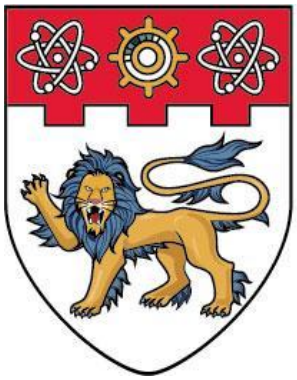


NANYANG TECHNOLOGICAL UNIVERSITY
SINGAPORE

SC2207 Lab 3

Tutorial Group A34, Group 3

Group members:

Hendy (U2122559J)

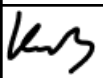
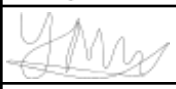
Cai Kaihang (U2121031J)

Lim Jin Feng, Alexus (U2121689H)

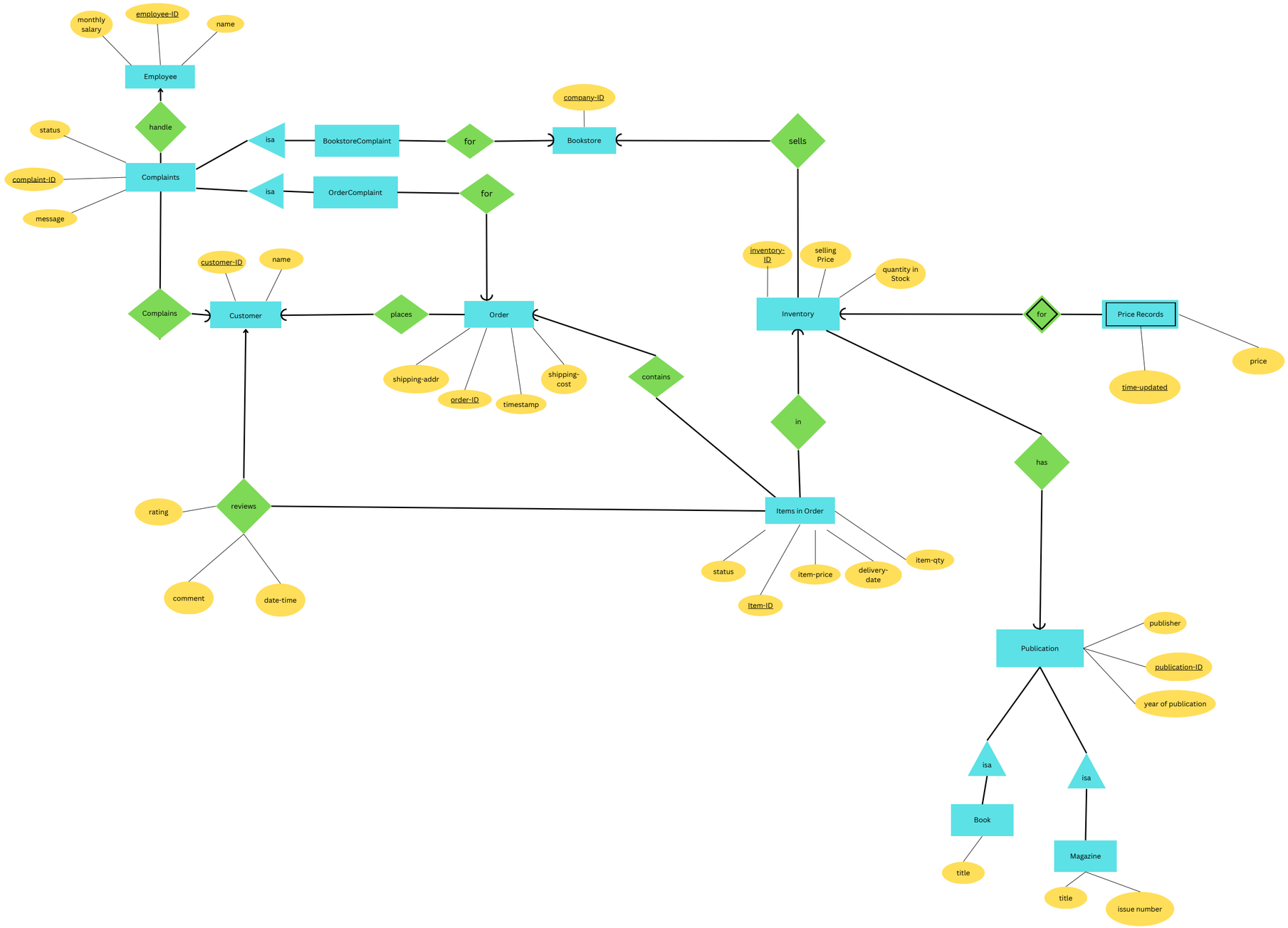
Yeoh Ming Wei (U2123351B)

Sim Wei Feng (U2122824G)

INDIVIDUAL CONTRIBUTION FORM

Full Name	Individual Contribution to Lab 3 Submission	Percentage of Contribution	Signature
Hendy	Discussed and Designed Revised ER Diagram Discussed Generation of Normalised Database Schema	20%	
Lim Jin Feng, Alexus	Discussed and Designed Revised ER Diagram Discussed Generation of Normalised Database Schema	20%	
Cai Kaihang	Discussed and Designed Revised ER Diagram Discussed Generation of Normalised Database Schema	20%	
Yeoh Ming Wei	Discussed and Designed Revised ER Diagram Discussed Generation of Normalised Database Schema	20%	
Sim Wei Feng	Discussed and Designed Revised ER Diagram Discussed Generation of Normalised Database Schema	20%	

Revised ER diagram



Normalized relational schema (BCNF)

Magazine (publication-ID, issue number, title)

Key: publication-ID

Primary Key: publication-ID

FDs: publication-ID → issue number, publication-ID, title

The relation is in BCNF

Publication (publication-ID, publisher, year of publication)

Key: publication-ID

Primary Key: publication-ID

FDs: publication-ID → publisher, year of publication

The relation is in BCNF

Book (publication-ID, title)

Key: publication-ID

Primary Key: publication-ID

FDs: publication-ID → title

The relation is in BCNF

Customer (customerID, name)

Key: customerID

Primary Key: customerID

FDs: customerID → name

The relation is in BCNF

BookstoreComplaint (complaint-ID, company-ID)

Key: complaint-ID

Primary Key: complaint-ID

FDs: complaint-ID → company-ID

The relation is in BCNF

OrderComplaint (complaint-ID, order-ID)

Key: complaint-ID

Primary Key: complaint-ID

FDs: complaint-ID → order-ID

The relation is in BCNF

Complaints (complaint-ID, employee-ID, customer-ID, message, status)

Key: complaint-ID

Primary Key: complaint-ID

FDs: complaint-ID → employee-ID, customer-ID, message, status

The relation is in BCNF

Employee (employee-ID, name, monthly-salary)

Key: employee-ID

Primary Key: employee-ID

FDs: employee-ID → name, monthly-salary

The relation is in BCNF

Order (order-ID, shipping-addr, shipping-cost, timestamp, customer-ID).

Key: order-ID

Primary Key: order-ID

FDs: order-ID → shipping-addr, shipping-cost, timestamp, customer-ID (in BCNF)

shipping-addr → shipping-cost

(Assumption: shipping source is always the same (from Amazon warehouse), so the shipping address determines shipping cost)

The relation order-ID → shipping-addr, shipping-cost, timestamp, customer-ID is in BCNF while shipping-addr → shipping-cost is **not in BCNF.**

Perform normalization steps:

R1(shipping-addr, shipping-cost)

R2(order-ID, shipping-addr, timestamp, customer-ID)

Now both **relations are in BCNF.**

Inventory (inventory-ID, selling-price, qty-in-stock, publication-ID, company-ID)

Key: inventory-ID, {company-ID, publication-ID}

Primary Key: inventory-ID

FDs: inventory-ID → selling-price, qty-in-stock, publication-ID, company-ID;

company-ID, publication-ID → inventory-ID

The relation is in BCNF

Price_Records (time-updated, inventory-ID, price)

Key : time-updated, inventory-ID

Primary Key: time-updated, inventory-ID

FDs: time-updated,inventory-ID → price

The relation is in BCNF

Bookstore (company-ID)

Key: company-ID

Primary Key: company-ID

The relation is in BCNF

Items_In_Order (item-ID, order-ID, inventory-ID, customer-ID, item-price, item-qty, status, delivery-date, rating, comment, date-time)

Key: item-ID

Primary Key: item-ID

FDs: item-ID -> order-ID, inventory-ID, customer-ID, item-price, item-qty, status, delivery-date, rating, comment, date-time

(Assumption: item-ID is unique, there is no repetition of item-ID across different orders. Similar to inventory-ID from Inventory table)

The relation is in BCNF