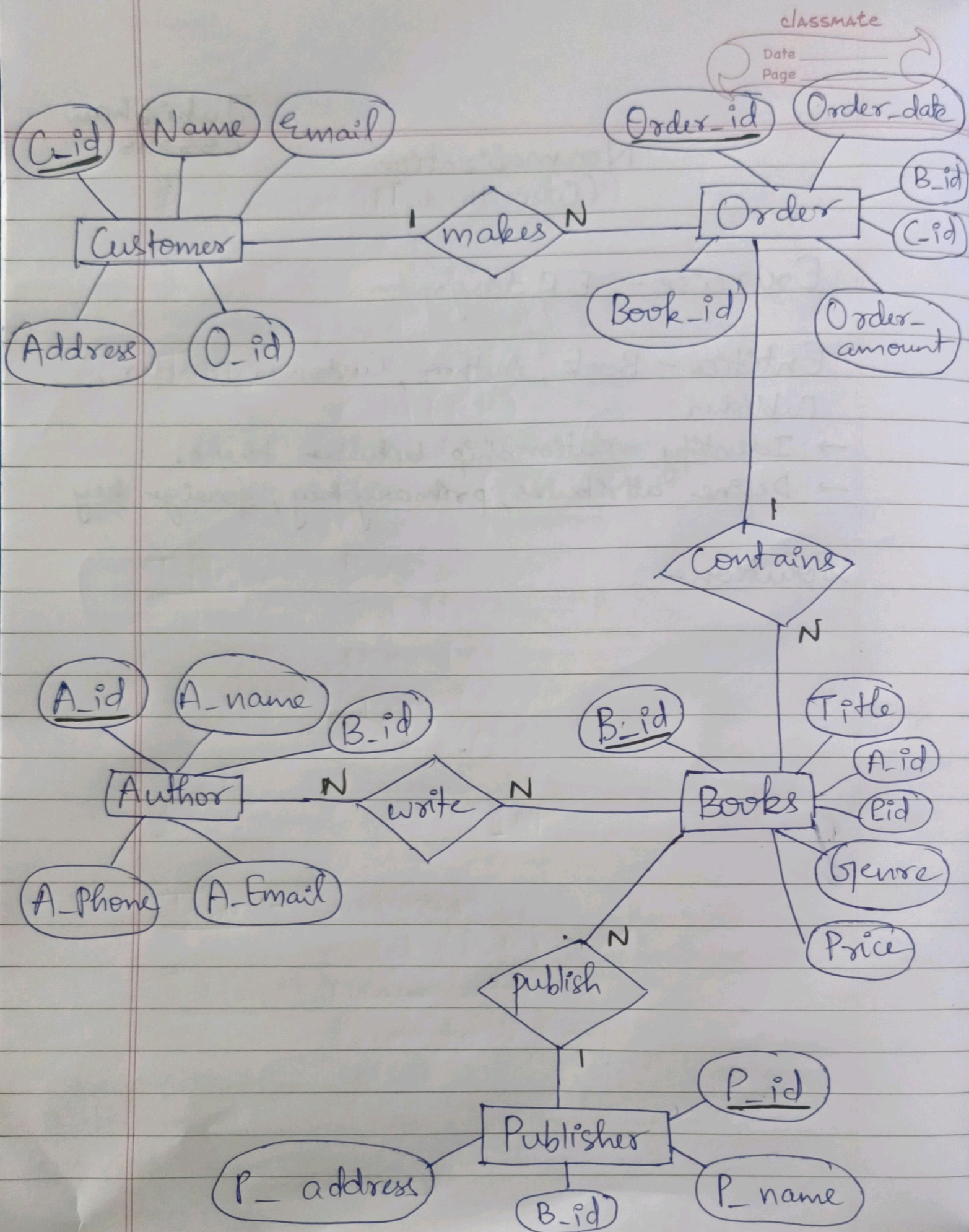Juhi Shaw
655295

Normalization
(Case Study)

Exercise - ER diagram

Entities - Book, Author, Customer, Order, Publisher.

→ Identify relationship between them.
→ Define attributes, primary key, foreign key

Solution -

Entity-Relationship Diagram

Customer entity attributes: C_id, Name, Email, Address, O_id

Customer — 1 — makes — N — **Order**

Order entity attributes: Order_id, Order_date, B_id, C_id, Book_id, Order_amount

Order — I — Contains — N — **Books**

Author entity attributes: A_id, A_name, B_id, A_Phone, A_Email

Author — N — write — N — **Books**

Books entity attributes: B_id, Title, A_id, P_id, Genre, Price

Books — N — publish — I — **Publisher**

Publisher entity attributes: P_id, P_address, B_id, P_name

	Primary key	Foreign key
Book .	B_id	A_id, P_id
Customer	C_id	O_id
Order	Order_id	Bid, C_id
Author	A_id	B_id
Publisher	P_id	B_id.

Assignment (Normalization)

Initial Schema (0NF)

Table - Customer
  C_id (P.K)
  Name (Atomic)
  Phone_no (non-atomic)

Table - Book
  Bid (P.K)
  Name (Atomic)
  Genre (Atomic)
  Price (Atomic)

1st Normal Form (1NF)

Table - Customer
  C_id (P.K)
  Name (Atomic)
  Phone_no (Atomic)

Table - Order
O_id (P.K)
~~Name~~ B_id (F.K)
Quantity (Atomic)

Table - Book
B_id (P.K)
Name (Atomic)
Genre (Atomic)
Price (Atomic)

2nd Normal form (2NF)

Table - Customer
C_id (P.K)
Name (Atomic)
Phone_no. (Atomic)

Table - Order
O_id (P.K)
C_id (F.K)

Table - order_book
    Ob_id (P.K)
    o_id (F.K)
    b_id (F.K)
    Quantity (Atomic)

Table - Book
    b_id (P.K)
    Name (Atomic)
    Genre (Atomic)
    Price (Atomic)

3rd Normal form (3Nf)

Table - Customer
    C_id (P.K)
    Name (Atomic)
    Phone_no. (Atomic)

Table - Order
    O_id (P.K)
    (other order-related attributes)

Table - Book
       B_id (P.K)
       Name (Atomic)
       Genre (Atomic)
       Price (Atomic)

Table - Customer_order
       O_id (F.K)
       C_id (F.K)