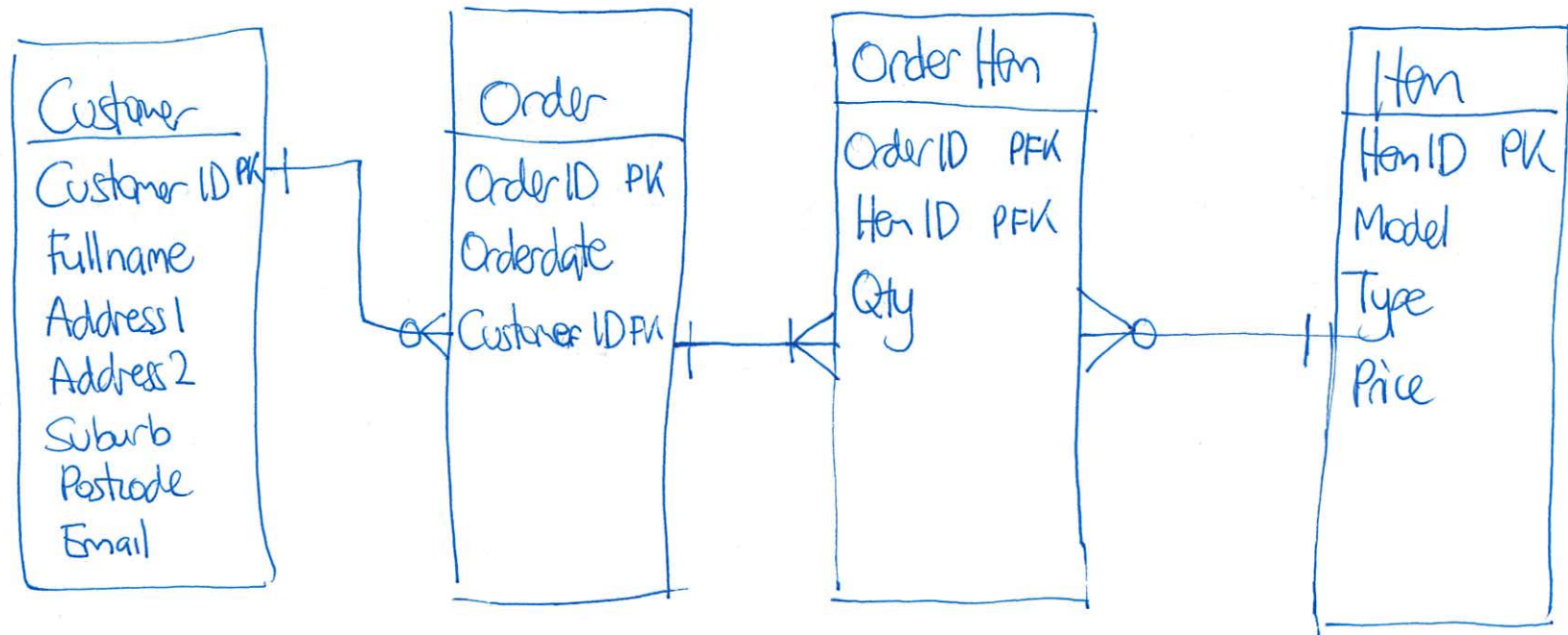


1.1

Logical Model for Relational DB



Remember

Logical Model

is for a Relational Database

Many to Many must be resolved

DO NOT SHOW DATATYPES!

1.2

Physical Model for MySQL Relational Database

Customer		
Customer ID	INT	PK
FirstName	varchar (12)	
LastName	varchar (25)	
Address1	varchar (30)	
Address2	varchar (30)	
City	varchar (15)	
Postcode	char (4)	
Email	varchar (255)	

Order		
Order ID	INT	PK
Orderdate	DATE	
DeliveryDate	DATE	
Customer ID	INT	FK

Order Item		
Order ID	INT	PFK
Item ID	INT	PFK
Quantity	Tinyint (2)	

Item		
Item ID	INT	PK
Model	varchar (15)	
Type	varchar (18)	
Price	decimal (5,2)	

Assumptions:

Delivery to Australian
postcode

Both delivery + order date
required to confirm

3 day delivery

-- 2.1

```
SELECT staff_id, concat(first_name, ' ', last_name), job_title,
salary
FROM staff natural join jobs
WHERE salary =
    (SELECT min(salary)
     FROM staff);
```

-- 2.2

```
SELECT country_name, count(staff_id)
FROM countries natural join locations natural join departments
natural join staff
GROUP BY country_name
ORDER BY country_name;
```

-- 2.3

```
SELECT departments.department_name, locations.city
FROM departments natural join locations
WHERE departments.manager_id is null;
```

-- 2.4

```
SELECT b.first_name, b.last_name, count(e.staff_id)
FROM staff b INNER JOIN staff e
ON e.supervisor_id = b.staff_id
GROUP BY b.first_name, b.last_name;
```

-- 2.5

```
SELECT country_name
FROM countries
WHERE country_id in
    (SELECT country_id
     FROM locations inner join departments inner join staff
     ON locations.location_id = departments.location_ID
     AND staff.department_id = departments.department_id
     and departments.department_id in
        (SELECT department_id
         FROM staff
         WHERE salary =
            (SELECT max(salary)
             FROM staff)
        )
    );
```

-- 2.6

```
SELECT last_name, length(last_name)
FROM staff
ORDER BY length(last_name) DESC;
```

-- 2.7

```
SELECT first_name, last_name, hire_date
FROM staff
WHERE staff_id IN
    (SELECT (staff_id)
     FROM job_history
     GROUP BY (staff_id)
     HAVING count(*) >= 2);
```

-- 2.8

```
SELECT departments.department_name, count(staff.staff_id)
FROM staff RIGHT OUTER JOIN departments
ON staff.department_id = departments.department_id
GROUP BY departments.department_name
ORDER BY COUNT(staff.staff_id) DESC;
```