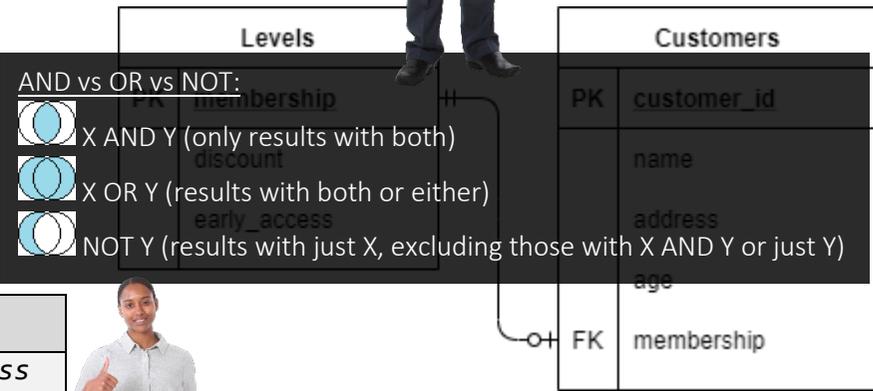


Table: Customers				
customer_id	name	address	age	membership
1	Sue	1 Smith Street	21	bronze
2	Joe	1 Smith Street	22	silver
3	Mary	2 Louis Lane	38	gold
4	Rick		65	silver

"SQL Statements will basically all look something like this:"

```
SELECT field(s), AggregateFunction(field) AS alias
FROM table INNER JOIN OtherTable ot
ON t.field == ot.field
WHERE filter == row filter (applied before group by) OR ..
GROUP BY fields (often in conjunction with Aggregates)
HAVING filter == group row filter (applied after group by)
ORDER BY field DESC, field2 ASC
```

Table: Contacts	
customer_id	contact_details
1	sueandjoe@gmail.com
1	0412 345 678
2	sueandjoe@gmail.com



AND vs OR vs NOT:

- X AND Y (only results with both)
- X OR Y (results with both or either)
- NOT Y (results with just X, excluding those with X AND Y or just Y)

Table: Levels		
membership	discount	early_access
bronze	0.1	false
silver	0.2	false
gold	0.5	false
platinum	0.8	true

SELECT COUNT(*) as "number of rows"
FROM Customers JOIN Contacts
ON Customers.customer_id == Contacts.customer_id

"The default JOIN in SQLite is an INNER JOIN. An Inner Join selects only matching records from joined tables. The above result is 3."

SELECT COUNT(*) as "number of rows"
FROM Customers x LEFT JOIN Contacts y
ON x.customer_id == y.customer_id

x and **y** in this query are used as a table alias

"This gives us all records in Customers, and matching Contacts == 5."

"A subquery (aka inner / nested query) is an SQL query within a query. Subqueries return individual values or a list of records to the enclosing query."

```
SELECT name
FROM Customers
WHERE age > (
  SELECT AVG(age)
  FROM Customers
)

SELECT name
FROM Customers
WHERE membership NOT IN (
  SELECT membership
  FROM Levels
  WHERE early_access == true
)
```

SQL Functions

SELECT COUNT(*), membership
FROM Customers
GROUP BY membership

SELECT AVG(age), membership
FROM Customers
GROUP BY membership

"Aggregate functions you might see on the exam include SUM, MAX, MIN, COUNT and AVG. Other functions include DISTINCT and ROUND. You may also see Arithmetic functions:"

```
SELECT ROUND(discount * 49.95,2)
FROM Levels
WHERE membership == "gold"

SELECT name, (age + 5)
FROM Customers
```

