SQLite Restaurant Project

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- 1. Join 1 fact table with 4 dimension tables
- 2. SQL 3 questions
 - a. Question1: Top 5 products that generate the highest sales?
 - b. Question2: Which branch has the most orders in February?
 - c. Question3: Total Sales in each months?

Join 1 fact table with 4 dimension tables

CREATE + INSERT value into Fact table

```
CREATE TABLE "orders" (
  "order_id" INT PRIMARY KEY,
  "employee_id" INT,
 "order_date" TEXT,
 "item_id" INT,
  "promotion_id" INT,
  "branch_id" INT,
  "qty" INT,
 FOREIGN KEY (employee_id) REFERENCES employee(employee_id),
  FOREIGN KEY (item_id) REFERENCES item(item_id),
 FOREIGN KEY (promotion_id) REFERENCES promotion(promotion_id),
 FOREIGN KEY (branch_id) REFERENCES branch(branch_id)
INSERT INTO orders VALUES
 (1211, 1, '2023-01-01', 101, 3, 1, 1),
 (1212, 2, '2023-01-01', 102, 3, 1, 2),
 (1213, 3, '2023-01-01', 103, 2, 2, 1),
 (1214, 4, '2023-02-01', 104, 1, 3, 2),
(1215, 1, '2023-02-01', 105, 1, 1, 3),
  (1216, 2, '2023-02-01', 106, 3, 1, 1),
 (1217, 3, '2023-03-01', 107, 3, 2, 2),
  (1218, 4, '2023-03-01', 101, 1, 3, 1),
  (1219, 1, '2023-03-01', 102, 2, 1, 2),
(1220, 2, '2023-04-01', 103, 3, 1, 1)
```

CREATE + INSERT value into Dimension Table

```
--Dim 1
CREATE TABLE "employees" (
  "employee_id" INT PRIMARY KEY,
  "name" TEXT,
  "gender" TEXT
);
INSERT INTO employees VALUES
```

```
(1, 'Justin', 'M'),
  (2, 'Mark', 'M'),
(3, 'Donny', 'F'),
(4, 'Pinkie', 'F')
--Dim 2
CREATE TABLE "items" (
 "item_id" INT PRIMARY KEY,
 "item_name" TEXT,
 "price" REAL
INSERT INTO items VALUES
 (101, 'Pizza', 20),
 (102, 'Ham', 5),
 (102, Ham, 5),
(103, 'Pork', 2),
(104, 'Chicken', 2),
(105, 'Noodle', 5),
(106, 'Coffee', 1),
 (107, 'Tea', 1)
--Dim 3
CREATE TABLE "promotions" (
 "promotion_id" INT PRIMARY KEY,
  "promotion_name" TEXT
INSERT INTO promotions VALUES
 (1, 'Member Discount 20%'),
(2, 'Buy 1 Get 1 Free'),
 (3, 'No Promotion')
--Dim 4
CREATE TABLE "branchs" (
 "branch_id" INT PRIMARY KEY,
 "location" TEXT
);
INSERT INTO branchs VALUES
 (1, 'Bangkok'),
 (2, 'Chonburi'),
 (3, 'Phuket')
```

Join Table

```
SELECT *

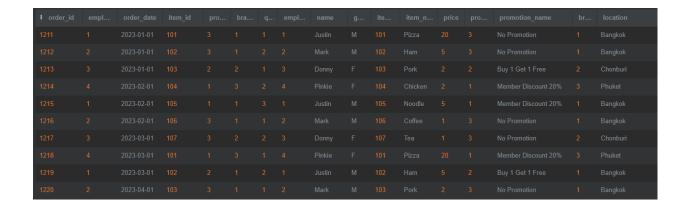
FROM orders as ord

JOIN employees AS em
  on ord.employee_id = em.employee_id

JOIN items AS it
  on ord.item_id = it.item_id

JOIN promotions AS pr
  on ord.promotion_id = pr.promotion_id

JOIN branchs AS br
  on ord.branch_id = br.branch_id;
```



SELECT specific columns

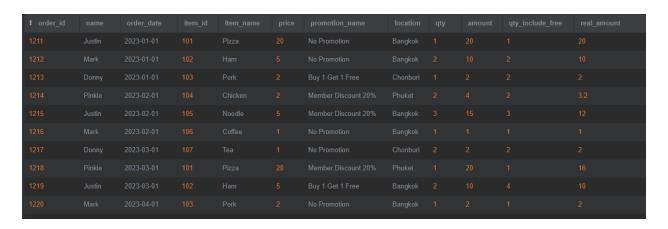
```
SELECT
 ord.order_id,
 em.name,
 ord.order_date,
 it.item_id,
 it.item_name,
 it.price,
 pr.promotion_name,
 br.location,
 ord.qty
FROM orders as ord
JOIN employees AS em
 on ord.employee_id = em.employee_id
JOIN items AS it
 on ord.item_id = it.item_id
JOIN promotions AS pr
 on ord.promotion_id = pr.promotion_id
JOIN branchs AS br
 on ord.branch_id = br.branch_id;
```

! order_id	name	order_date	item_id	item_name	price	promotion_name	location	qty
1211	Justin	2023-01-01	101	Pizza	20	No Promotion	Bangkok	
1212	Mark	2023-01-01	102	Ham		No Promotion	Bangkok	
1213	Donny	2023-01-01	103	Pork		Buy 1 Get 1 Free	Chonburi	
1214	Pinkie	2023-02-01	104	Chicken		Member Discount 20%	Phuket	
1215		2023-02-01		Noodle		Member Discount 20%	Bangkok	
1216	Mark	2023-02-01		Coffee		No Promotion	Bangkok	
1217	Donny	2023-03-01	107	Теа		No Promotion	Chonburi	
1218	Pinkie	2023-03-01	101	Pizza	20	Member Discount 20%	Phuket	
1219		2023-03-01	102	Ham		Buy 1 Get 1 Free	Bangkok	
1220	Mark	2023-04-01	103	Pork		No Promotion	Bangkok	

additional calculated & create more columns

```
SELECT
ord.order_id,
em.name,
ord.order_date,
```

```
it.item_id,
 it.item_name,
 it.price,
 pr.promotion_name,
 br.location,
 ord.qty,
 it.price * ord.qty AS amount,
   WHEN pr.promotion_name = 'Buy 1 Get 1 Free' THEN qty*2
   ELSE gty
 END AS qty_include_free,
 CASE
   WHEN pr.promotion_name = 'Member Discount 20%' THEN (it.price * ord.qty)*0.8
   ELSE it.price * ord.qty
 END AS real_amount
FROM orders as ord
JOIN employees AS em
 on ord.employee_id = em.employee_id
JOIN items AS it
 on ord.item_id = it.item_id
JOIN promotions AS pr
 on ord.promotion_id = pr.promotion_id
JOIN branchs AS br
 on ord.branch_id = br.branch_id;
```



using sub-query (...) to group script

```
SELECT *
FROM
(SELECT
   ord.order_id,
    em.name,
   ord.order_date,
   it.item_id,
   it.item_name,
   it.price,
    pr.promotion_name,
    br.location,
    ord.qty,
    it.price * ord.qty AS amount,
        WHEN pr.promotion_name = 'Buy 1 Get 1 Free' THEN qty*2
        ELSE qty
    END AS qty_include_free,
        WHEN pr.promotion_name = 'Member Discount 20%' THEN (it.price * ord.qty)*0.8
        ELSE it.price * ord.qty
    END AS 'real_amount'
FROM orders as ord
JOIN employees AS em
```

```
on ord.employee_id = em.employee_id

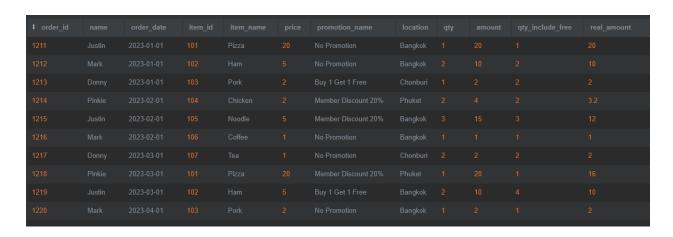
JOIN items AS it
  on ord.item_id = it.item_id

JOIN promotions AS pr
  on ord.promotion_id = pr.promotion_id

JOIN branchs AS br
  on ord.branch_id = br.branch_id);
```

refactor sub-query by WITH clause

```
with sub AS
  SELECT
     ord.order_id,
      em.name,
     ord.order_date,
     it.item_id,
      it.item_name,
     it.price,
      pr.promotion_name,
      br.location,
     ord.qty,
      it.price * ord.qty AS amount,
      CASE
          WHEN pr.promotion_name = 'Buy 1 Get 1 Free' THEN qty*2
          ELSE qty
      END AS qty_include_free,
      CASE
          WHEN pr.promotion_name = 'Member Discount 20%' THEN (it.price * ord.qty)*0.8
          ELSE it.price * ord.qty
      END AS 'real_amount'
  FROM orders as ord
  JOIN employees AS em
   on ord.employee_id = em.employee_id
  JOIN items AS it
   on ord.item_id = it.item_id
  JOIN promotions AS pr
   on ord.promotion_id = pr.promotion_id
  JOIN branchs AS br
    on ord.branch_id = br.branch_id
SELECT *
FROM sub
```



this table will be using for sample question below

SQL 3 questions

Q1: Top 5 products that generate the highest sales?

```
with sub AS
  SELECT
     ord.order_id,
     em.name,
     ord.order_date,
     it.item_id,
      it.item_name,
     it.price,
      pr.promotion_name,
      br.location,
      ord.qty,
      it.price * ord.qty AS amount,
      CASE
          WHEN pr.promotion_name = 'Buy 1 Get 1 Free' THEN qty*2
          ELSE qty
      END AS qty_include_free,
          WHEN pr.promotion_name = 'Member Discount 20%' THEN (it.price * ord.qty)*0.8
          ELSE it.price * ord.qty
      END AS 'real_amount'
 FROM orders as ord
  JOIN employees AS em
   on ord.employee_id = em.employee_id
  JOIN items AS it
   on ord.item_id = it.item_id
  JOIN promotions AS pr
   on ord.promotion_id = pr.promotion_id
  JOIN branchs AS br
   on ord.branch_id = br.branch_id
SELECT
   item_name,
   sum(real_amount) AS sum_sales
FROM sub
GROUP by item_name
ORDER by sum(real_amount) DESC
LIMIT 5
```

! item_name	sum_sales
Pizza	36
Ham	20
Noodle	12
Pork	4
Chicken	3.2

Q2: Which branch has the most orders in February

```
with sub AS
  SELECT
     ord.order_id,
     em.name,
      ord.order_date,
     it.item_id,
     it.item_name,
     it.price,
      pr.promotion_name,
      br.location,
     ord.qty,
      it.price * ord.qty AS amount,
      CASE
          WHEN pr.promotion_name = 'Buy 1 Get 1 Free' THEN qty*2
          ELSE qty
      END AS qty_include_free,
      CASE
          WHEN pr.promotion_name = 'Member Discount 20%' THEN (it.price * ord.qty)*0.8
          ELSE it.price * ord.qty
      END AS 'real_amount'
  FROM orders as ord
  JOIN employees AS em
   on ord.employee_id = em.employee_id
  JOIN items AS it
   on ord.item_id = it.item_id
  JOIN promotions AS pr
   on ord.promotion_id = pr.promotion_id
  JOIN branchs AS br
   on ord.branch_id = br.branch_id
SELECT
   location,
   order_date,
   COUNT(*) AS count_order
FROM sub
WHERE STRFTIME('%m', order_date) = '02'
GROUP by location
ORDER by COUNT(*) DESC
```

! location	order_date	count_order
Bangkok	2023-02-01	2
Phuket	2023-02-01	

Q3: Total Sales in each months?

```
with sub AS
(
    SELECT
          ord.order_id,
          em.name,
          ord.order_date,
          it.item_id,
          it.item_name,
          it.price,
```

```
pr.promotion_name,
      br.location,
      ord.qty,
      it.price * ord.qty AS amount,
      CASE
          WHEN pr.promotion_name = 'Buy 1 Get 1 Free' THEN qty*2
          ELSE qty
      END AS qty_include_free,
      CASE
          WHEN pr.promotion_name = 'Member Discount 20%' THEN (it.price * ord.qty)*0.8
          ELSE it.price * ord.qty
      END AS 'real_amount'
  FROM orders as ord
  JOIN employees AS em
   on ord.employee_id = em.employee_id
  JOIN items AS it
   on ord.item_id = it.item_id
  JOIN promotions AS pr
   on ord.promotion_id = pr.promotion_id
  JOIN branchs AS br
   on ord.branch_id = br.branch_id
SELECT
   STRFTIME('%m', order_date) AS month,
   CASE
       WHEN STRFTIME('%m',order_date) = '01' THEN 'Jan'
        WHEN STRFTIME('%m', order_date) = '02' THEN 'Feb'
       WHEN STRFTIME('%m', order_date) = '03' THEN 'Mar'
       ELSE 'Apr'
   END AS month_name,
   sum(real_amount) AS sum_sales
FROM sub
GROUP by STRFTIME('%m', order_date)
ORDER by month
```

n	32
b	16.2
ır	28
	2
1	