

# SQL Case Study: Texture Tales

## Creating a Database

```
CREATE DATABASE texture_tales;
```

## Output

	name	database_id
1	master	1
2	tempdb	2
3	model	3
4	msdb	4
5	MypracticeDB	5
6	subtotal	6
7	practiceDB	7
8	texture_tales	8

## Creating Tables

### Product Details Table

```
-- product table
✓ CREATE TABLE product_details(
  product_id    VARCHAR(6) NOT NULL PRIMARY KEY
, price         INTEGER  NOT NULL
, product_name  VARCHAR(32) NOT NULL
, category_id   INTEGER  NOT NULL
, segment_id    INTEGER  NOT NULL
, style_id      INTEGER  NOT NULL
, category_name VARCHAR(6) NOT NULL
, segment_name  VARCHAR(6) NOT NULL
, style_name    VARCHAR(19) NOT NULL
);
```

## Sales Details Table

```
-- sales table
CREATE TABLE sales(
    prod_id          VARCHAR(6) NOT NULL
    ,qty             INTEGER NOT NULL
    ,price           INTEGER NOT NULL
    ,discount        INTEGER NOT NULL
    ,member          VARCHAR(5) NOT NULL
    ,txn_id          VARCHAR(6) NOT NULL
    ,start_txn_time  VARCHAR(24) NOT NULL
);
```

## Product Hierarchy Table

```
-- product hierarchy table
CREATE TABLE product_hierarchy(
    id              INTEGER NOT NULL PRIMARY KEY
    ,parent_id      INTEGER
    ,level_text     VARCHAR(19) NOT NULL
    ,level_name     VARCHAR(8) NOT NULL
);
```

## Output

	name	object_id	principal_id	schema_id	parent_object_id	type	type_desc
1	product_details	1205579333	NULL	1	0	U	USER_TABLE
2	sales	1237579447	NULL	1	0	U	USER_TABLE
3	product_hierarchy	1253579504	NULL	1	0	U	USER_TABLE

## Inserting values into the Tables

### Product Details table insertion

```
-- inserting values into product details table
INSERT INTO product_details(product_id,price,product_name,category_id,segment_id,style_id,category_name,segment_name,style_name)
VALUES ('c4a632',13,'Navy Oversized Jeans - Womens',1,3,7,'Womens','Jeans','Navy Oversized');
INSERT INTO product_details(product_id,price,product_name,category_id,segment_id,style_id,category_name,segment_name,style_name)
VALUES ('e83aa3',32,'Black Straight Jeans - Womens',1,3,8,'Womens','Jeans','Black Straight');
INSERT INTO product_details(product_id,price,product_name,category_id,segment_id,style_id,category_name,segment_name,style_name)
VALUES ('e31d39',10,'Cream Relaxed Jeans - Womens',1,3,9,'Womens','Jeans','Cream Relaxed');
INSERT INTO product_details(product_id,price,product_name,category_id,segment_id,style_id,category_name,segment_name,style_name)
VALUES ('d5e9a6',23,'Khaki Suit Jacket - Womens',1,4,10,'Womens','Jacket','Khaki Suit');
INSERT INTO product_details(product_id,price,product_name,category_id,segment_id,style_id,category_name,segment_name,style_name)
VALUES ('72f5d4',19,'Indigo Rain Jacket - Womens',1,4,11,'Womens','Jacket','Indigo Rain');
INSERT INTO product_details(product_id,price,product_name,category_id,segment_id,style_id,category_name,segment_name,style_name)
VALUES ('9ec847',54,'Grey Fashion Jacket - Womens',1,4,12,'Womens','Jacket','Grey Fashion');
INSERT INTO product_details(product_id,price,product_name,category_id,segment_id,style_id,category_name,segment_name,style_name)
VALUES ('5d267b',40,'White Tee Shirt - Mens',2,5,13,'Mens','Shirt','White Tee');
INSERT INTO product_details(product_id,price,product_name,category_id,segment_id,style_id,category_name,segment_name,style_name)
VALUES ('c8d436',10,'Teal Button Up Shirt - Mens',2,5,14,'Mens','Shirt','Teal Button Up');
INSERT INTO product_details(product_id,price,product_name,category_id,segment_id,style_id,category_name,segment_name,style_name)
VALUES ('2a2353',57,'Blue Polo Shirt - Mens',2,5,15,'Mens','Shirt','Blue Polo');
INSERT INTO product_details(product_id,price,product_name,category_id,segment_id,style_id,category_name,segment_name,style_name)
VALUES ('f084eb',36,'Navy Solid Socks - Mens',2,6,16,'Mens','Socks','Navy Solid');
INSERT INTO product_details(product_id,price,product_name,category_id,segment_id,style_id,category_name,segment_name,style_name)
VALUES ('b9a74d',17,'White Striped Socks - Mens',2,6,17,'Mens','Socks','White Striped');
INSERT INTO product_details(product_id,price,product_name,category_id,segment_id,style_id,category_name,segment_name,style_name)
VALUES ('2feb6b',29,'Pink Fluro Polkadot Socks - Mens',2,6,18,'Mens','Socks','Pink Fluro Polkadot');
```

## Output

	product_id	price	product_name	category_id	segment_id	style_id	category_name	segment_name	style_name
1	2a2353	57	Blue Polo Shirt - Mens	2	5	15	Mens	Shirt	Blue Polo
2	2feb6b	29	Pink Fluro Polkadot Socks - Mens	2	6	18	Mens	Socks	Pink Fluro Polkadot
3	5d267b	40	White Tee Shirt - Mens	2	5	13	Mens	Shirt	White Tee
4	72f5d4	19	Indigo Rain Jacket - Womens	1	4	11	Womens	Jacket	Indigo Rain
5	9ec847	54	Grey Fashion Jacket - Womens	1	4	12	Womens	Jacket	Grey Fashion
6	b9a74d	17	White Striped Socks - Mens	2	6	17	Mens	Socks	White Striped
7	c4a632	13	Navy Oversized Jeans - Womens	1	3	7	Womens	Jeans	Navy Oversized
8	c8d436	10	Teal Button Up Shirt - Mens	2	5	14	Mens	Shirt	Teal Button Up
9	d5e9a6	23	Khaki Suit Jacket - Womens	1	4	10	Womens	Jacket	Khaki Suit
10	e31d39	10	Cream Relaxed Jeans - Womens	1	3	9	Womens	Jeans	Cream Relaxed
11	e83aa3	32	Black Straight Jeans - Womens	1	3	8	Womens	Jeans	Black Straight
12	f084eb	36	Navy Solid Socks - Mens	2	6	16	Mens	Socks	Navy Solid

## Sales table insertion

```

INSERT INTO sales(prod_id,qty,price,discount,member,txn_id,start_txn_time) VALUES ('c4a632',4,13,17,'true','54f307','2021-02-13T01:59:43.296Z');
INSERT INTO sales(prod_id,qty,price,discount,member,txn_id,start_txn_time) VALUES ('5d267b',4,40,17,'true','54f307','2021-02-13T01:59:43.296Z');
INSERT INTO sales(prod_id,qty,price,discount,member,txn_id,start_txn_time) VALUES ('b9a74d',4,17,17,'true','54f307','2021-02-13T01:59:43.296Z');
INSERT INTO sales(prod_id,qty,price,discount,member,txn_id,start_txn_time) VALUES ('2feb6b',2,29,17,'true','54f307','2021-02-13T01:59:43.296Z');
INSERT INTO sales(prod_id,qty,price,discount,member,txn_id,start_txn_time) VALUES ('c4a632',5,13,21,'true','26cc98','2021-01-19T01:39:00.346Z');
INSERT INTO sales(prod_id,qty,price,discount,member,txn_id,start_txn_time) VALUES ('e31d39',2,10,21,'true','26cc98','2021-01-19T01:39:00.346Z');
INSERT INTO sales(prod_id,qty,price,discount,member,txn_id,start_txn_time) VALUES ('72f5d4',3,19,21,'true','26cc98','2021-01-19T01:39:00.346Z');
INSERT INTO sales(prod_id,qty,price,discount,member,txn_id,start_txn_time) VALUES ('2a2353',3,57,21,'true','26cc98','2021-01-19T01:39:00.346Z');
INSERT INTO sales(prod_id,qty,price,discount,member,txn_id,start_txn_time) VALUES ('f084eb',3,36,21,'true','26cc98','2021-01-19T01:39:00.346Z');
INSERT INTO sales(prod_id,qty,price,discount,member,txn_id,start_txn_time) VALUES ('c4a632',1,13,21,'false','ef648d','2021-01-27T02:18:17.165Z');
INSERT INTO sales(prod_id,qty,price,discount,member,txn_id,start_txn_time) VALUES ('e83aa3',5,32,21,'false','ef648d','2021-01-27T02:18:17.165Z');
INSERT INTO sales(prod_id,qty,price,discount,member,txn_id,start_txn_time) VALUES ('d5e9a6',1,23,21,'false','ef648d','2021-01-27T02:18:17.165Z');
INSERT INTO sales(prod_id,qty,price,discount,member,txn_id,start_txn_time) VALUES ('72f5d4',1,19,21,'false','ef648d','2021-01-27T02:18:17.165Z');
INSERT INTO sales(prod_id,qty,price,discount,member,txn_id,start_txn_time) VALUES ('5d267b',3,40,21,'false','ef648d','2021-01-27T02:18:17.165Z');
INSERT INTO sales(prod_id,qty,price,discount,member,txn_id,start_txn_time) VALUES ('f084eb',4,36,21,'false','ef648d','2021-01-27T02:18:17.165Z');
INSERT INTO sales(prod_id,qty,price,discount,member,txn_id,start_txn_time) VALUES ('b9a74d',4,17,21,'false','ef648d','2021-01-27T02:18:17.165Z');
INSERT INTO sales(prod_id,qty,price,discount,member,txn_id,start_txn_time) VALUES ('c4a632',2,13,23,'true','fba96f','2021-03-03T00:32:56.054Z');

```

## Output

	prod_id	qty	price	discount	member	txn_id	start_txn_time
1	c4a632	4	13	17	true	54f307	2021-02-13T01:59:43.296Z
2	5d267b	4	40	17	true	54f307	2021-02-13T01:59:43.296Z
3	b9a74d	4	17	17	true	54f307	2021-02-13T01:59:43.296Z
4	2feb6b	2	29	17	true	54f307	2021-02-13T01:59:43.296Z
5	c4a632	5	13	21	true	26cc98	2021-01-19T01:39:00.346Z
6	e31d39	2	10	21	true	26cc98	2021-01-19T01:39:00.346Z
7	72f5d4	3	19	21	true	26cc98	2021-01-19T01:39:00.346Z
8	2a2353	3	57	21	true	26cc98	2021-01-19T01:39:00.346Z
9	f084eb	3	36	21	true	26cc98	2021-01-19T01:39:00.346Z
10	c4a632	1	13	21	false	ef648d	2021-01-27T02:18:17.165Z
11	e83aa3	5	32	21	false	ef648d	2021-01-27T02:18:17.165Z
12	d5e9a6	1	23	21	false	ef648d	2021-01-27T02:18:17.165Z
13	72f5d4	1	19	21	false	ef648d	2021-01-27T02:18:17.165Z
14	5d267b	3	40	21	false	ef648d	2021-01-27T02:18:17.165Z
15	f084eb	4	36	21	false	ef648d	2021-01-27T02:18:17.165Z
16	b9a74d	4	17	21	false	ef648d	2021-01-27T02:18:17.165Z
17	c4a632	2	13	23	true	fba96f	2021-03-03T00:32:56.054Z
18	e31d39	5	10	23	true	fba96f	2021-03-03T00:32:56.054Z
19	9ec847	3	54	23	true	fba96f	2021-03-03T00:32:56.054Z
20	f084eb	4	36	23	true	fba96f	2021-03-03T00:32:56.054Z
21	2feb6b	2	29	23	true	fba96f	2021-03-03T00:32:56.054Z

## Product Hierarchy table insertion

```
INSERT INTO product_hierarchy(id,parent_id,level_text,level_name) VALUES (1,NULL,'Womens','Category');
INSERT INTO product_hierarchy(id,parent_id,level_text,level_name) VALUES (2,NULL,'Mens','Category');
INSERT INTO product_hierarchy(id,parent_id,level_text,level_name) VALUES (3,1,'Jeans','Segment');
INSERT INTO product_hierarchy(id,parent_id,level_text,level_name) VALUES (4,1,'Jacket','Segment');
INSERT INTO product_hierarchy(id,parent_id,level_text,level_name) VALUES (5,2,'Shirt','Segment');
INSERT INTO product_hierarchy(id,parent_id,level_text,level_name) VALUES (6,2,'Socks','Segment');
INSERT INTO product_hierarchy(id,parent_id,level_text,level_name) VALUES (7,3,'Navy Oversized','Style');
INSERT INTO product_hierarchy(id,parent_id,level_text,level_name) VALUES (8,3,'Black Straight','Style');
INSERT INTO product_hierarchy(id,parent_id,level_text,level_name) VALUES (9,3,'Cream Relaxed','Style');
INSERT INTO product_hierarchy(id,parent_id,level_text,level_name) VALUES (10,4,'Khaki Suit','Style');
INSERT INTO product_hierarchy(id,parent_id,level_text,level_name) VALUES (11,4,'Indigo Rain','Style');
INSERT INTO product_hierarchy(id,parent_id,level_text,level_name) VALUES (12,4,'Grey Fashion','Style');
INSERT INTO product_hierarchy(id,parent_id,level_text,level_name) VALUES (13,5,'White Tee','Style');
INSERT INTO product_hierarchy(id,parent_id,level_text,level_name) VALUES (14,5,'Teal Button Up','Style');
INSERT INTO product_hierarchy(id,parent_id,level_text,level_name) VALUES (15,5,'Blue Polo','Style');
INSERT INTO product_hierarchy(id,parent_id,level_text,level_name) VALUES (16,6,'Navy Solid','Style');
INSERT INTO product_hierarchy(id,parent_id,level_text,level_name) VALUES (17,6,'White Striped','Style');
INSERT INTO product_hierarchy(id,parent_id,level_text,level_name) VALUES (18,6,'Pink Fluro Polkadot','Style');
```

## Output

	id	parent_id	level_text	level_name
1	1	NULL	Womens	Category
2	2	NULL	Mens	Category
3	3	1	Jeans	Segment
4	4	1	Jacket	Segment
5	5	2	Shirt	Segment
6	6	2	Socks	Segment
7	7	3	Navy Oversized	Style
8	8	3	Black Straight	Style
9	9	3	Cream Relaxed	Style
10	10	4	Khaki Suit	Style
11	11	4	Indigo Rain	Style
12	12	4	Grey Fashion	Style

✓ Query executed successfully.

# CASE STUDY QUESTIONS

## 1. What was the total quantity sold for all products?

```
select p.product_name, sum(s.qty) as total_quantity
from product_details as p
join sales as s on p.product_id = s.prod_id
group by product_name
order by 2 desc;
```

## Output

	product_name	total_quantity
1	Grey Fashion Jacket - Womens	3876
2	Navy Oversized Jeans - Womens	3856
3	Blue Polo Shirt - Mens	3819
4	White Tee Shirt - Mens	3800
5	Navy Solid Socks - Mens	3792
6	Black Straight Jeans - Womens	3786
7	Pink Fluro Polkadot Socks - Mens	3770
8	Indigo Rain Jacket - Womens	3757
9	Khaki Suit Jacket - Womens	3752
10	Cream Relaxed Jeans - Womens	3707
11	White Striped Socks - Mens	3655
12	Teal Button Up Shirt - Mens	3646

## 2. What is the total generated revenue for all products before discounts?

```
select sum(price * qty ) as total_generated_revenue from sales;
```

## Output

	total_generated_revenue
1	1289453

## 3. What was the total discount amount for all products?

```
select sum(price * qty * discount)/100 as total_discount from sales;
```

## Output

	total_discount
1	156229

## 4. How many unique transactions were there?

```
select count(distinct txn_id) as unique_transactions from sales;
```

## Output

	unique_transactions
1	2500

## 5. What are the average unique products purchased in each transaction?

```
select avg(prod_count) as average_unique_prod from
(select txn_id, count(distinct prod_id) as prod_count from sales
group by txn_id) a;
```

## Output

	average_unique_prod
1	6

## 6. What is the average discount value per transaction?

```
select avg(total_discount) as avg_discount from
(select txn_id, sum(price * qty * discount)/100 as total_discount from sales
group by txn_id) a;
```

## Output

	avg_discount
1	62

## 7. What is the average revenue for member transactions and nonmember transactions?

```
select member, avg(revenue) as average_revenue from
(select member, txn_id, sum(price*qty) as revenue from sales
group by member, txn_id) a
group by member;
```

## Output

	member	average_revenue
1	false	515
2	true	516



## 8. What are the top 3 products by total revenue before discount?

```
select top 3 p.product_name, sum(s.price * s.qty) as top_three_total_revenue
from product_details as p
inner join sales as s on p.product_id = s.prod_id
group by product_name
order by top_three_total_revenue desc;
```

### Output

	product_name	top_three_total_revenue
1	Blue Polo Shirt - Mens	217683
2	Grey Fashion Jacket - Womens	209304
3	White Tee Shirt - Mens	152000

## 9. What are the total quantity, revenue and discount for each segment?

```
select p.segment_id, p.segment_name,
sum(s.qty) as total_quantity,
sum(s.qty * s.price) as total_revenue,
sum(s.qty * s.price * s.discount)/100 as total_discount from sales s
inner join product_details p on s.prod_id = p.product_id
group by p.segment_id, p.segment_name
```

### Output

	segment_id	segment_name	total_quantity	total_revenue	total_discount
1	4	Jacket	11385	366983	44277
2	3	Jeans	11349	208350	25343
3	5	Shirt	11265	406143	49594
4	6	Socks	11217	307977	37013

## 10. What is the top selling product for each segment?

```
select top 5 p.segment_id, p.segment_name, p.product_id, p.product_name, sum(s.qty) as product_quan
from sales s
inner join product_details p on p.product_id = s.prod_id
group by p.segment_id, p.segment_name, p.product_id, p.product_name
order by product_quan desc;
```

### Output

	segment_id	segment_name	product_id	product_name	product_quantity
1	4	Jacket	9ec847	Grey Fashion Jacket - Womens	3876
2	3	Jeans	c4a632	Navy Oversized Jeans - Womens	3856
3	5	Shirt	2a2353	Blue Polo Shirt - Mens	3819
4	5	Shirt	5d267b	White Tee Shirt - Mens	3800
5	6	Socks	f084eb	Navy Solid Socks - Mens	3792

## 11. What are the total quantity, revenue and discount for each category?

```
select p.category_id, p.category_name,
sum(s.qty) as total_quantity,
sum(s.qty * s.price) as total_revenue,
sum(s.qty * s.price * s.discount)/100 as total_discount
from sales s
inner join product_details p on p.product_id = s.prod_id
group by p.category_id, p.category_name
```

### Output

	category_id	category_name	total_quantity	total_revenue	total_discount
1	2	Mens	22482	714120	86607
2	1	Womens	22734	575333	69621

## 12. What is the top selling product for each category?

```
select top 5 p.category_id, p.category_name, p.product_id, p.product_name, sum(s.qty) as product_data
from sales s
inner join product_details p on p.product_id = s.prod_id
group by p.category_id, p.category_name, p.product_id, p.product_name
order by product_data desc;
```

### Output

	category_id	category_name	product_id	product_name	product_data
1	1	Womens	9ec847	Grey Fashion Jacket - Womens	3876
2	1	Womens	c4a632	Navy Oversized Jeans - Womens	3856
3	2	Mens	2a2353	Blue Polo Shirt - Mens	3819
4	2	Mens	5d267b	White Tee Shirt - Mens	3800
5	2	Mens	f084eb	Navy Solid Socks - Mens	3792