SQL PRACTICE

TRAINEE NAME : SWATHI BASKARAN

Creation of Database and Insertion of Data:

```
SQLQuery1.sql - LA...AAUBJ2\swath (53))*  ⊣ ×
SELECT name from sys.databases;
CREATE DATABASE Practice2DB;
USE Practice2DB;

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
);
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 Jea
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 Jea
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 Jean
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
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
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 Jacke
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 -
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 Sh
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 -
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 -
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 Sock
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 Polkado

CREATE TABLE product_hierarchy(
     id             INTEGER  NOT NULL PRIMARY KEY
    ,parent_id  INTEGER
    ,level_text VARCHAR(19) NOT NULL
```
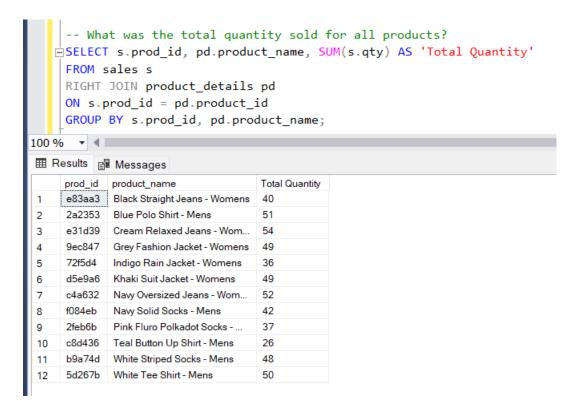
```
CREATE TABLE product_hierarchy(
     id             INTEGER   NOT NULL PRIMARY KEY
    ,parent_id  INTEGER
    ,level_text VARCHAR(19) NOT NULL
    ,level_name VARCHAR(8) NOT NULL
);
INSERT INTO product_hierarchy(id,parent_id,level_text,level_name) VALUES (1,NULL,'Womens','Category');
INSERT INTO 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');
```

```
CREATE TABLE product_prices(
     id             INTEGER  NOT NULL PRIMARY KEY
    ,product_id VARCHAR(6) NOT NULL
    ,price      INTEGER  NOT NULL
);
INSERT INTO product_prices(id,product_id,price) VALUES (7,'c4a632',13);
INSERT INTO product_prices(id,product_id,price) VALUES (8,'e83aa3',32);
INSERT INTO product_prices(id,product_id,price) VALUES (9,'e31d39',10);
INSERT INTO product_prices(id,product_id,price) VALUES (10,'d5e9a6',23);
INSERT INTO product_prices(id,product_id,price) VALUES (11,'72f5d4',19);
INSERT INTO product_prices(id,product_id,price) VALUES (12,'9ec847',54);
INSERT INTO product_prices(id,product_id,price) VALUES (13,'5d267b',40);
INSERT INTO product_prices(id,product_id,price) VALUES (14,'c8d436',10);
INSERT INTO product_prices(id,product_id,price) VALUES (15,'2a2353',57);
INSERT INTO product_prices(id,product_id,price) VALUES (16,'f084eb',36);
INSERT INTO product_prices(id,product_id,price) VALUES (17,'b9a74d',17);
INSERT INTO product_prices(id,product_id,price) VALUES (18,'2feb6b',29);
```
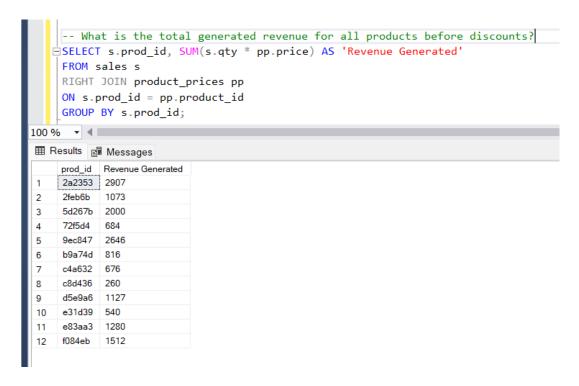
```sql
SQLQuery1.sql - LA...AAUBJ2\swath (53))*

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
);
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');
INSERT INTO sales(prod_id,qty,price,discount,member,txn_id,start_txn_time) VALUES ('e31d39',5,10,23,'true','fba96f','2021-03-03T00:32:56.054Z');
INSERT INTO sales(prod_id,qty,price,discount,member,txn_id,start_txn_time) VALUES ('9ec847',3,54,23,'true','fba96f','2021-03-03T00:32:56.054Z');
INSERT INTO sales(prod_id,qty,price,discount,member,txn_id,start_txn_time) VALUES ('f084eb',4,36,23,'true','fba96f','2021-03-03T00:32:56.054Z');
INSERT INTO sales(prod_id,qty,price,discount,member,txn_id,start_txn_time) VALUES ('2feb6b',2,29,23,'true','fba96f','2021-03-03T00:32:56.054Z');
INSERT INTO sales(prod_id,qty,price,discount,member,txn_id,start_txn_time) VALUES ('c4a632',5,13,11,'true','4e9268','2021-01-23T14:18:54.058Z');
INSERT INTO sales(prod_id,qty,price,discount,member,txn_id,start_txn_time) VALUES ('e31d39',4,10,11,'true','4e9268','2021-01-23T14:18:54.058Z');
```

```sql
SQLQuery1.sql - LA...AAUBJ2\swath (53))*

INSERT INTO sales(prod_id,qty,price,discount,member,txn_id,start_txn_time) VALUES ('e31d39',5,10,16,'true','9e0037','2021-01-09T17:25:31.238Z');
INSERT INTO sales(prod_id,qty,price,discount,member,txn_id,start_txn_time) VALUES ('d5e9a6',1,23,16,'true','9e0037','2021-01-09T17:25:31.238Z');
INSERT INTO sales(prod_id,qty,price,discount,member,txn_id,start_txn_time) VALUES ('72f5d4',1,19,16,'true','9e0037','2021-01-09T17:25:31.238Z');
INSERT INTO sales(prod_id,qty,price,discount,member,txn_id,start_txn_time) VALUES ('f084eb',3,36,16,'true','9e0037','2021-01-09T17:25:31.238Z');
INSERT INTO sales(prod_id,qty,price,discount,member,txn_id,start_txn_time) VALUES ('d5e9a6',5,23,7,'true','d1a249','2021-02-07T21:22:19.718Z');
INSERT INTO sales(prod_id,qty,price,discount,member,txn_id,start_txn_time) VALUES ('72f5d4',4,19,7,'true','d1a249','2021-02-07T21:22:19.718Z');
INSERT INTO sales(prod_id,qty,price,discount,member,txn_id,start_txn_time) VALUES ('9ec847',5,54,7,'true','d1a249','2021-02-07T21:22:19.718Z');
INSERT INTO sales(prod_id,qty,price,discount,member,txn_id,start_txn_time) VALUES ('2a2353',3,57,7,'true','d1a249','2021-02-07T21:22:19.718Z');
INSERT INTO sales(prod_id,qty,price,discount,member,txn_id,start_txn_time) VALUES ('2feb6b',3,29,7,'true','d1a249','2021-02-07T21:22:19.718Z');
INSERT INTO sales(prod_id,qty,price,discount,member,txn_id,start_txn_time) VALUES ('c4a632',2,13,22,'true','f77cc2','2021-02-08T12:29:27.917Z');
INSERT INTO sales(prod_id,qty,price,discount,member,txn_id,start_txn_time) VALUES ('e83aa3',5,32,22,'true','f77cc2','2021-02-08T12:29:27.917Z');
INSERT INTO sales(prod_id,qty,price,discount,member,txn_id,start_txn_time) VALUES ('d5e9a6',3,23,22,'true','f77cc2','2021-02-08T12:29:27.917Z');
INSERT INTO sales(prod_id,qty,price,discount,member,txn_id,start_txn_time) VALUES ('9ec847',3,54,22,'true','f77cc2','2021-02-08T12:29:27.917Z');
INSERT INTO sales(prod_id,qty,price,discount,member,txn_id,start_txn_time) VALUES ('5d267b',3,40,22,'true','f77cc2','2021-02-08T12:29:27.917Z');
INSERT INTO sales(prod_id,qty,price,discount,member,txn_id,start_txn_time) VALUES ('c8d436',5,10,22,'true','f77cc2','2021-02-08T12:29:27.917Z');
INSERT INTO sales(prod_id,qty,price,discount,member,txn_id,start_txn_time) VALUES ('2a2353',5,57,22,'true','f77cc2','2021-02-08T12:29:27.917Z');
INSERT INTO sales(prod_id,qty,price,discount,member,txn_id,start_txn_time) VALUES ('c4a632',2,13,9,'true','1928b1','2021-03-25T08:47:13.286Z');
INSERT INTO sales(prod_id,qty,price,discount,member,txn_id,start_txn_time) VALUES ('e31d39',1,10,9,'true','1928b1','2021-03-25T08:47:13.286Z');
INSERT INTO sales(prod_id,qty,price,discount,member,txn_id,start_txn_time) VALUES ('d5e9a6',1,23,9,'true','1928b1','2021-03-25T08:47:13.286Z');
INSERT INTO sales(prod_id,qty,price,discount,member,txn_id,start_txn_time) VALUES ('9ec847',1,54,9,'true','1928b1','2021-03-25T08:47:13.286Z');
INSERT INTO sales(prod_id,qty,price,discount,member,txn_id,start_txn_time) VALUES ('5d267b',3,40,9,'true','1928b1','2021-03-25T08:47:13.286Z');
INSERT INTO sales(prod_id,qty,price,discount,member,txn_id,start_txn_time) VALUES ('2a2353',4,57,9,'true','1928b1','2021-03-25T08:47:13.286Z');
INSERT INTO sales(prod_id,qty,price,discount,member,txn_id,start_txn_time) VALUES ('b9a74d',1,17,9,'true','1928b1','2021-03-25T08:47:13.286Z');
INSERT INTO sales(prod_id,qty,price,discount,member,txn_id,start_txn_time) VALUES ('2feb6b',5,29,9,'true','1928b1','2021-03-25T08:47:13.286Z');
INSERT INTO sales(prod_id,qty,price,discount,member,txn_id,start_txn_time) VALUES ('e83aa3',1,32,5,'true','c228e3','2021-02-03T00:35:29.933Z');
INSERT INTO sales(prod_id,qty,price,discount,member,txn_id,start_txn_time) VALUES ('d5e9a6',3,23,5,'true','c228e3','2021-02-03T00:35:29.933Z');
INSERT INTO sales(prod_id,qty,price,discount,member,txn_id,start_txn_time) VALUES ('72f5d4',3,19,5,'true','c228e3','2021-02-03T00:35:29.933Z');
INSERT INTO sales(prod_id,qty,price,discount,member,txn_id,start_txn_time) VALUES ('2a2353',4,57,5,'true','c228e3','2021-02-03T00:35:29.933Z');
INSERT INTO sales(prod_id,qty,price,discount,member,txn_id,start_txn_time) VALUES ('e31d39',2,10,23,'true','870d3b','2021-01-20T14:29:24.691Z');
INSERT INTO sales(prod_id,qty,price,discount,member,txn_id,start_txn_time) VALUES ('9ec847',1,54,23,'true','870d3b','2021-01-20T14:29:24.691Z');
INSERT INTO sales(prod_id,qty,price,discount,member,txn_id,start_txn_time) VALUES ('c8d436',4,10,23,'true','870d3b','2021-01-20T14:29:24.691Z');
```

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

```sql
-- What was the total quantity sold for all products?
SELECT s.prod_id, pd.product_name, SUM(s.qty) AS 'Total Quantity'
FROM sales s
RIGHT JOIN product_details pd
ON s.prod_id = pd.product_id
GROUP BY s.prod_id, pd.product_name;
```

100 %

Results | **Messages**

	prod_id	product_name	Total Quantity
1	e83aa3	Black Straight Jeans - Womens	40
2	2a2353	Blue Polo Shirt - Mens	51
3	e31d39	Cream Relaxed Jeans - Wom...	54
4	9ec847	Grey Fashion Jacket - Womens	49
5	72f5d4	Indigo Rain Jacket - Womens	36
6	d5e9a6	Khaki Suit Jacket - Womens	49
7	c4a632	Navy Oversized Jeans - Wom...	52
8	f084eb	Navy Solid Socks - Mens	42
9	2feb6b	Pink Fluro Polkadot Socks - ...	37
10	c8d436	Teal Button Up Shirt - Mens	26
11	b9a74d	White Striped Socks - Mens	48
12	5d267b	White Tee Shirt - Mens	50

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

```sql
-- What is the total generated revenue for all products before discounts?
SELECT s.prod_id, SUM(s.qty * pp.price) AS 'Revenue Generated'
FROM sales s
RIGHT JOIN product_prices pp
ON s.prod_id = pp.product_id
GROUP BY s.prod_id;
```

100 %

Results | **Messages**

	prod_id	Revenue Generated
1	2a2353	2907
2	2feb6b	1073
3	5d267b	2000
4	72f5d4	684
5	9ec847	2646
6	b9a74d	816
7	c4a632	676
8	c8d436	260
9	d5e9a6	1127
10	e31d39	540
11	e83aa3	1280
12	f084eb	1512

3. How many unique transactions were there?

```sql
-- How many unique transactions were there?
SELECT COUNT(DISTINCT txn_id) AS 'Number of Unique transactions'FROM sales;
```

100 %

Results | Messages

	Number of Unique transactions
1	31

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

```sql
-- What are the average unique products purchased in each transaction?
SELECT AVG(prod_count) AS avg_distinct_prod_count
FROM (
    SELECT COUNT(DISTINCT prod_id) AS prod_count
    FROM sales
    GROUP BY txn_id
) AS per_txn_counts;
```

100 %

Results | Messages

	avg_distinct_prod_count
1	5

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

```sql
-- What are the top 3 products by total revenue before discount?
WITH ProductRevenue AS
(SELECT prod_id, SUM(qty*price) AS prod_rev
FROM sales
GROUP BY prod_id),
ProductRanking AS
(
SELECT prod_id, prod_rev,
RANK() OVER( ORDER BY prod_rev DESC) AS revenue_rank
FROM ProductRevenue
)

SELECT pr.prod_id, pd.product_name, pr.prod_rev, pr.revenue_rank
FROM ProductRanking pr
JOIN product_details pd
ON pd.product_id = pr.prod_id
WHERE pr.revenue_rank <= 3
ORDER BY pr.revenue_rank ASC;
```

100 %

Results | Messages

	prod_id	product_name	prod_rev	revenue_rank
1	2a2353	Blue Polo Shirt - Mens	2907	1
2	9ec847	Grey Fashion Jacket - Womens	2646	2
3	5d267b	White Tee Shirt - Mens	2000	3