

Associate Business Intelligence Analyst - Field Nation

NAME: SOUMEN SARKER

TOOL: ORACLE LIVE SQL

#Schema design

#DDL

```
CREATE TABLE customers
(
    customer_id NUMBER
                GENERATED BY DEFAULT AS IDENTITY START WITH 101
                PRIMARY KEY,
    name         VARCHAR2( 255 ) NOT NULL
);
```

```
CREATE TABLE products
(
    product_id NUMBER
                GENERATED BY DEFAULT AS IDENTITY START WITH 11
                PRIMARY KEY,
    product_name VARCHAR2( 255 ) NOT NULL);
```

```
CREATE TABLE orders
(
    order_id VARCHAR(20),
    PRIMARY KEY (order_id),
    customer_id NUMBER( 6, 0 ) NOT NULL, -- fk
    status      VARCHAR( 20 ) NOT NULL ,
    order_date  DATE NOT NULL,
    CONSTRAINT fk_orders_customers
        FOREIGN KEY( customer_id )
        REFERENCES customers( customer_id )
        ON DELETE CASCADE);
```

```
CREATE TABLE order_items
(
```

```

order_id VARCHAR(20), -- pk
item_id    NUMBER( 12, 0 ),
product_id NUMBER( 12, 0 ) NOT NULL, --pk
quantity   NUMBER( 8, 2 )
);

```

```

Insert into CUSTOMERS (CUSTOMER_ID,NAME) values (101,'Ben Franklin');
Insert into CUSTOMERS (CUSTOMER_ID,NAME) values (234,'Walmart');
Insert into CUSTOMERS (CUSTOMER_ID,NAME) values (998,'Target');
Insert into CUSTOMERS (CUSTOMER_ID,NAME) values (6751,'Camping Supply');
Insert into CUSTOMERS (CUSTOMER_ID,NAME) values (7787,'Up North Supply');
Insert into CUSTOMERS (CUSTOMER_ID,NAME) values (2314,'Corner Drug');
Insert into CUSTOMERS (CUSTOMER_ID,NAME) values (9832,'Menards');
Insert into CUSTOMERS (CUSTOMER_ID,NAME) values (9876,'Home Depot');
Insert into CUSTOMERS (CUSTOMER_ID,NAME) values (1209,'Acme Store');
Insert into CUSTOMERS (CUSTOMER_ID,NAME) values (1322,'Camping Outfitters');

```

#CUSTOMERS TABLE

CUSTOMER_ID	NAME
101	Ben Franklin
234	Walmart
998	Target
6751	Camping Supply
7787	Up North Supply
2314	Corner Drug
9832	Menards
9876	Home Depot
1209	Acme Store
1322	Camping Outfitters

```

Insert into PRODUCTS (PRODUCT_ID,PRODUCT_NAME) values (11,'4 person tent');
Insert into PRODUCTS (PRODUCT_ID,PRODUCT_NAME) values (23,'2 person tent');
Insert into PRODUCTS (PRODUCT_ID,PRODUCT_NAME) values (26,'camping stove(small)');
Insert into PRODUCTS (PRODUCT_ID,PRODUCT_NAME) values (46,'camping stove(large)');
Insert into PRODUCTS (PRODUCT_ID,PRODUCT_NAME) values (55,'flashlight');
Insert into PRODUCTS (PRODUCT_ID,PRODUCT_NAME) values (61,'sleeping bag');
Insert into PRODUCTS (PRODUCT_ID,PRODUCT_NAME) values (72,'coffee pot');

```

#PRODUCT TABLE

PRODUCT_ID	PRODUCT_NAME
11	4 person tent
23	2 person tent
26	camping stove(small)
46	camping stove(large)
55	flashlight
61	sleeping bag
72	coffee pot

```
Insert into ORDERS (ORDER_ID,CUSTOMER_ID,STATUS,ORDER_DATE) values
('1432aa76e9',998,'open',to_date('19-APR-21','DD-MON-RR'));
Insert into ORDERS (ORDER_ID,CUSTOMER_ID,STATUS,ORDER_DATE) values
('37287dj3ec2',234,'open',to_date('19-APR-21','DD-MON-RR'));
Insert into ORDERS (ORDER_ID,CUSTOMER_ID,STATUS,ORDER_DATE) values
('87bhd76873',101,'open',to_date('19-APR-21','DD-MON-RR'));
Insert into ORDERS (ORDER_ID,CUSTOMER_ID,STATUS,ORDER_DATE) values
('638gje9b3s',2314,'in process',to_date('15-APR-21','DD-MON-RR'));
Insert into ORDERS (ORDER_ID,CUSTOMER_ID,STATUS,ORDER_DATE) values
('9843jeb2di3',9832,'in process',to_date('14-APR-21','DD-MON-RR'));
Insert into ORDERS (ORDER_ID,CUSTOMER_ID,STATUS,ORDER_DATE) values
('28349bae83',6751,'fulfilled',to_date('14-APR-21','DD-MON-RR'));
Insert into ORDERS (ORDER_ID,CUSTOMER_ID,STATUS,ORDER_DATE) values
('54938fealbe',9876,'fulfilled',to_date('14-APR-21','DD-MON-RR'));
Insert into ORDERS (ORDER_ID,CUSTOMER_ID,STATUS,ORDER_DATE) values
('9ir4tpi4s44',998,'fulfilled',to_date('13-APR-21','DD-MON-RR'));
Insert into ORDERS (ORDER_ID,CUSTOMER_ID,STATUS,ORDER_DATE) values
('43q9t4ba43',7787,'fulfilled',to_date('12-APR-21','DD-MON-RR'));
Insert into ORDERS (ORDER_ID,CUSTOMER_ID,STATUS,ORDER_DATE) values
('1243kbek44',234,'fulfilled',to_date('9-APR-21','DD-MON-RR'));
Insert into ORDERS (ORDER_ID,CUSTOMER_ID,STATUS,ORDER_DATE) values
('32239br4t98',1209,'fulfilled',to_date('8-APR-21','DD-MON-RR'));
Insert into ORDERS (ORDER_ID,CUSTOMER_ID,STATUS,ORDER_DATE) values
('5430t4br412',1322,'fulfilled',to_date('8-APR-21','DD-MON-RR'));
```

```

Insert into ORDERS (ORDER_ID,CUSTOMER_ID,STATUS,ORDER_DATE) values
('221948bfe4',998,'fulfilled',to_date('6-APR-21','DD-MON-RR'));
Insert into ORDERS (ORDER_ID,CUSTOMER_ID,STATUS,ORDER_DATE) values
('767763h38g',998,'canceled',to_date('31-MAR-21','DD-MON-RR'));
Insert into ORDERS (ORDER_ID,CUSTOMER_ID,STATUS,ORDER_DATE) values
('15983vibe4',1209,'fulfilled',to_date('31-MAR-21','DD-MON-RR'));
Insert into ORDERS (ORDER_ID,CUSTOMER_ID,STATUS,ORDER_DATE) values
('89823bj4g88',6751,'fulfilled',to_date('29-MAR-21','DD-MON-RR'));
Insert into ORDERS (ORDER_ID,CUSTOMER_ID,STATUS,ORDER_DATE) values
('98743grj3g4',998,'fulfilled',to_date('29-MAR-21','DD-MON-RR'));
Insert into ORDERS (ORDER_ID,CUSTOMER_ID,STATUS,ORDER_DATE) values
('64345dfew4',2314,'fulfilled',to_date('25-MAR-21','DD-MON-RR'));
Insert into ORDERS (ORDER_ID,CUSTOMER_ID,STATUS,ORDER_DATE) values
('74353r3b43',9832,'fulfilled',to_date('25-MAR-21','DD-MON-RR'));
Insert into ORDERS (ORDER_ID,CUSTOMER_ID,STATUS,ORDER_DATE) values
('45754g3wq4',1209,'back ordered',to_date('24-MAR-21','DD-MON-RR'));
Insert into ORDERS (ORDER_ID,CUSTOMER_ID,STATUS,ORDER_DATE) values
('3455fhcw45',101,'fulfilled',to_date('23-MAR-21','DD-MON-RR'));
Insert into ORDERS (ORDER_ID,CUSTOMER_ID,STATUS,ORDER_DATE) values
('49683vbjnr2',7787,'back ordered',to_date('23-MAR-21','DD-MON-RR'));
Insert into ORDERS (ORDER_ID,CUSTOMER_ID,STATUS,ORDER_DATE) values
('5b4i4ain441',9876,'fulfilled',to_date('22-MAR-21','DD-MON-RR'));
Insert into ORDERS (ORDER_ID,CUSTOMER_ID,STATUS,ORDER_DATE) values
('632hn48n4s',998,'canceled',to_date('22-MAR-21','DD-MON-RR'));

```

#ORDERS TABLE

ORDER_ID	CUSTOMER_ID	STATUS	ORDER_DATE
1432aa76e9	998	open	19-APR-21
37287dj3ec2	234	open	19-APR-21
87bhd76873	101	open	19-APR-21
638gje9b3s	2314	in process	15-APR-21
9843jeb2di3	9832	in process	14-APR-21
28349bae83	6751	fulfilled	14-APR-21
54938fealbe	9876	fulfilled	14-APR-21
9ir4tpi4s44	998	fulfilled	13-APR-21
43q9t4ba43	7787	fulfilled	12-APR-21
1243kbek44	234	fulfilled	09-APR-21
32239br4t98	1209	fulfilled	08-APR-21
5430t4br412	1322	fulfilled	08-APR-21
221948bfe4	998	fulfilled	06-APR-21
767763h38g	998	canceled	31-MAR-21

15983vibe4	1209	fulfilled	31-MAR-21
89823bj4g88	6751	fulfilled	29-MAR-21
98743grj3g4	998	fulfilled	29-MAR-21
64345dfew4	2314	fulfilled	25-MAR-21
74353r3b43	9832	fulfilled	25-MAR-21
45754g3wq4	1209	back ordered	24-MAR-21
3455fhcw45	101	fulfilled	23-MAR-21
49683vbjnr2	7787	back ordered	23-MAR-21
5b4i4ain441	9876	fulfilled	22-MAR-21
632hn48n4s	998	canceled	22-MAR-21

```

Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('1243kbek44',11,6);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('1243kbek44',23,12);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('1432aa76e9',55,30);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('15983vibe4',11,10);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('15983vibe4',46,8);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('221948bfe4',61,6);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('221948bfe4',72,10);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('221948bfe4',55,30);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID) values ('235bri3434',72);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('235bri3434',55,20);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('28349bae83',11,2);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('28349bae83',23,4);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('28349bae83',61,6);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('32239br4t98',61,8);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('32239br4t98',72,10);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('32239br4t98',52,20);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('3455fhcw45',23,4);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('3455fhcw45',46,8);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('3455fhcw45',55,35);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('37287dj3ec2',11,4);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('37287dj3ec2',23,2);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('37287dj3ec2',72,8);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('43q9t4ba43',72,6);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('43q9t4ba43',55,12);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('43q9t4ba43',23,2);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('45754g3wq4',26,10);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('49683vbjnr2',26,15);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('5430t4br412',11,20);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('5430t4br412',23,12);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('5430t4br412',61,10);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('54938fealbe',61,12);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('54938fealbe',72,12);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('54938fealbe',11,12);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('5b4i4ain441',55,18);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('632hn48n4s',23,8);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('632hn48n4s',11,10);

```

```

Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('632hn48n4s',61,12);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('632hn48n4s',72,12);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('632hn48n4s',55,24);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('638gje9b3s',46,12);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('638gje9b3s',23,6);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('638gje9b3s',72,18);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('64345dfew4',55,24);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('64345dfew4',72,5);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('64345dfew4',61,14);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('74353r3b43',55,30);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('74353r3b43',61,5);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('74353r3b43',23,4);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('767763h38g',23,3);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('767763h38g',46,10);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('767763h38g',61,14);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('87bhd76873',11,10);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('87bhd76873',23,3);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('89823bj4g88',11,4);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('89823bj4g88',46,8);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('9843jeb2di3',55,15);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('9843jeb2di3',61,10);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('9843jeb2di3',23,12);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('9843jeb2di3',11,2);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('98743grj3g4',61,8);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('98743grj3g4',55,20);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('9ir4tpi4s44',11,20);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('9ir4tpi4s44',23,6);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('9ir4tpi4s44',61,10);
Insert into ORDER_ITEMS (ORDER_ID,PRODUCT_ID,QUANTITY) values ('9ir4tpi4s44',55,20);

```

#ORDER_ITEMS TABLE

#FIRST 13 ROWS

ORDER_ID	ITEM_ID	PRODUCT_ID	QUANTITY
1243kbek44	-	11	6
1243kbek44	-	23	12
1432aa76e9	-	55	30
15983vibe4	-	11	10
15983vibe4	-	46	8
221948bfe4	-	61	6
221948bfe4	-	72	10
221948bfe4	-	55	30
235bri3434	-	72	-
235bri3434	-	55	20
28349bae83	-	11	2
28349bae83	-	23	4
28349bae83	-	61	6

#DML

#QUERY_1

```
SELECT customer_id, COUNT(DISTINCT order_id) AS numberOfOrders
FROM orders
GROUP BY customer_id;
```

#OUTPUT

CUSTOMER_ID	NUMBEROFORDERS
2314	2
1322	1
998	6
1209	3
101	2
9832	2
6751	2
234	2
9876	2
7787	2

#QUERY_2

```
SELECT customer_id, COUNT(DISTINCT order_id) as numoforders, round(count(DISTINCT
product_id)/COUNT(DISTINCT order_id)) as avgnumprod
FROM orders
INNER JOIN order_items
      USING(order_id)
GROUP BY customer_id;
```

#OUTPUT

CUSTOMER_ID	NUMOFORDERS	AVGNUMPROD
101	2	2
234	2	2
998	6	1
1209	3	2
1322	1	3
2314	2	3
6751	2	2
7787	2	2
9832	2	2
9876	2	2

#QUERY_3

```
SELECT * FROM (SELECT count(product_id) as num_of_items, product_id,
customer_id
FROM orders
Left JOIN order_items
      USING(order_id)
GROUP BY (customer_id, product_id))
WHERE ROWNUM <= 5;
```

#OUTPUT

NUM_OF_ITEMS	PRODUCT_ID	CUSTOMER_ID
1	11	101
2	23	101
1	46	101
1	55	101
2	11	234

#QUERY_4

```
SELECT customer_id, name as customer_name, product_name as
items_backordered FROM
(SELECT customer_id, product_id
FROM orders
Left JOIN order_items
      USING(order_id)
where status='back ordered')
LEFT JOIN customers
      USING(customer_id)
LEFT JOIN products
      USING(product_id);
```

#OUTPUT

CUSTOMER_ID	CUSTOMER_NAME	ITEMS_BACKORDERED
1209	Acme Store	camping stove(small)
7787	Up North Supply	camping stove(small)

#QUERY_5

WITH

CUS AS (SELECT customer_id from orders where status='fulfilled')

SELECT DISTINCT customer_id FROM CUS

ORDER BY CUSTOMER_ID ASC;

#OUTPUT

CUSTOMER_ID
101
234
998
1209
1322
2314
6751
7787
9832
9876

#QUERY_6

select order_id,

ROW_NUMBER() over(partition by product_id order by quantity,

product_id) as item_id,

product_id, quantity from order_items;

#OUTPUT

#FIRST FEW ROWS

ORDER_ID	ITEM_ID	PRODUCT_ID	QUANTITY
9843jeb2di3	1	11	2
28349bae83	2	11	2
37287dj3ec2	3	11	4
89823bj4g88	4	11	4
1243kbek44	5	11	6
632hn48n4s	6	11	10
87bhd76873	7	11	10
15983vibe4	8	11	10
54938fealbe	9	11	12
5430t4br412	10	11	20
9ir4tpi4s44	11	11	20

43q9t4ba43	1	23	2
37287dj3ec2	2	23	2
767763h38g	3	23	3
87bhd76873	4	23	3
74353r3b43	5	23	4
3455fhcw45	6	23	4
28349bae83	7	23	4
9ir4tpi4s44	8	23	6
638gje9b3s	9	23	6
632hn48n4s	10	23	8
9843jeb2di3	11	23	12
1243kbek44	12	23	12
5430t4br412	13	23	12
45754g3wq4	1	26	10