**EXPERIMENT 1**

**SUPERMARKET STAR SCHEMA**

**TABLES**

**Product Dimension Table**

mysql> select \* from pdt;

+-------+------------------+----------------------------+------------+-------+

| p\_key | name | brand | category | price |

+-------+------------------+----------------------------+------------+-------+

| 1 | good day cookies | britannia | biscuit | 20.00 |

| 2 | marie biscuit | britannia | biscuit | 28.00 |

| 3 | parle g | parle | biscuit | 5.00 |

| 4 | bourbon biscuit | britannia | biscuit | 10.00 |

| 5 | aloo bhujia | haldiram | namkeen | 30.00 |

| 6 | all in one | haldiram | namkeen | 40.00 |

| 7 | lemon bhel | haldiram | namkeen | 28.00 |

| 8 | dant kanti | patanjali | toothpaste | 60.00 |

| 9 | max fresh | colgate | toothpaste | 48.00 |

| 10 | pepsodent | hindustan unilever limited | toothpaste | 70.00 |

| 11 | closeup | hindustan unilever limited | toothpaste | 65.00 |

| 12 | mogra | patanjali | soap | 25.00 |

| 13 | moti | hindustan unilever limited | soap | 50.00 |

| 14 | hamam | hindustan unilever limited | soap | 60.00 |

+-------+------------------+----------------------------+------------+-------+

14 rows in set (0.00 sec)

**Time Dimension Table**

mysql> select \* from tdt;

+-------+------+---------+----------+------+------+

| t\_key | year | quarter | month | week | date |

+-------+------+---------+----------+------+------+

| 1 | 2019 | q1 | january | 1 | 4 |

| 2 | 2019 | q1 | january | 4 | 24 |

| 3 | 2018 | q1 | february | 6 | 9 |

| 4 | 2018 | q1 | february | 7 | 14 |

| 5 | 2018 | q1 | february | 9 | 26 |

| 6 | 2018 | q3 | june | 24 | 13 |

| 7 | 2018 | q3 | june | 26 | 30 |

| 8 | 2017 | q2 | april | 15 | 11 |

| 9 | 2017 | q2 | april | 18 | 30 |

| 10 | 2017 | q2 | may | 18 | 5 |

| 11 | 2018 | q4 | october | 43 | 25 |

| 12 | 2018 | q4 | october | 41 | 12 |

| 13 | 2018 | q4 | december | 49 | 7 |

| 14 | 2018 | q4 | december | 51 | 18 |

| 15 | 2018 | q4 | december | 52 | 31 |

+-------+------+---------+----------+------+------+

15 rows in set (0.00 sec)

**Store Dimension Table**

mysql> select \* from sdt;

+-------+-------------------+-----------+---------------+--------+

| s\_key | area | city | state | region |

+-------+-------------------+-----------+---------------+--------+

| 1 | sion | mumbai | maharashtra | west |

| 2 | m.g. road | bengaluru | karnataka | south |

| 3 | andheri | mumbai | maharashtra | west |

| 4 | narayanpura | bengaluru | karnataka | south |

| 5 | jayalakshmi puram | mysore | karnataka | south |

| 6 | kanchanpur | varanasi | uttar pradesh | north |

| 7 | lanka | varanasi | uttar pradesh | north |

| 8 | indira nagar | lucknow | uttar pradesh | north |

| 9 | Kavi Nagar | ghaziabad | uttar pradesh | north |

| 10 | Kamla Nehru Nagar | ghaziabad | uttar pradesh | north |

| 11 | park street | kolkata | west bengal | east |

| 12 | bada bazaar | kolkata | west bengal | east |

| 13 | college street | kolkata | west bengal | east |

| 14 | harrison road | kolkata | west bengal | east |

| 15 | bada paani | shillong | meghalaya | east |

| 16 | police line | shillong | meghalaya | east |

+-------+-------------------+-----------+---------------+--------+

16 rows in set (0.00 sec)

**Promotion Dimension Table**

mysql> select \* from promodt;

+-----------+-------------+----------+

| promo\_key | coupon\_code | discount |

+-----------+-------------+----------+

| 1 | CD129887 | 12 |

| 2 | CD00467 | 20 |

| 3 | CD129134 | 30 |

| 4 | CD10257 | 5 |

| 5 | CD05364 | 27 |

| 6 | CD01694 | 16 |

| 7 | CD326410 | 28 |

| 8 | CD67820 | 13 |

+-----------+-------------+----------+

8 rows in set (0.00 sec)

**Sales Fact Table**

mysql> select \* from salesfact;

+-------------+----------+-----------+---------------+------------+-------------------------+-------------------+

| product\_key | time\_key | store\_key | promotion\_key | units\_sold | sales\_amount\_MRP\_rupees | profit\_percentage |

+-------------+----------+-----------+---------------+------------+-------------------------+-------------------+

| 7 | 2 | 1 | NULL | 7 | 215.60 | 10 |

| 1 | 15 | 1 | NULL | 8 | 178.78 | 5 |

| 1 | 14 | 3 | NULL | 3 | 60.00 | 15 |

| 2 | 1 | 2 | NULL | 4 | 123.20 | 10 |

| 4 | 2 | 4 | NULL | 2 | 22.00 | 10 |

| 6 | 1 | 7 | NULL | 1 | 44.00 | 10 |

| 8 | 2 | 5 | NULL | 10 | 630.00 | 5 |

| 3 | 6 | 9 | NULL | 20 | 110.00 | 10 |

| 5 | 3 | 8 | NULL | 9 | 324.00 | 20 |

| 3 | 3 | 13 | NULL | 4 | 20.00 | NULL |

| 6 | 7 | 4 | NULL | 2 | 80.00 | NULL |

| 4 | 4 | 16 | NULL | 3 | 30.00 | NULL |

| 9 | 8 | 9 | NULL | 1 | 48.00 | NULL |

| 10 | 9 | 14 | 8 | 2 | 127.89 | 5 |

| 10 | 10 | 5 | 5 | 10 | 562.10 | 10 |

| 10 | 13 | 12 | 6 | 40 | 2704.80 | 15 |

| 12 | 11 | 11 | 4 | 30 | 2094.75 | 5 |

| 14 | 12 | 10 | 2 | 15 | 828.00 | 15 |

| 13 | 6 | 12 | 3 | 20 | 735.00 | 5 |

| 12 | 13 | 6 | 7 | 8 | 158.40 | 10 |

| 13 | 1 | 7 | 1 | 4 | 228.00 | 20 |

| 2 | 8 | 9 | NULL | 4 | 20.00 | NULL |

| 3 | 8 | 9 | NULL | 4 | 45.00 | 5 |

| 10 | 10 | 10 | 8 | 2 | 127.89 | 5 |

| 10 | 10 | 10 | 5 | 10 | 562.10 | 10 |

| 10 | 8 | 9 | 6 | 40 | 2704.80 | 15 |

| 2 | 13 | 16 | NULL | 4 | 112.00 | NULL |

| 2 | 14 | 11 | NULL | 2 | 56.00 | NULL |

| 2 | 15 | 13 | NULL | 3 | 84.00 | NULL |

| 2 | 11 | 12 | NULL | 3 | 84.00 | NULL |

| 2 | 12 | 16 | NULL | 3 | 84.00 | NULL |

| 2 | 11 | 15 | NULL | 1 | 28.00 | NULL |

| 13 | 13 | 16 | NULL | 4 | 112.00 | NULL |

| 14 | 4 | 1 | NULL | 2 | 56.00 | NULL |

| 10 | 15 | 3 | NULL | 3 | 84.00 | NULL |

| 9 | 11 | 2 | NULL | 3 | 84.00 | NULL |

| 5 | 12 | 6 | NULL | 3 | 84.00 | NULL |

| 7 | 1 | 5 | NULL | 1 | 28.00 | NULL |

| 9 | 11 | 2 | NULL | 3 | 84.00 | 10 |

| 5 | 12 | 6 | NULL | 3 | 84.00 | 5 |

| 7 | 1 | 5 | NULL | 1 | 28.00 | 15 |

| 2 | 5 | 10 | NULL | 8 | 127.89 | 5 |

| 8 | 10 | 9 | NULL | 10 | 562.10 | 10 |

| 7 | 9 | 8 | NULL | 40 | 2704.80 | 15 |

| 9 | 11 | 2 | 8 | 3 | 84.00 | 10 |

| 5 | 12 | 6 | 7 | 3 | 84.00 | 5 |

| 7 | 1 | 5 | 4 | 1 | 28.00 | 15 |

| 2 | 5 | 10 | 1 | 8 | 127.89 | 5 |

| 8 | 10 | 9 | 1 | 10 | 562.10 | 10 |

| 7 | 9 | 8 | 3 | 40 | 2704.80 | 15 |

+-------------+----------+-----------+---------------+------------+-------------------------+-------------------+

50 rows in set (0.00 sec)

**QUERY 1:**

**Q:** Calculate the net profit for items which were sold at a promotion in 2017 in Ghaziabad.

select sum(profit\_percentage) as net\_profit from salesfact where time\_key in(select t\_key from tdt where year=2017) and store\_key in (select s\_key from sdt where city='ghaziabad') and promotion\_key is not NULL;

+------------+

| net\_profit |

+------------+

| 40 |

+------------+

1 row in set (0.00 sec)

**Query 2**

**Q:** Find the total sales for Marie Biscuits in Eastern region in the last quarter of 2018

mysql> select sum(sales\_amount\_MRP\_rupees) from salesfact where -> product\_key in(select p\_key from pdt where name="marie biscuit") AND

-> time\_key in (select t\_key from tdt where year="2018" and quarter="q4") AND

-> store\_key in (select s\_key from sdt where region="east");

+------------------------------+

| sum(sales\_amount\_MRP\_rupees) |

+------------------------------+

| 448.00 |

+------------------------------+

1 row in set (0.00 sec)

**QUERY 3:**

**Q:** How many units of Pepsodent were sold on 5th May, 2017 in Mysore?

select sum(units\_sold) as total\_units\_sold from salesfact where time\_key in(select t\_key from tdt where year=2017 and date=5 and month like "may") AND store\_key in (select s\_key from sdt where city like "mysore") AND product\_key in(select p\_key from pdt where name like "pepsodent");

+------------------+

| total\_units\_sold |

+------------------+

| 10 |

+------------------+

1 row in set (0.00 sec)

**QUERY 4**

**Q: how many soaps were sold in maharashtra in the year 2017?**

mysql> select sum(units\_sold) from salesfact where product\_key in(select p\_key from pdt where category="soap") AND time\_key in (select t\_key from tdt where year="2017") AND store\_key in (select s\_key from sdt where state="maharashtra");

+-----------------+

| sum(units\_sold) |

+-----------------+

| 502 |

+-----------------+

1 row in set (0.00 sec)

select sum(units\_sold) from salesfact where product\_key in(select p\_key from pdt where category="soap") AND time\_key in (select t\_key from tdt where year="2017") AND store\_key in (select s\_key from sdt where state="maharashtra");  
  
+-----------------+  
  
| sum(units\_sold) |  
  
+-----------------+  
  
| NULL |  
  
+-----------------+  
  
1 row in set (0.00 sec)

**QUERY 5**

**Q:** What were the total sales of Hindustan Unilever brand pan India in the year 2018?

mysql> select sum(units\_sold) as total\_units\_sold, sum(sales\_amount\_MRP\_rupees) as total\_amount from salesfact where product\_key in(select p\_key from pdt where brand="hindustan unilever limited") AND time\_key in (select t\_key from tdt where year="2018");

+------------------+--------------+

| total\_units\_sold | total\_amount |

+------------------+--------------+

| 84 | 4519.80 |

+------------------+--------------+

1 row in set (0.00 sec)