GROUP 5

DELIVERABLE 4 (Part 1)

1) View with CTE and Functions (Ranking, Partition By and Round) with Sorting

Name: vw_latestweight

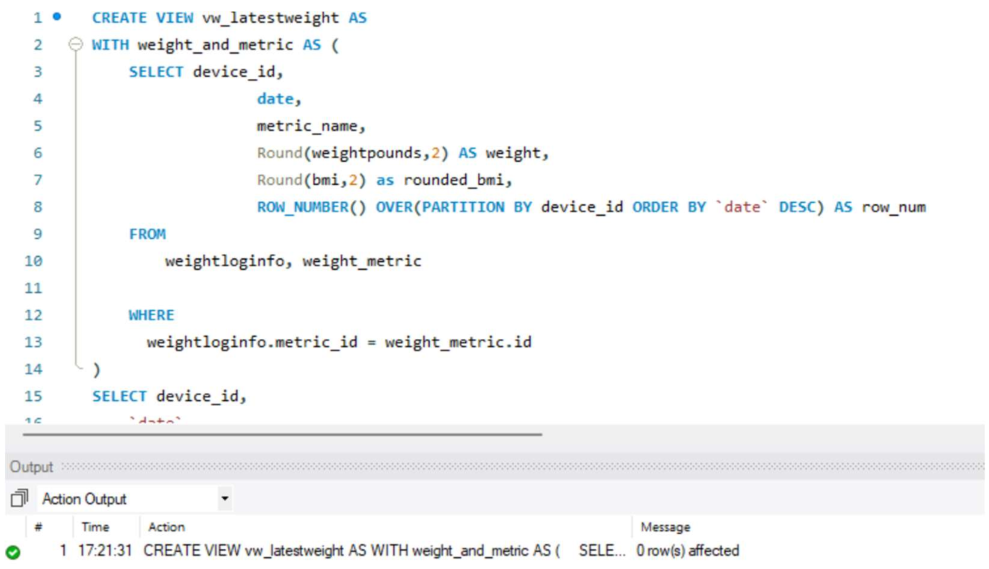
Output: *Table with device_id, date, metric_name, weight, rounded_bmi*

Use Case: The user logs his weight on the mobile application. This view shows the latest weight for each *device_id* with the date when it was logged on, the metric they were recorded in and the corresponding bmi rounded off to two decimals.

Script:

```
CREATE VIEW vw_latestweight AS
WITH weight_and_metric AS (
  SELECT device_id,
         date,
         metric_name,
         Round(weightpounds,2) AS weight,
         Round(bmi,2) as rounded_bmi,
         ROW_NUMBER() OVER(PARTITION BY device_id ORDER BY `date` DESC) AS
row_num
  FROM
    weightloginfo, weight_metric
  WHERE
   weightloginfo.metric_id = weight_metric.id
)
SELECT device_id,
        `date`,
    metric_name,
    weight,
         rounded_bmi
FROM weight_and_metric
WHERE row_num = 1;
```

Results:



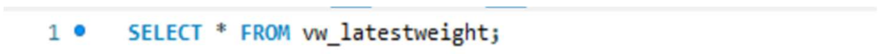
```
CREATE VIEW vw_latestweight AS
WITH weight_and_metric AS (
    SELECT device_id,
                date,
                metric_name,
                Round(weightpounds,2) AS weight,
                Round(bmi,2) as rounded_bmi,
                ROW_NUMBER() OVER(PARTITION BY device_id ORDER BY `date` DESC) AS row_num
    FROM
        weightloginfo, weight_metric

    WHERE
      weightloginfo.metric_id = weight_metric.id
)
SELECT device_id,
```

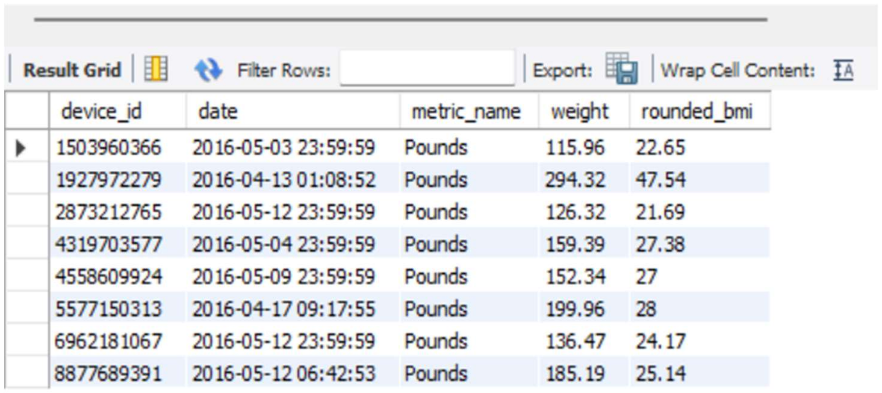
```
Output
Action Output
#   Time      Action                                                        Message
1   17:21:31  CREATE VIEW vw_latestweight AS WITH weight_and_metric AS (   SELE...   0 row(s) affected
```

SELECT Query

*SELECT * FROM vw_latestweight;*



```
SELECT * FROM vw_latestweight;
```



device_id	date	metric_name	weight	rounded_bmi
1503960366	2016-05-03 23:59:59	Pounds	115.96	22.65
1927972279	2016-04-13 01:08:52	Pounds	294.32	47.54
2873212765	2016-05-12 23:59:59	Pounds	126.32	21.69
4319703577	2016-05-04 23:59:59	Pounds	159.39	27.38
4558609924	2016-05-09 23:59:59	Pounds	152.34	27
5577150313	2016-04-17 09:17:55	Pounds	199.96	28
6962181067	2016-05-12 23:59:59	Pounds	136.47	24.17
8877689391	2016-05-12 06:42:53	Pounds	185.19	25.14

2) **<u>View with Aggregate Functions, Conditions (IF clause) Statement, ROLL UP (Summary Function), Group By and Sorting:</u>**

Name: vw_totalCaloriesByMonth

Output: Table with device_id, month, total_calories

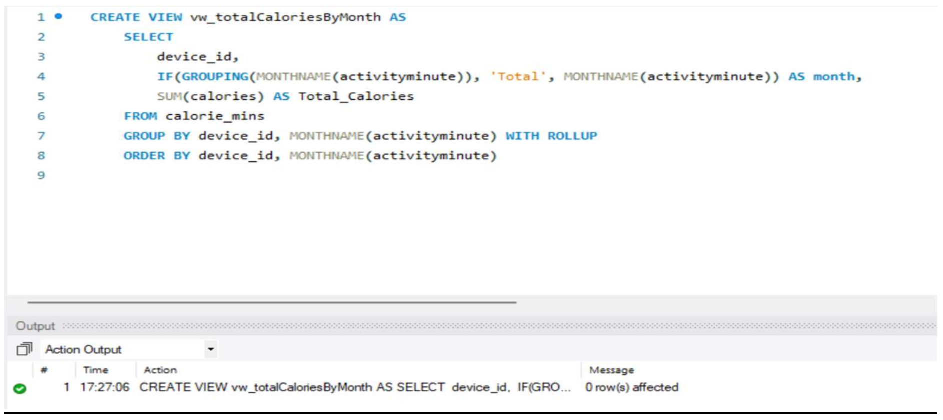
Use Case: The device records calories burned by the wearer every minute. This view returns the total number of calories burned monthly for each device id.

Script:

```
SET GLOBAL sql_mode=(SELECT REPLACE(@@sql_mode,'ONLY_FULL_GROUP_BY',''));

CREATE VIEW vw_totalCaloriesByMonth AS
        SELECT
                device_id,
                IF(GROUPING(MONTHNAME(activityminute)), 'Total',
MONTHNAME(activityminute)) AS month,
                SUM(calories) AS Total_Calories
        FROM calorie_mins
        GROUP BY device_id, MONTHNAME(activityminute) WITH ROLLUP
        ORDER BY device_id, MONTHNAME(activityminute)
```

Results:

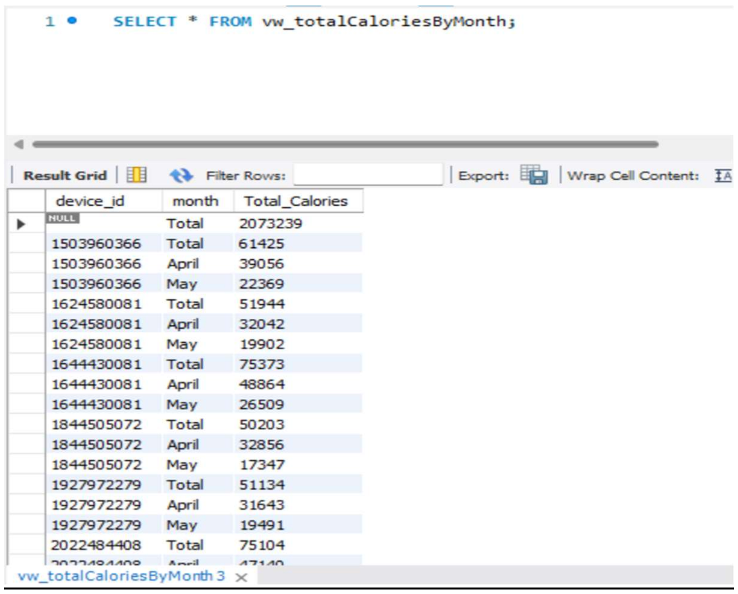


```
CREATE VIEW vw_totalCaloriesByMonth AS
    SELECT
        device_id,
        IF(GROUPING(MONTHNAME(activityminute)), 'Total', MONTHNAME(activityminute)) AS month,
        SUM(calories) AS Total_Calories
    FROM calorie_mins
    GROUP BY device_id, MONTHNAME(activityminute) WITH ROLLUP
    ORDER BY device_id, MONTHNAME(activityminute)
```

```
Output
Action Output
#   Time      Action                                                          Message
1   17:27:06  CREATE VIEW vw_totalCaloriesByMonth AS SELECT device_id, IF(GRO...  0 row(s) affected
```

Select Query:

```
SELECT * FROM vw_totalCaloriesByMonth;
```



```
SELECT * FROM vw_totalCaloriesByMonth;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

device_id	month	Total_Calories
NULL	Total	2073239
1503960366	Total	61425
1503960366	April	39056
1503960366	May	22369
1624580081	Total	51944
1624580081	April	32042
1624580081	May	19902
1644430081	Total	75373
1644430081	April	48864
1644430081	May	26509
1844505072	Total	50203
1844505072	April	32856
1844505072	May	17347
1927972279	Total	51134
1927972279	April	31643
1927972279	May	19491
2022484408	Total	75104

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3) **<u>View with Nested/Sub queries, Joins and Aggregate Functions:</u>**
Name: vw_activity_summary

Output: Table with fitbit_id, activity_name, total_calories_burned, total_active_minutes and date

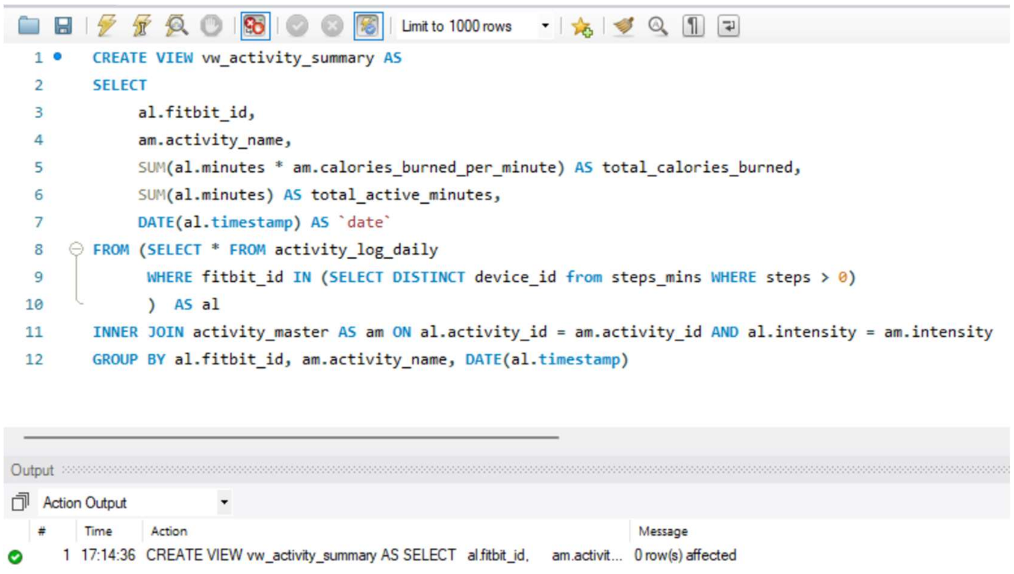
Use Case: The user logs his activities with intensities and the number of minutes spent doing the activity at the given intensity level. This view shows the summary with total minutes and calories burned by the user doing an activity each day.
For E.g., a user may do cycling at low intensity for warm up for 10 mins and 5 mins to cool down and at high intensity for 15 mins. There are different number of calories burned for different activities based on intensity levels. In this user's case, the view will show total of 30 mins spent on cycling with total calories as (calories at low intensities * (10+5 minutes) + calories at high intensity * 15 mins)

Script:

```
CREATE VIEW vw_activity_summary AS
SELECT
            al.fitbit_id,
    am.activity_name,
    SUM(al.minutes * am.calories_burned_per_minute) AS total_calories_burned,
    SUM(al.minutes) AS total_active_minutes,
    DATE(al.timestamp) AS `date`
FROM (SELECT * FROM activity_log_daily
            WHERE fitbit_id IN (SELECT DISTINCT device_id from steps_mins WHERE steps > 0)
    )  AS al
```

INNER JOIN activity_master AS am ON al.activity_id = am.activity_id AND al.intensity = am.intensity
GROUP BY al.fitbit_id, am.activity_name, DATE(al.timestamp)

Results:

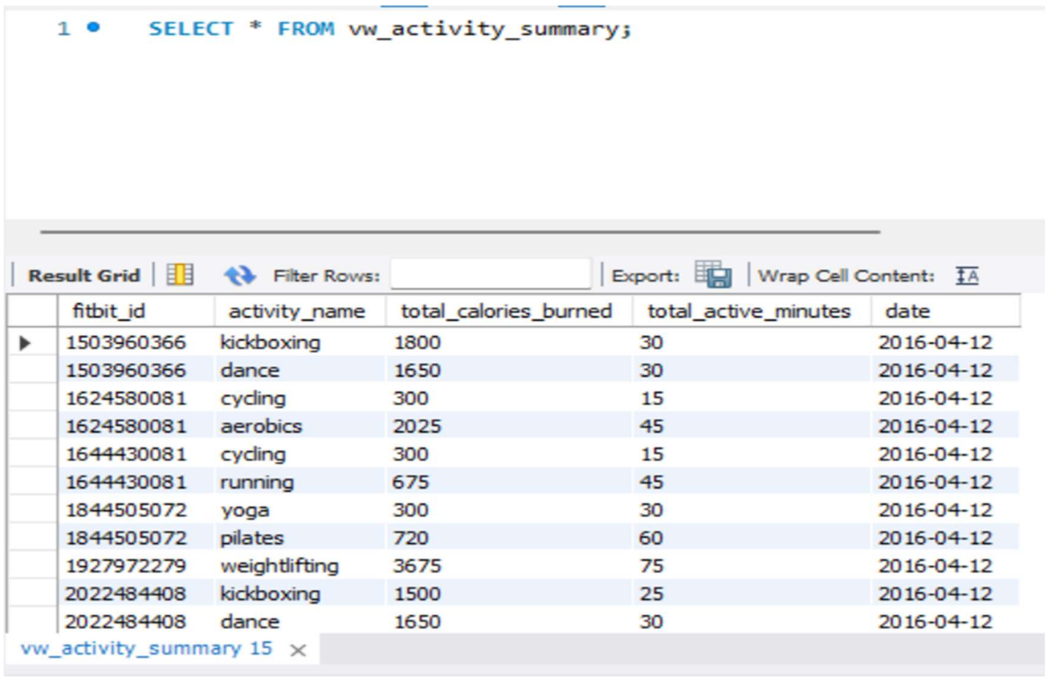


```
CREATE VIEW vw_activity_summary AS
SELECT
      al.fitbit_id,
      am.activity_name,
      SUM(al.minutes * am.calories_burned_per_minute) AS total_calories_burned,
      SUM(al.minutes) AS total_active_minutes,
      DATE(al.timestamp) AS `date`
FROM (SELECT * FROM activity_log_daily
       WHERE fitbit_id IN (SELECT DISTINCT device_id from steps_mins WHERE steps > 0)
       )  AS al
INNER JOIN activity_master AS am ON al.activity_id = am.activity_id AND al.intensity = am.intensity
GROUP BY al.fitbit_id, am.activity_name, DATE(al.timestamp)
```

```
Output
Action Output
#  Time      Action                                                                    Message
1  17:14:36  CREATE VIEW vw_activity_summary AS SELECT  al.fitbit_id,    am.activit...  0 row(s) affected
```

Select Query:

*SELECT * FROM vw_activity_summary;*



```
SELECT * FROM vw_activity_summary;
```

fitbit_id	activity_name	total_calories_burned	total_active_minutes	date
1503960366	kickboxing	1800	30	2016-04-12
1503960366	dance	1650	30	2016-04-12
1624580081	cycling	300	15	2016-04-12
1624580081	aerobics	2025	45	2016-04-12
1644430081	cycling	300	15	2016-04-12
1644430081	running	675	45	2016-04-12
1844505072	yoga	300	30	2016-04-12
1844505072	pilates	720	60	2016-04-12
1927972279	weightlifting	3675	75	2016-04-12
2022484408	kickboxing	1500	25	2016-04-12
2022484408	dance	1650	30	2016-04-12

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