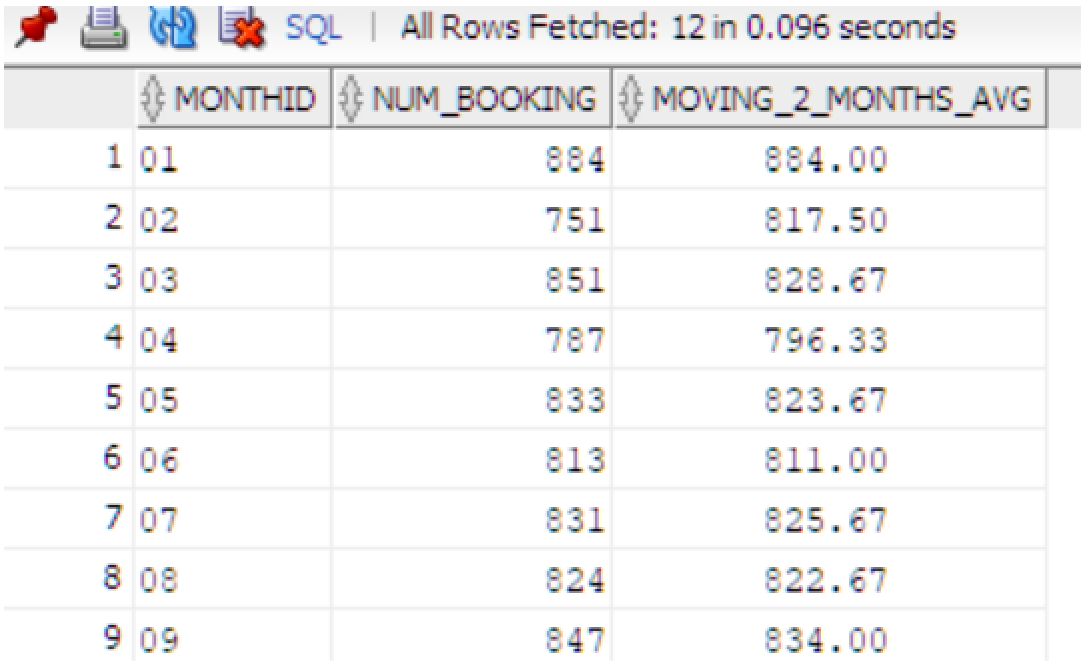
3.3. Report with moving and cumulative aggregates

The following is the SQL script for making two reports containing moving and cumulative aggregates and one fact measure.

REPORT 7: Produce one moving aggregate report that relates to the Booking information.

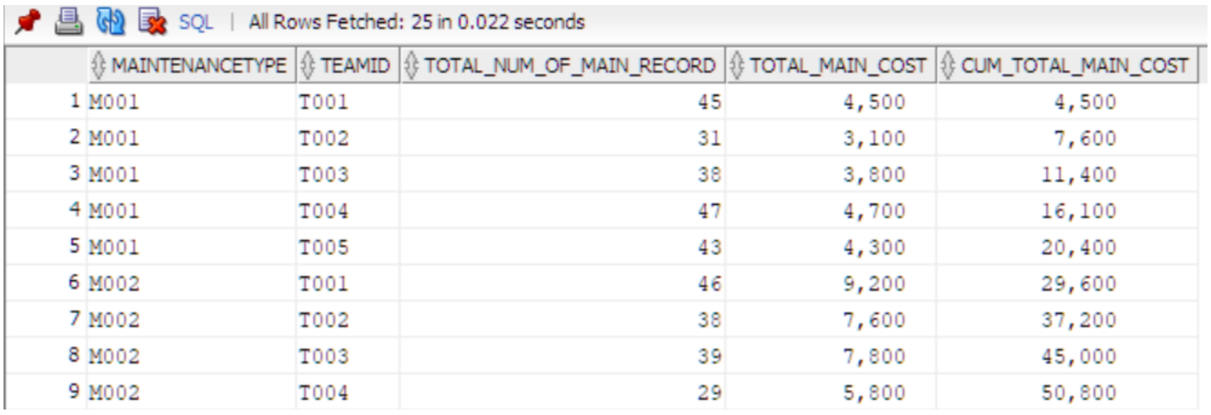


	MONTHID	NUM_BOOKING	MOVING_2_MONTHS_AVG
1	01	884	884.00
2	02	751	817.50
3	03	851	828.67
4	04	787	796.33
5	05	833	823.67
6	06	813	811.00
7	07	831	825.67
8	08	824	822.67
9	09	847	834.00

```
Select MONTHID, SUM(NUM_OF_BOOKING) AS Num_Booking,
 TO_CHAR(AVG(SUM(NUM_OF_BOOKING))
 OVER(ORDER BY MONTHID ROWS 2 PRECEDING),
 '9,999,999.99') AS Moving_2_Months_Avg
From bookingfact_V1
Group By MONTHID;
```

This query is valuable because we can use moving average (MA) to smooth out the fluctuation of the trend, and then there are two usages: 1) we can know the which seasons or months are the most and least booked; 2) Using MA to produce a forecasting model, so that we know what is the booking estimated number next month.

REPORT 8: Produce one cumulative aggregate report that relates to the maintenance information.



	MAINTENANCETYPE	TEAMID	TOTAL_NUM_OF_MAIN_RECORD	TOTAL_MAIN_COST	CUM_TOTAL_MAIN_COST
1	M001	T001	45	4,500	4,500
2	M001	T002	31	3,100	7,600
3	M001	T003	38	3,800	11,400
4	M001	T004	47	4,700	16,100
5	M001	T005	43	4,300	20,400
6	M002	T001	46	9,200	29,600
7	M002	T002	38	7,600	37,200
8	M002	T003	39	7,800	45,000
9	M002	T004	29	5,800	50,800

```
-- Display the cumulative total cost used based on maintenance type,
-- and another cumulative total used for each team.
SELECT maintenancetype, teamid,
SUM(num_of_main_record) AS total_num_of_main_record,
to_char(SUM(main_cost), '9,999,999,999') AS total_main_cost,
TO_CHAR (SUM(SUM(main_cost)) OVER
(ORDER BY maintenancetype, teamid
ROWS UNBOUNDED PRECEDING), '9,999,999,999') AS cum_total_main_cost
FROM maintenancefact_v1
GROUP BY maintenancetype, teamid;
```

This query is valuable because we can use cumulative total cost to estimate total expenditures from all team cumulatively. This is a evidence to convince the top management that the project is investable.