Experiment no:02

Aim: Implementation of all dimension tables and fact table based on experiment 1 case study.

Software used: MySQL

Theory:

- **Problem definition**

  Different type of data is collected all over India. This data warehouse is useful to analyse and extract data that is required in climate studies. The objective is to analyse the regions on the basis of rainfall, temperature, pressure and wind speed.

- **Fact table details**

Fact_Table
Area_key
Time_key
Index_key
temp

- **Dimension table details**

Area Dimension	Area_key	City	State	Country		
Index Dimension	Index_key	Uv_index	Heat_index	Humidity	Pressure	Windspeed
Time Dimension	Time_key	Date	Month	Quarter	Year	

- Dimensions:

1. **Area Dimension**
   - Area_key – An unique id identifying any particular area
   - City – The name of the city
   - State – Name of the state associated with the respective city.

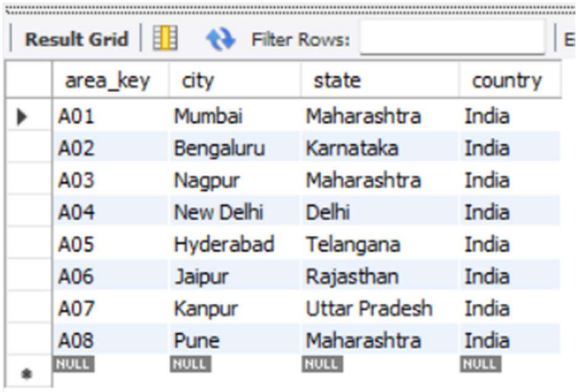
- Country – Name of the country associated with the respective state (India)

2. Time Dimension
   - Time_Key – It mentions the date & time in which data is recorded
   - Month – It Specifies the month of which the data belongs to.
   - Year- Specifies the year in which data belongs to
   - Quarter – 3 months make 1 quarter
     a. Q1- Jan-March
     b. Q2- Apr-June
     c. Q3- Jul-Sept
     d. Q4- Oct-Dec

3. **Index Dimension**
   - Index_key : It specifies the index key which it belongs to
   - UV_index : Specifies the UV data ranging from 0 to 9
   - Heat_index : Specifies the heat ranging from 10-50
   - Humidity: Specifies the humidity ranging from 10-100
   - Pressure: Specifies the pressure ranging from 900-1100
   - Windspeed : Specifies the windspeed ranging from 0-20

- **Screenshots of data populated in every dimension table and fact table.(at least 20 entries in each table)**

Area Dimension:



area_key	city	state	country
A01	Mumbai	Maharashtra	India
A02	Bengaluru	Karnataka	India
A03	Nagpur	Maharashtra	India
A04	New Delhi	Delhi	India
A05	Hyderabad	Telangana	India
A06	Jaipur	Rajasthan	India
A07	Kanpur	Uttar Pradesh	India
A08	Pune	Maharashtra	India
NULL	NULL	NULL	NULL

Time Dimension:

Result Grid | Filter Rows: | Ed

time_key	date	month	quarter	year
T01	1	January	Q1	2020
T02	1	February	Q1	2020
T03	1	March	Q1	2020
T04	1	April	Q2	2020
T05	1	May	Q2	2020
T06	1	June	Q2	2020
T07	1	July	Q3	2020
T08	1	August	Q3	2020
T09	1	September	Q3	2020
T10	1	October	Q4	2020
T11	1	November	Q4	2020
T12	1	December	Q4	2020
NULL	NULL	NULL	NULL	NULL

Indexes Dimension

index_key	uv_index	heat_index	humidity	pressure	windspeed
BEN1	1	19	83	1016	21
BEN2	1	28	66	1007	20
BEN3	1	23	79	1012	21
BEN4	1	20	91	1012	9
BOM1	7	28	42	1018	11
BOM2	8	34	63	1011	7
BOM3	6	26	76	1004	9
BOM4	6	32	82	1011	14
DEL1	1	20	30	1020	6
DEL2	1	29	16	1006	11
DEL3	1	40	24	992	19
DEL4	1	30	70	1006	11
HYD1	1	20	83	1016	15
HYD2	1	34	38	1003	21
HYD3	1	26	82	1007	26
HYD4	1	25	84	1011	11
JAI1	1	19	37	1016	12
JAI2	1	36	15	1001	8
JAI3	1	35	68	1000	8
JAI4	1	18	50	1016	14
KAN1	1	17	46	1020	7
KAN2	1	28	12	1004	15
KAN3	1	40	26	992	15
KAN4	1	27	89	1007	7
NAG1	1	22	30	1013	13
NAG2	1	40	16	1000	11
NAG3	1	29	89	1000	12
NAG4	1	23	58	1014	6
PUN1	1	23	44	1014	6
PUN2	1	27	36	1007	19
PUN3	1	24	90	1007	17
PUN4	1	25	87	1010	8

Fact Table:

area_key	time_key	index_key	temp
A01	T01	BOM1	28
A01	T04	BOM2	30
A01	T07	BOM3	24
A01	T10	BOM4	28
A02	T02	BEN1	19
A02	T05	BEN2	26
A02	T08	BEN3	21
A02	T11	BEN4	20
A03	T03	NAG1	22
A03	T06	NAG2	40
A03	T09	NAG3	26
A03	T12	NAG4	21
A04	T01	DEL1	20
A04	T04	DEL2	32
A04	T07	DEL3	39
A04	T10	DEL4	28
A05	T02	HYD1	20
A05	T05	HYD2	33
A05	T08	HYD3	24
A05	T11	HYD4	23
A06	T03	JAI1	17
A06	T06	JAI2	37
A06	T09	JAI3	30
A06	T12	JAI4	18
A07	T01	KAN1	17
A07	T04	KAN2	30
A07	T07	KAN3	39
A07	T10	KAN4	25
A08	T02	PUN1	22
A08	T05	PUN2	27
A08	T08	PUN3	21
A08	T11	PUN4	22

Conclusion: Thus we have successfully implemented the fact table and dimension table related to the case study mention in the first experiment

SIGN AND REMARK:

DATE:28/09/22

R1 (3 Marks)	R2 (3 Marks)	R (3 Marks)	R4 (3 Mark)	R5 (3 Mark)	Total (15 Marks)	Signature