Tutorial 8
Simple OLAP

We are going to use Robcor's Aircraft CHARTER data warehouse in this exercise. If you have your Robcor's Data Warehouse in your account which you have created during the Robcor Case study, you can use those tables to do the following exercise.

Alternatively, you can use the CHARTER data warehousing in the `dw` account. In this case, the tables that are relevant to the Robcor's CHARTER data warehouse are: `dw.charter_fact`, `dw.time`, `dw.pilot`, and `dw.model`.

A. Explore the data warehouse

1. Describe the structure of the three dimension tables. What are the attributes of each of the dimension tables?

2. Describe the structure of the fact table – what attributes does it have?

3. Display the contents of each of the dimension tables; some of the dimension tables are not that big.

4. Display the contents of the fact table.

B. Simple aggregate exercises using GROUP BY

1. What is the total hours flown by each pilot?

2. Display the total hours flown by each pilot in a descending order.

3. What is the total hours flown by each category of pilot license?

4. What is the total revenue generated by each pilot? Sort the results based on the Pilot ID

5. What is the total fuel consumption of the aircrafts manufactured by each manufacturer?

6. What is the total revenue generated in each year?

C. More complex aggregate exercises using CUBE and ROLLUP

The OLAP queries you need to implement are the following:

1. What is the total fuel used from Oct to Dec 1995 by commercial pilots and airplane model C-90A. Sort the results by the month. How many rows of records do you get?

2. Using **cube**, what is the total fuel used from Oct to Dec 1995 by commercial pilots and airplane model C-90A. Sort the results by the month. How many rows of records do you get?

3. Redo question C.2 using Grouping. Notes that "1" and "0" in the TIME, PILOT, and MODEL indicate that they are aggregate values and real values respectively.

4. As like question C.3 above, but instead of using "0" and "1", it displays "All Periods", "All Pilots" and "All Models" instead. (Hints: Use DECODE).

5. Following the results in question C.4, since there is only one aircraft model in the query results (e.g. C-90A), it seems that the "All Models" are redundant. Now, we want to remove them from the report, as there is no point displaying "All Models" when there is only one model (Hints: Use Partial CUBE).

6. Using **rollup** with **decode**, what is the total fuel used from Oct to Dec 1995 by commercial pilots and airplane model C-90A. Sort the results by the month. How many rows of records do you get?

7. Compare the results in C.2 and C.6. What is the difference?

8. Modify C.6 to use Partial Roll up (exclude "All Models" from the rollup).

THE END