Oracle SQL Tips and Tricks for IR Analysis and Reporting

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SQL Is a Powerful Tool for IR

1. Extract data from a database.
2. Format data in many ways.
3. Export data to flat files, such as excel, text, html files.
4. Analyze data.
5. Generate reports.
Today’s Topics

1. How to rearrange data from a query - data transposition.
2. How to format date by using format masks.
3. Operations on date – date arithmetic.
4. Oracle built-in date functions.
5. How to calculate sub-totals and handle null values.
Demos on Data Transposition

1. Step to pivot a query.
2. Oracle decode function.
3. Oracle ‘case’ and ‘case when’ statement.
Summary on Data Transposition

1. Understand your problem – if not, you cannot solve the problem.
2. Three steps to pivot data from a query.
   1. Generate new variables.
   2. Take the original query as a sub-query.
   3. Put the two parts together.
3. Three ways to generate the new variable
   2. Using ‘Case’ statement.
Demo on Date–Related Issues

1. Common date masks for data formatting.
2. Common date operations.
3. Date Functions.
Summary on Date–Related Issues

1. Date is stored in seven parts internally.
2. Oracle provides very flexible masks for date format.
   1. CC/cc – century
   2. Yyyy/yy – 4 digits or 2 digits year
   3. Month/Mon – long or short month name
   4. Mm – digit month
   5. Day/dy – week days
   6. D, dd, ddd – digit day in week, month and year
   7. mm/ss – minute and second
3. There are special rules for date operation.
4. Oracle provides many functions to help date operation.
5. Always refer to SQL manuals.
6. SQL Reference
   
   http://download-east.oracle.com/docs/cd/B19306_01/server.102/b14200.pdf
Demo on Subtotal and Null Handling

1. Using ‘rollup’ to calculate subtotal.
2. Using ‘cube’ to calculate crosstab.
3. Using ‘grouping’ function to handle null values.
4. Using ‘nvl’ function to handle null values.
Summary on Data Subtotal and Null Handling

1. It is common to calculate sub-total and grant-total.
2. Use ‘rollup’ for sub-total and grant-total.
3. Use cube for crosstab.
4. Two approaches to handle null values.
   1. Use ‘grouping’.
   2. Use ‘nvl’.