

# Oracle SQL Tips and Tricks for IR Analysis and Reporting

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# SQL Is a Powerful Tool for IR

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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

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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

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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
  1. Using 'decode' function.
  2. Using 'Case' statement.
  3. Using 'Case When' statement.

# Demo on Date–Related Issues

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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.
- *SQL Reference*

[http://download-east.oracle.com/docs/cd/B19306\\_01/server.102/b14200.pdf](http://download-east.oracle.com/docs/cd/B19306_01/server.102/b14200.pdf)

# Demo on Subtotal and Null Handling

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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'.