A SIMPLE USE FOR SQL EXPRESSIONS

In Crystal Reports 2011

By: Rebecca Thompson, InfoSol

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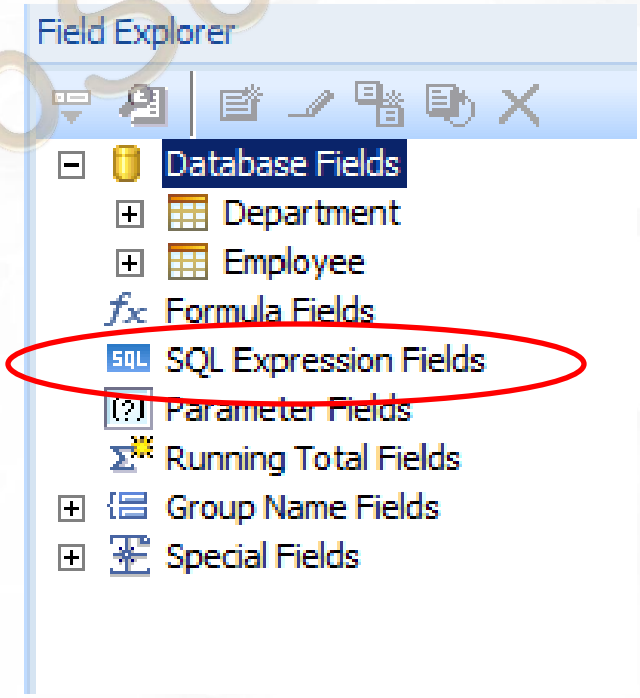
WHAT ARE SQL EXPRESSIONS?

1. **They are just like formula fields**
   - They appear in your Field Explorer to add to the report…..but how you write them is different….
2. **How do you write SQL Expressions?**
   - They are written in the SQL Query language (specific to the database you are using in the report.)



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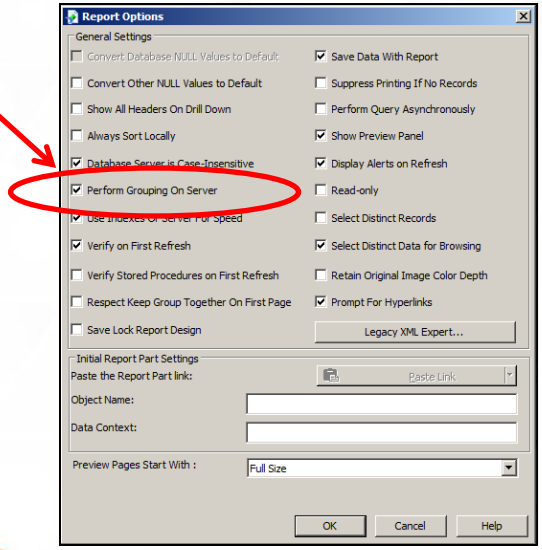
WHY USE SQL EXPRESSIONS?

- **Optimizes report performance! (Typically used for this…)**
  1. Processing of SQL Expressions are done on the database server instead of the local machine.
  2. Able to use ***database functions*** *(which are not available in the formula editor)*
- **When to use SQL Expressions to Speed Your Report up….**
  1. **Complicated Record Selection Formulas**
     - Instead of doing a record selection formula, change it into a SQL Expression and it will speed up your report immensely!
  2. **Speed up Processing of Summarized IF-THEN-ELSE Formulas.**
     - If you a trying to sum an IF-THEN-ELSE formula, trying changing it to a SQL Expression using CASE statements.
  3. **When Performing Grouping on the Server is Enabled.**
     - When Perform Grouping on Server is selected:
       - DO NOT:
         - Sort on formula fields
         - Group on formula fields
         - Total on a formula fields

Instead, change that sorting, grouping or totaling formula field to a SQL Expression!



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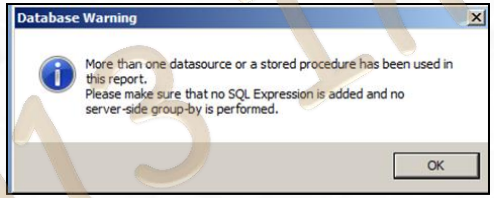
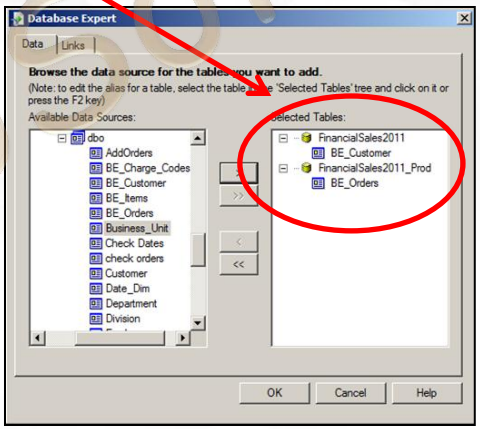
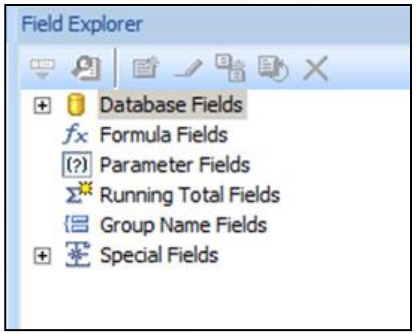
WHEN YOU *CANNOT* USE SQL EXPRESSIONS

- **Can't use if you are connecting to *more than 1 data* source in your report.**
  - After adding more than 1 data source in your report, it gives you this warning





  - The option to create a SQL Expression field is ***NOT*** even in the Field Explorer



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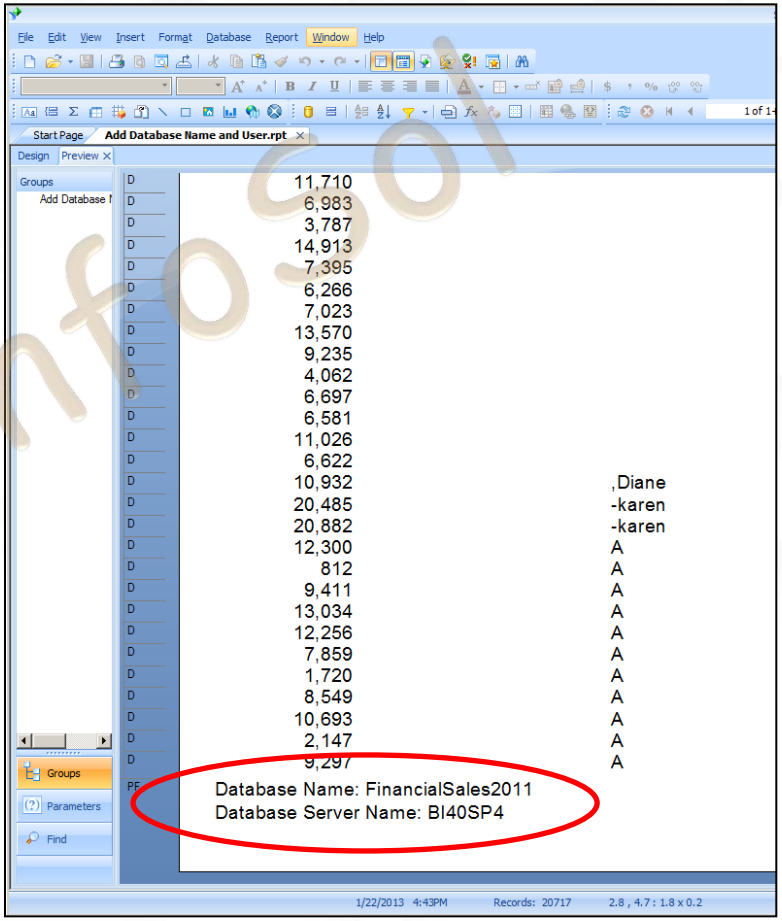
OTHER "SIMPLE" USES OF SQL EXPRESSIONS

- Using database functions!
  - ***What about using a SQL Expression in the footer of all your reports that states…..***
    - The ***database name:*** where the data is coming from
    - The ***database server***
  - ***Why???***
    - Great when you are reporting against lots of different databases!
    - Great for keeping track of the SDLC of a report. Is the report pointing against development, QA, or production?
    - Great for database upgrades….

****Note: Don't worry, you won't need to know, learn, or write any SQL for this exercise!!!***



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HOW TO CREATE A SQL EXPRESSION
TO GET DATABASE NAME AND DATABASE SERVER

Without writing a single line of SQL???!!!

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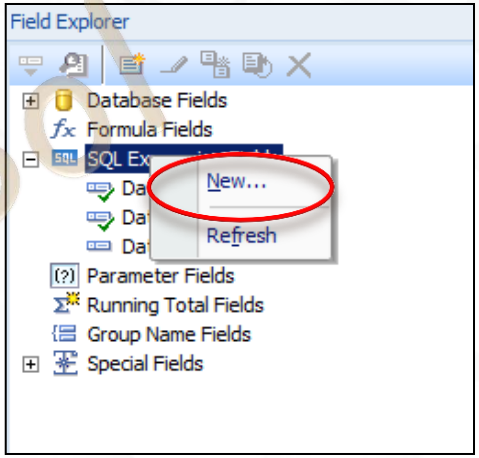
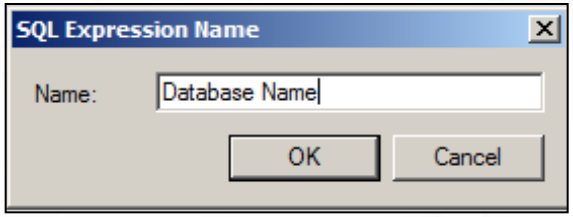
HOW TO WRITE A SQL EXPRESSION STEPS 1-2

1. Go to the Field Explorer and right-click on SQL Expressions and select NEW.



2. Give your SQL Expression a name, like ***Database Name***.
   + We will start will pulling out the name of the database the Employee Listing report (previously created) is using….



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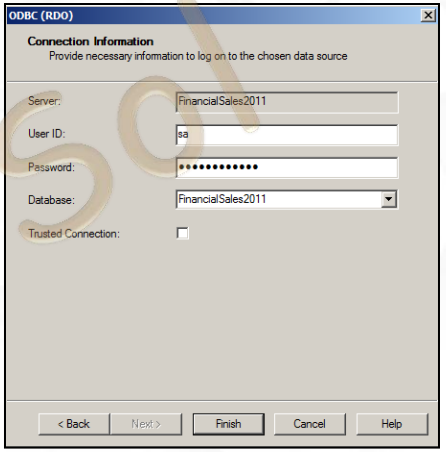
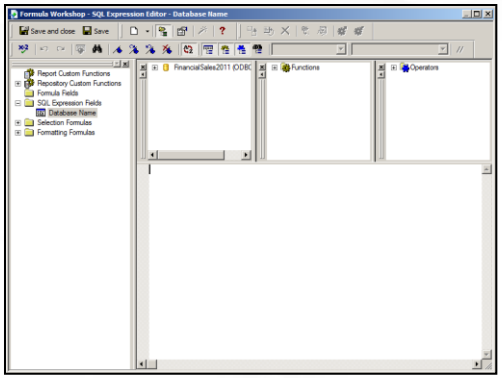
HOW TO WRITE A SQL EXPRESSION STEPS 3-4

3. If prompted, enter in your database connection information.
(i.e. username and password).



4. Next the Formula Workshop – SQL Expression Editor window should appear.
   - *Which looks very similar to the Formula Workshop Formula Field Editor window!*



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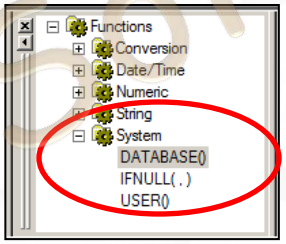
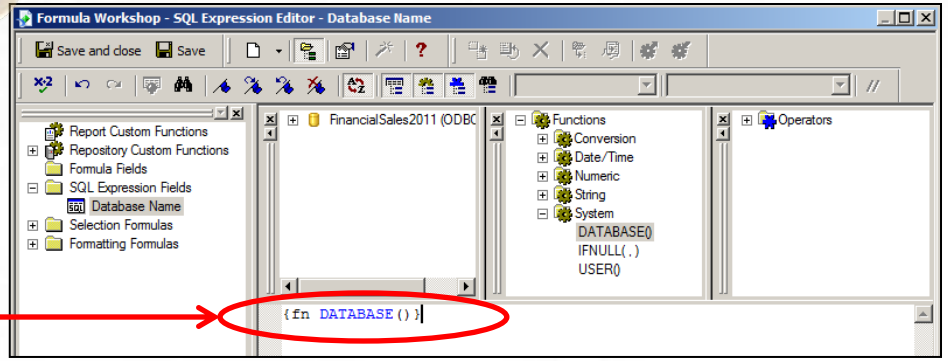
HOW TO WRITE A SQL EXPRESSION STEPS 5-6

5. In the middle of the Formula Workshop Window in the ***Functions*** box, click the ***plus sign next to System***….

   + *Notice that the functions listed here are SQL functions, not like the ones you see in the Formula Field Workshop window.*



6. The function we want to use here to get the name of the database is DATABASE(). So, double-click on DATABASE() and it will bring it into the formula window….



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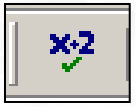
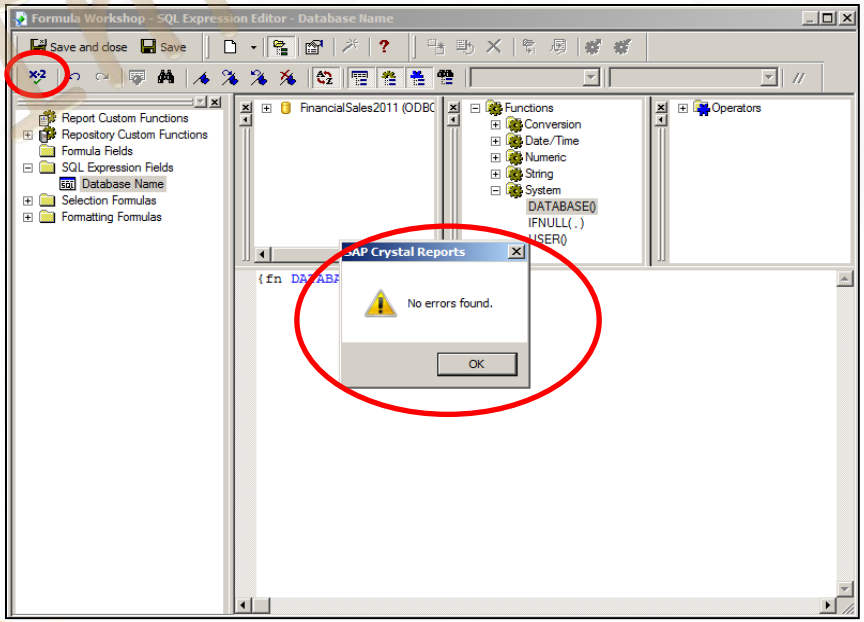
HOW TO WRITE A SQL EXPRESSION STEPS 7-8

7. Click the formula checker button in the upper left-hand corner to check your formula and you should get a “no errors found” message box.



8. Click OK to close the message box and then click on the Save and Close button to save and close this SQL Expression.



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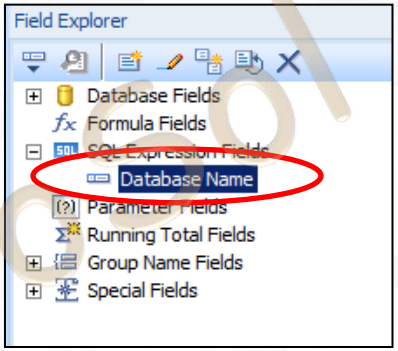
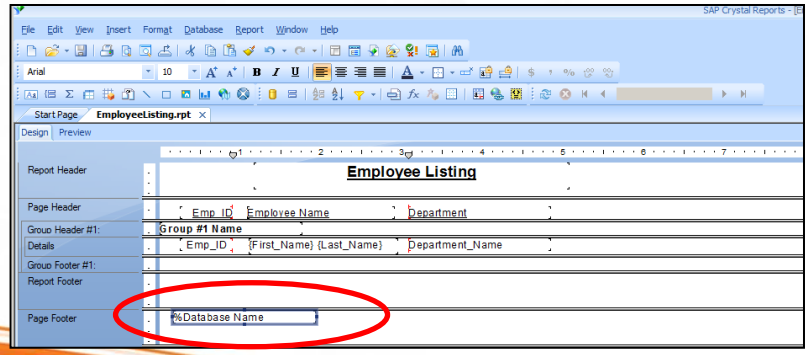
HOW TO WRITE A SQL EXPRESSION STEPS 9-10

9. Now your new SQL Expression called: Database Name should now appear under the SQL Expressions section in the Field Explorer….



10. Now it is a field we can drag and drop into the bottom left-hand corner of the Page Footer section of your report (you may need to switch to Design mode to do this…).



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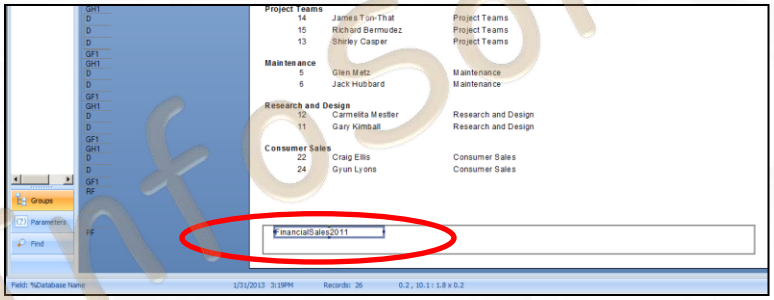
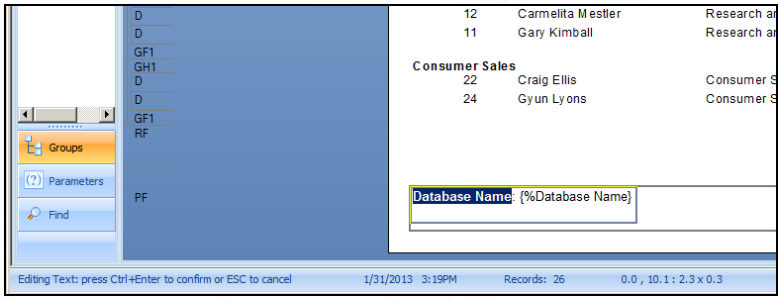
HOW TO WRITE A SQL EXPRESSION STEPS 11-12

11. Switch to Preview mode to see if the database name is displayed correctly…



12. You could now add a text field to the report with the label: Database Name and insert this field into that text field….



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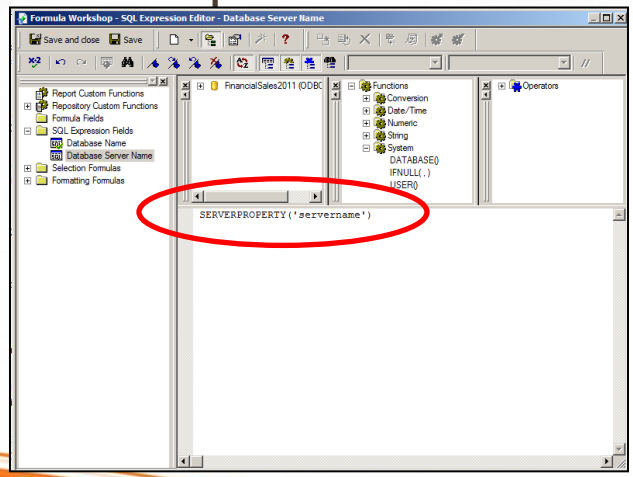
HOW TO WRITE A SQL EXPRESSION

To get the Database Server Name….

- In order to do the same thing and return the name of the server the database you report points to, you repeat the same steps above.
  - Except, when you get to steps 5 and 6, there is no built-in function to use in the Formula Workshop.
    - You would instead just type in the Transact-SQL statement: **SERVERPROPERTY('servername')**



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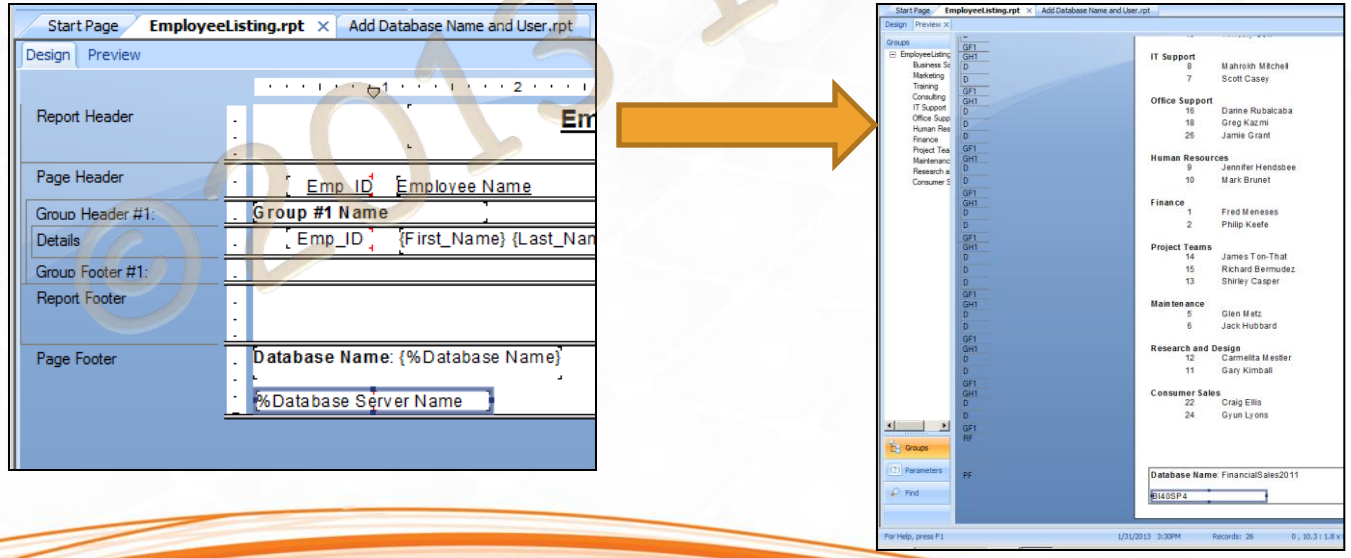
HOW TO WRITE A SQL EXPRESSION

To get the Database Server Name….

- Then, just drop that new SQL Expression field: Database Server Name onto the bottom left-hand corner of the Page Footer section right under the database name….and Preview the report….



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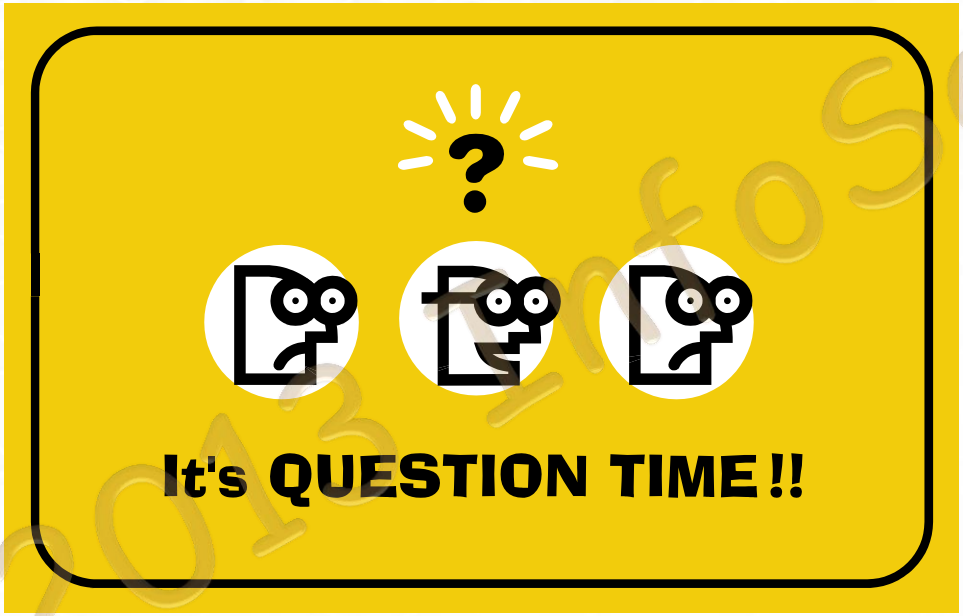
QUESTIONS?



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