

Toad for Data Analysts, Tips 'n' Tricks

or

Things Everyone Should Know about TDA

Just what is Toad for Data Analysts?

Toad is a brand at Quest. We have several tools that have been built explicitly for developers and administrators in the Oracle, DB2, SQL Server, and MySQL universe. After gaining the following of about 2 million users over the past decade we realized that more than a third of our users did not fall into the 'developer' or 'DBA' category. Toad had been adopted by a class of user that we had not planned for!

After realizing the number of business analysts, technical analysts, support analysts, and *insert-your-job-title-here* we had using our products, we decided to build a Toad just for them. This resulted in the development of Toad for Data Analysts which debuted in the summer of 2007. This tool is built from the ground up for someone who primarily needs a tool to get at the data in a database. Simply put, Toad for Data Analysts is a query tool for any/every database platform.

This document will go over the compelling features and use-cases. This should give you an idea of how you might be able to benefit from the tool. Please feel free to share this document with anyone in your organization who might also be able to benefit from Toad!

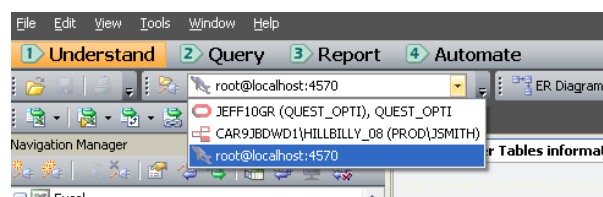
Getting Started

To use the tool you will need to have the following:

1. A flavor of Windows that supports the v3.5 .NET engine
2. The database drivers and/or ODBC drivers for the databases and data sources you want to query

After you start the tool and finish the obligatory wizard to setup the user interface to fit your needs, you'll need to define your database connections. You will use the 'Navigation Manager' to maintain and create your database connections.

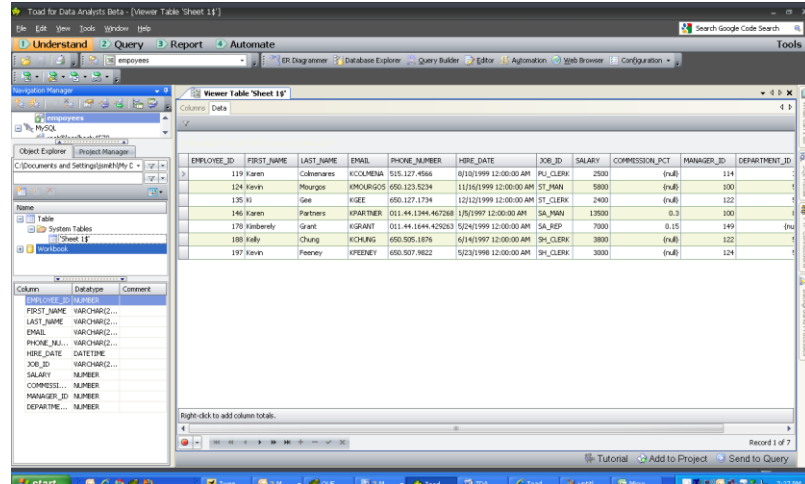
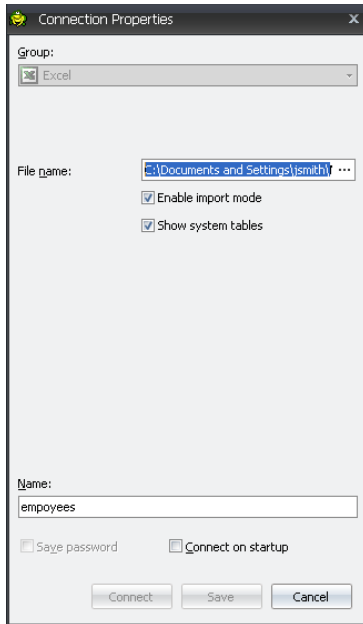
Once you have connected to one or more databases, you will use the 'Connections' toolbar to specify the *active* connection. This dictates what database connection will be used for any new windows or operations initiated in Toad.



My local instance of MySQL is the active connection here.

Special Note Regarding MS Excel Connections

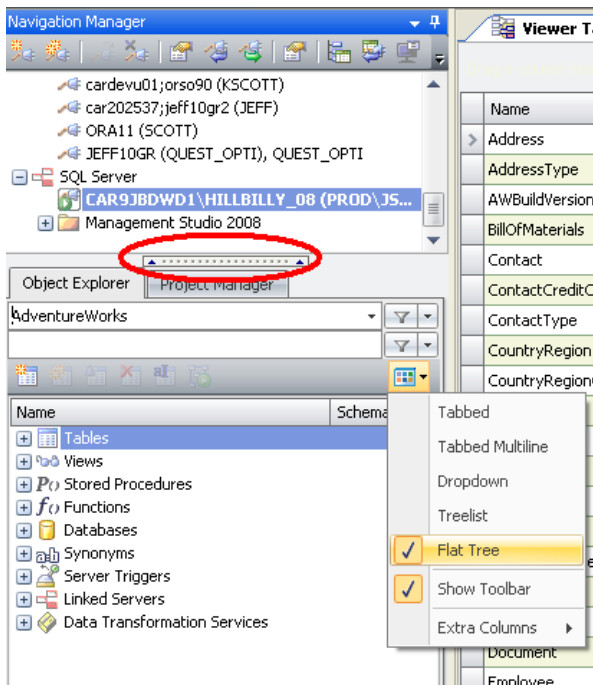
Yes! You can connect to an XLS or XLSX file and query it just like a database! When you connect to the spreadsheet bear in mind Toad prefers to see Named Regions in your spreadsheet. The named regions will show as a table in the Database Explorer. If you do not use named regions, have no fear! On the connection dialog, be sure to check the 'Show System Tables.'



Once connected, each workbook will display as a table in the Database Explorer.

Database Browser

The Database Browser allows you to navigate and interact with the contents of your database. You can easily drill down into a table or view for example and extract said data to a pivot table in MS Excel.



Tips & Tricks for the Browser

- Use the splitter control to 'hide' the navigation manager (circled in red)
- Investigate the different layouts; my personal favorite is the 'Flat Tree'.
- Filtering – tell Toad to hide certain schemas or certain object types based on names or other object properties. You can give these filters 'names' so you can easily switch between different sets of objects in your database.
- Mouse-right-click on an object to see all the Toad features available
- You can multi-select objects and right-click to fire an operation against more than one table

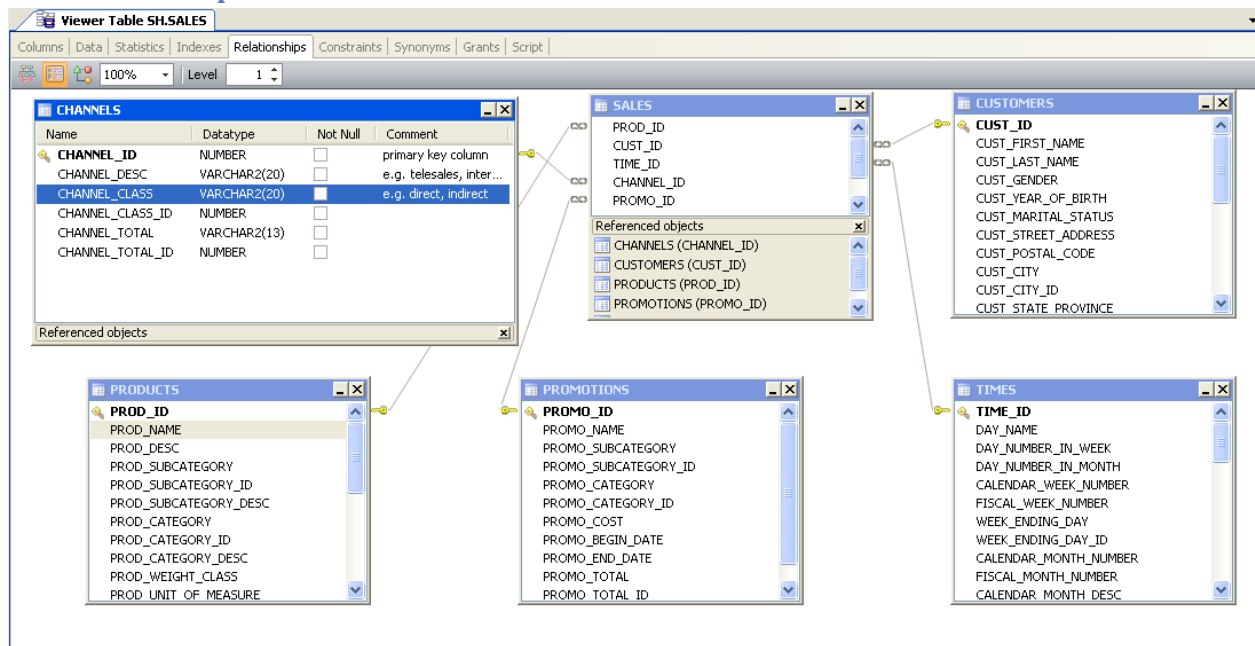
- Double-click on an object to open the 'Object Viewer'

Object Viewer

The Object Viewer shows all of the properties for the object selected in the Database Browser. The information and operations you will be able to access here will be directly impacted by the security privileges setup for the account you are using. Toad itself does not restrict you from making changes to the data or objects in the database!

Toad is available in a Read Only installation that prohibits changes to the database.

The Relationships Tab



The information shown in the Relationships tab is compiled based on the referential integrity defined in the database. Please note that not all database applications use foreign keys in the database to control tables. In the case that your application has the business rules defined outside the database, this tab will be blank. In this case, you can manually build your own diagrams in the 'ER Diagram' window.

The Data Tab

Viewer Table SH.CUSTOMERS								
Columns	Data	Statistics	Indexes	Relationships	Constraints	Synonyms	Grants	Script
CUST_ID *	CUST_FIRST_NAME *	CUST_LAST_NAME *	CUST_GENDER *	CUST_YEAR_OF_BIRTH *	CUST_MARITAL_STATUS	CUST_STREET_ADDRESS *	CUST_POSTAL_CODE *	
>	49671	Abigail	Ruddy	M	1976	married	27 North Sagadahoc Boulevard	60332
	3228	Abigail	Ruddy	M	1964	{null}	37 West Geneva Street	55406
	6783	Abigail	Ruddy	M	1942	single	47 Toa Alta Road	34077
	10338	Abigail	Ruddy	M	1977	married	47 South Kanabec Road	72996
	13894	Abigail	Ruddy	M	1949	{null}	57 North 3rd Drive	67644
	17449	Abigail	Ruddy	M	1950	single	67 East McIntosh Avenue	83786
	21005	Abigail	Ruddy	M	1946	married	77 Bradford Avenue	52773
	24561	Abigail	Ruddy	M	1978	{null}	77 North Packard Avenue	37400
	28116	Abigail	Ruddy	M	1949	single	87 West Coshocton Avenue	71349
	31671	Abigail	Ruddy	M	1951	married	97 Sagadahoc Avenue	55056
	35227	Abigail	Ruddy	M	1948	{null}	97 South Geneva Avenue	81402
	36117	Abner	Everett	M	1954	{null}	107 Covington Avenue	80841
	39672	Abner	Everett	M	1975	married	107 North Saguache Avenue	34216
	43228	Abner	Everett	M	1957	married	117 West Gloucester Avenue	72059
	25470	Abner	Everett	M	1966	single	17 West Mckenzie Court	84773
	47006	Abner	Everett	M	1985	{null}	27 East Braxton Boulevard	55787
	50561	Abner	Everett	M	1960	married	27 South Page Boulevard	55646
	4117	Abner	Everett	M	1972	single	37 North Covington Street	91906

The Data Tab will retrieve the first 1,000 records for each object you select in the Database Browser. You can retrieve more records as you need them by scrolling or paging down the grid, or you can mouse-right-click in the grid and choose 'Read All Rows'.

Important Tip: Toad uses the Auto Commit feature to ensure browsing tables does not create excessive locks in your database.

The data grids in Toad can be manipulated to hide information you do not need to see. Do you really need to see all 255 columns or all million rows in a table? If you are trying to create a report of customers and their addresses, wouldn't you prefer to click your way through it rather than manually write a query in Toad editor? Whenever possible, use the data grid to build your reports! This will save you time and resources in the database.

Manipulating the Data Grids

'Fixing' columns – you can fix one or more columns so that when you scroll left-right-up-down, the columns of interest remain 'fixed.' To do this, mouse-right-click on the column header of interest and

choose 'Fix Column -> Left|Right'.

CUST_FIRST_NAME *	CUST_LAST_NAME *	CUST_STATE_PROVINCE_ID *	COUNTRY_ID *	CUST_MAIN_PHONE_NUMBER *	CUST_STATE_PROVINCE_ID *	CUST_STATE_PROVINCE *
Abigail			52610	52770	519-236-6123	G: 13 Gelderland
Abigail			52683	52770	327-194-5008	G: 13 Noord-Holland
Abigail			52646	52770	288-613-9676	G: 13 Limburg
Abigail			52771	52770	222-269-1259	G: 13 Zuid-Holland
Abigail			52734	52775	675-133-2226	G: 13 Santa Catarina
Abigail			52543	52782	183-207-2933	G: 13 Aichi
Abigail			52735	52775	129-379-7148	G: 13 Sao Paulo
Abigail			52634	52782	689-236-7611	G: 13 Kanagawa
Abigail			52683	52770	208-194-6025	G: 13 Noord-Holland
Abigail			52590	52789	391-613-8000	G: 13 England - Greater Manct
Abigail			52599	52770	587-269-1680	G: 13 Flevopolder
Abner			52593	52789	258-692-7934	K: 25 England - West Midlands
Abner			52561	52776	167-248-1619	K: 25 Bayern
Abner	Everett		52567	52790	620-711-8237	K: 25 CA
Abner	Everett		52559	52776	103-711-9009	K: 25 Baden-Wuerttemberg
Abner	Everett		52567	52790	454-716-5260	K: 25 CA
Abner	Everett		52684	52776	526-349-7669	K: 25 Nordrhein-Westfalen
Abner	Everett		52645	52770	155-304-1040	K: 25 Nordrhein-Westfalen

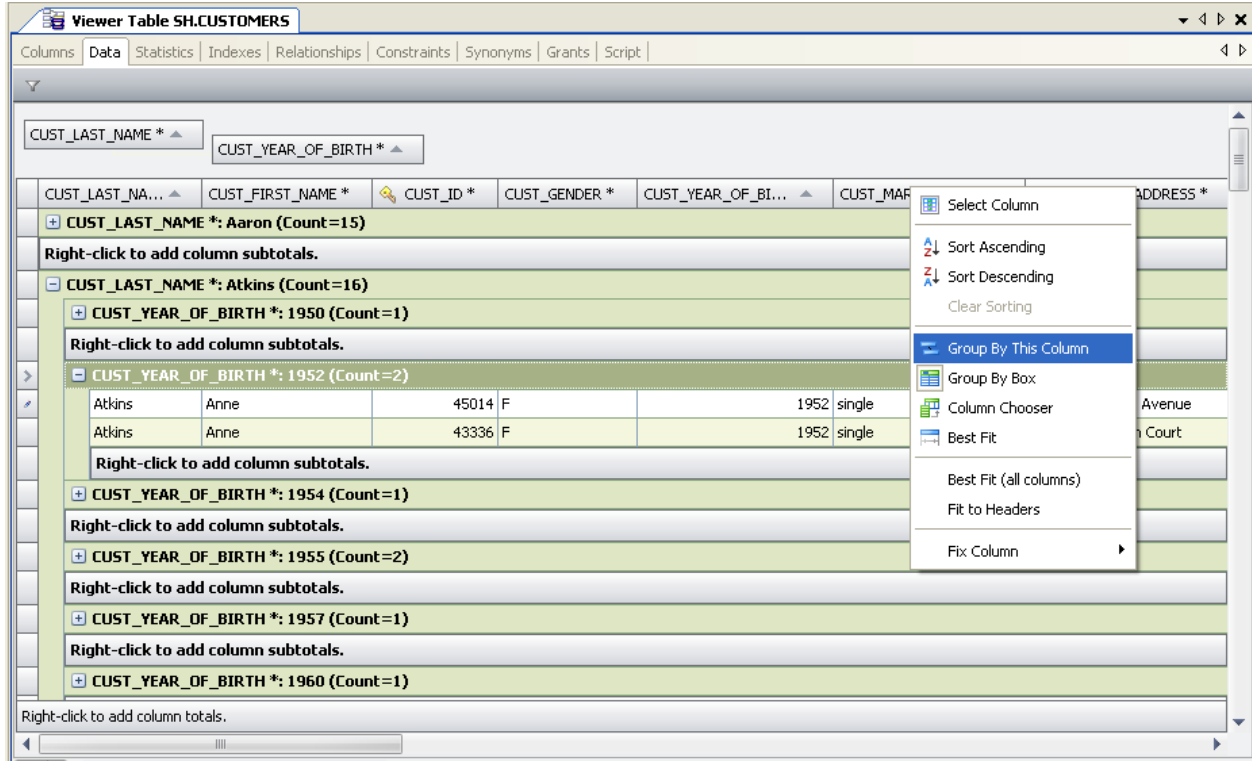
As I scroll left and right, only the non-fixed columns move.

'Hiding' columns – you can turn columns off. Doing this not only makes the data easier to read, but when you do a report or export, these columns are left off. Note you can also drag the columns around in the order of your choice, which also affects the reports and exports. To hide a column, mouse-right-click on any column header and choose 'Column Chooser.'

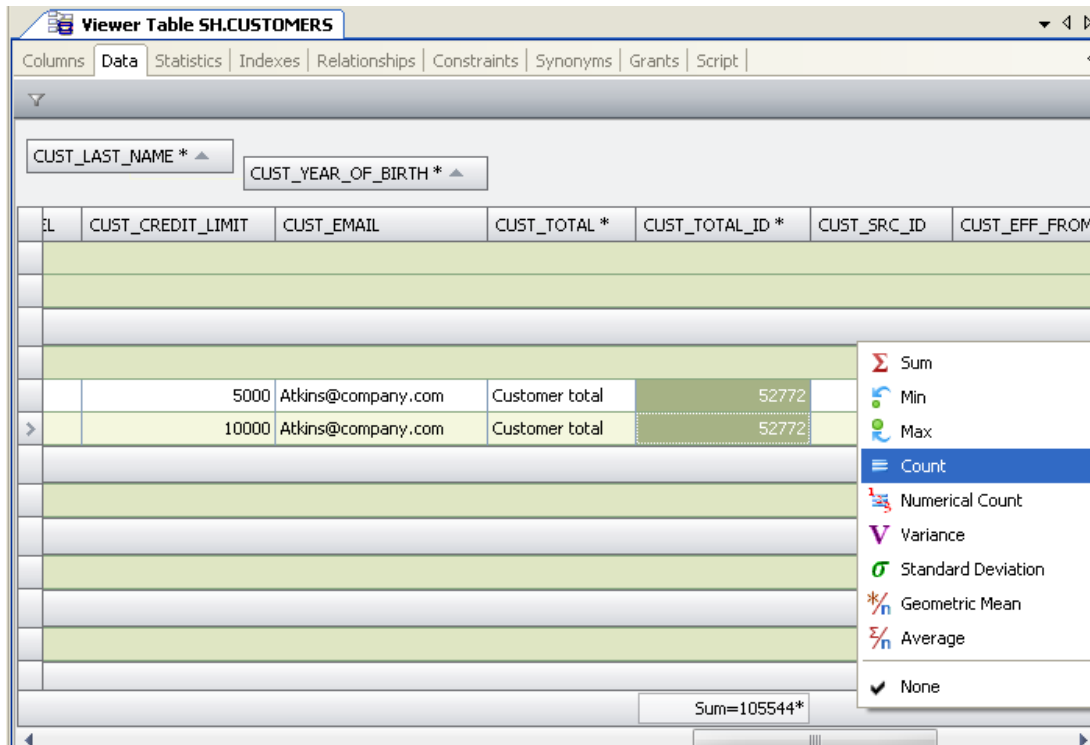
CUST_FIRST_NAME *	CUST_LAST_NAME *	CUST_MAIN_PHONE_NUMBER *	CUST_CREDIT_LIMIT	CUST_EMAIL	CUST_STATE_PROVINCE *	CUST_STATE_PROVINCE *
Abigail	Ruddy	519-236-6123	1500	Ruddy@company.com	Custo	Gelderland
Abigail	Ruddy	327-194-5008	7000	Ruddy@company.com	Custo	Noord-Holland
Abigail	Ruddy	288-613-9676	11000	Ruddy@company.com	Custo	Limburg
Abigail	Ruddy	222-269-1259	1500	Ruddy@company.com	Custo	Zuid-Holland
Abigail	Ruddy	675-133-2226	9000	Ruddy@company.com	Custo	Santa Catarina
Abigail	Ruddy	183-207-2933	9000	Ruddy@company.com	Custo	Aichi
Abigail	Ruddy	129-379-7148	3000	Ruddy@company.com	Custo	Sao Paulo
Abigail	Ruddy	689-236-7611	7000	Ruddy@company.com	Custo	Kanagawa
Abigail	Ruddy	208-194-6025	11000	Ruddy@company.com	Custo	Noord-Holland
Abigail	Ruddy	391-613-8000	1500	Ruddy@company.com	Custo	England - Greater Manct
Abigail	Ruddy	587-269-1680	9000	Ruddy@company.com	Custo	Flevopolder
Abner	Everett	258-692-7934	15000	Ruddy@company.com	Custo	England - West Midlands
Abner	Everett	167-248-1619	11000	Ruddy@company.com	Custo	Bayern
Abner	Everett	620-711-8237	7000	Ruddy@company.com	Custo	CA
Abner	Everett	103-711-9009	15000	Ruddy@company.com	Custo	Baden-Wuerttemberg
Abner	Everett	454-716-5260	11000	Ruddy@company.com	Custo	CA

As you drag columns to the 'Customization' box, they will be removed from the grid. Simply drag them back to the grid column header space to undo the 'hide' action.

'Grouping' Columns – You can group the data by specific values directly in the grid. To do this, mouse-right-click on the column header of choice and select 'Group By This Column.' You may also want to activate the 'Group By Box' to easier see what is being grouped as you can have multiple levels.



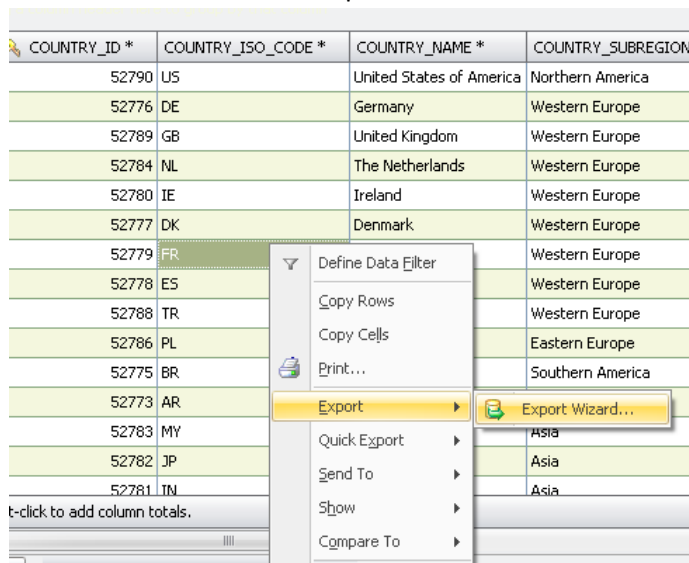
You can also add column totals by right-clicking in the gutter space for each column.



Export Formats Available

When you want to send the data in a grid to a file, you can use the Export Wizard. In any data grid just mouse-right-click and choose:

- Formats other than Excel: Export Wizard



- For any/all Excel exports: Quick Export

COUNTRY_ID *	COUNTRY_ISO_CODE *	COUNTRY_NAME *	COUNTRY_SUBREGION *	COUNTRY_SUBREGION
52790	US	United States of America	Northern America	
52776	DE	Germany	Western Europe	
52789	GB	United Kingdom	Western Europe	
52784		Netherlands	Western Europe	
52780		land	Western Europe	
52777		nmark	Western Europe	
52779		ance	Western Europe	
52778		ain	Western Europe	
52788		key	Western Europe	
52786				
52775				
52773				
52783				
52782				
52781			Asia	

The Export Wizard will allow you to build any of the following:

1. Access Database File
2. Delimited Text (you pick the delimiter)
3. XML
4. HTML
5. SQL Script (Insert Statements)
6. Create as New Table\View (will build a new object in the database)

The Quick Export flyouts allow you to quickly build new spreadsheets or append data to existing workbooks. You can also use it to help you with your pivot tables.

Some Tips/Tricks for Excel Exports

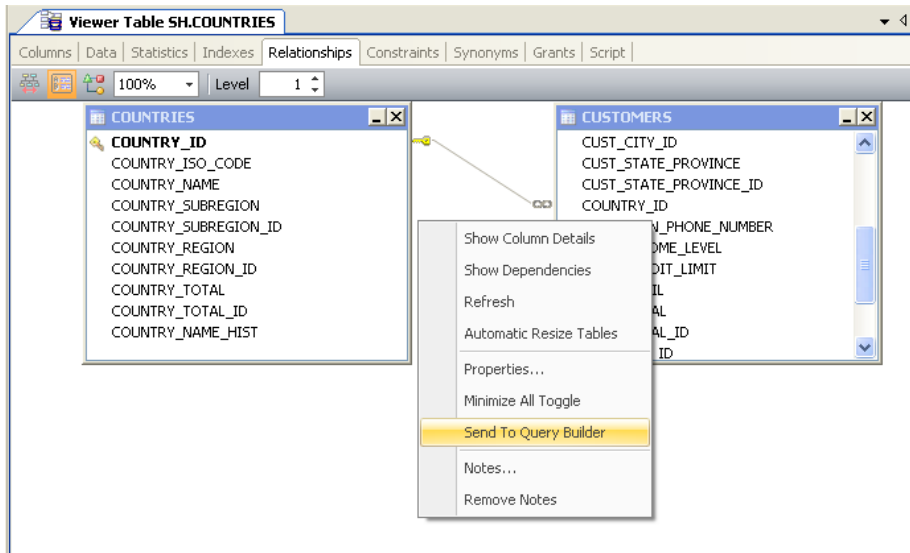
1. Use the 'Instance' options to append data to an existing workbook. Place your cursor in the cell to let Toad know where to put the data if you are using the '...At Active Cell' option
2. Use the 'Linked Query' options to build a spreadsheet with the query embedded into the spreadsheet. When you open the report, you'll have the option refreshing the data 'live' from the database.
3. If you need just a quick-n-dirty pivot, do that directly in the Toad editor.

My Data Isn't All in One Table/View, Now What Do I Do?

If you need to pull data from multiple objects to build your report or do your analysis, you will need to build a query. There are several ways to do this in Toad. First, the *easy* way.

The Query Builder

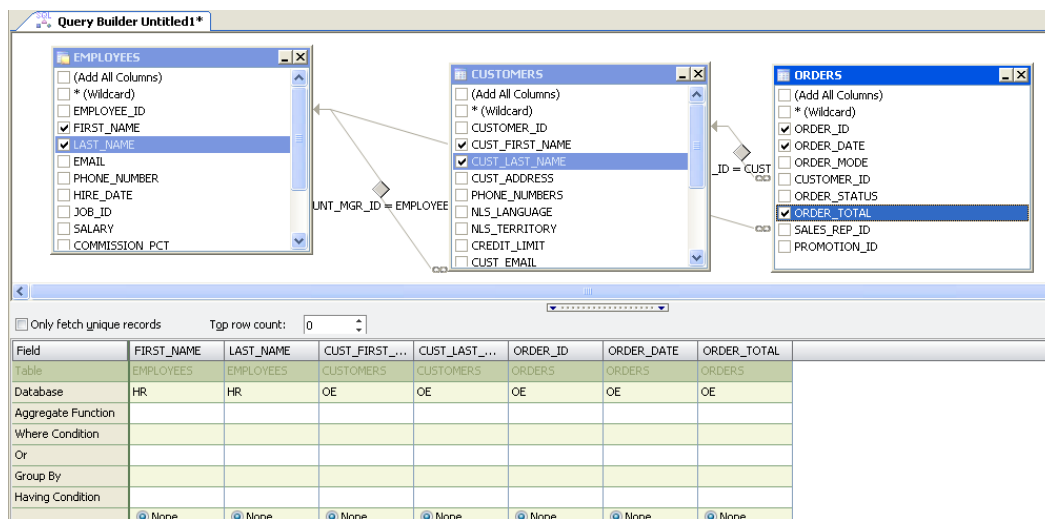
From the 'Relationships Tab', if you were to mouse-right-click, you can automatically build a SQL SELECT statement to pull data from all the related tables.



Send to Query Builder will auto-load your tables and build your joins.

If your query or report needs to pull data from non-related objects in terms of referential integrity, you can still use the Query Builder. You will just need to manually add the objects and draw the relationships manually.

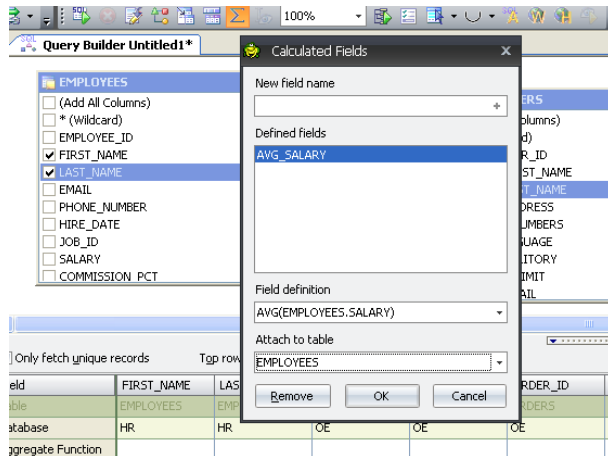
If you have ever used MS Access to build a report, then the Query Builder should be familiar to you. If not, you will learn to use it very quickly!



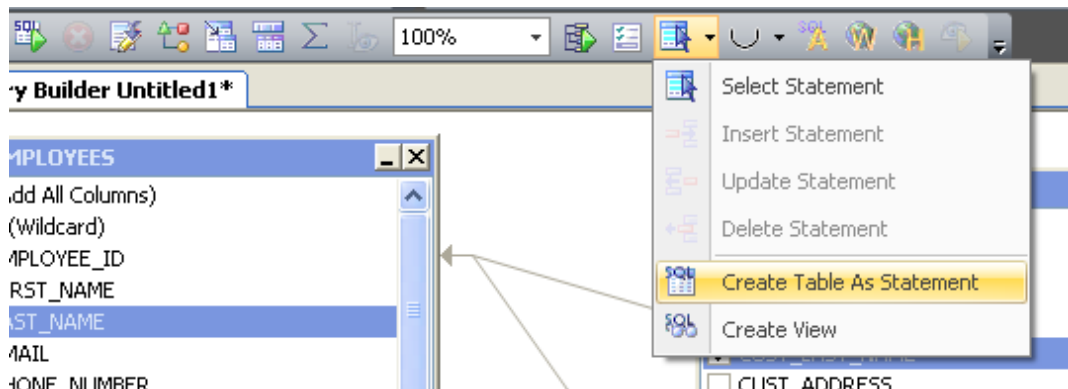
Some Tips/Tricks

- Checking an object column will add it to the query. From there you can set filtering properties in the field grid below.

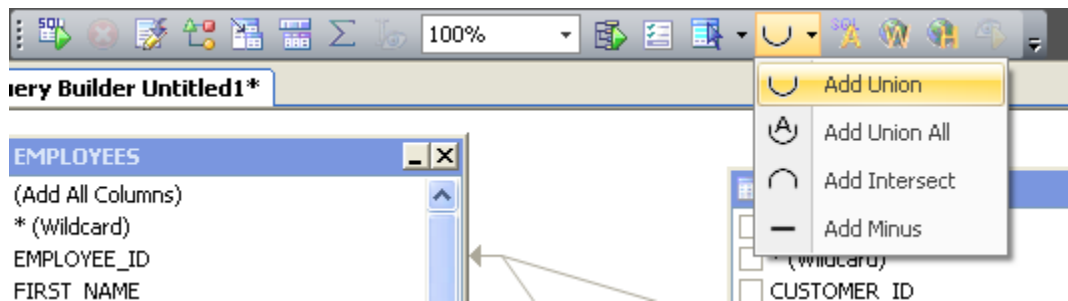
- You can add a 'Calculated Field', for example the AVG of a numerical value, or the UPPER of a text value by clicking on the cool little Greek letter in the toolbar ☺



- You can build SELECT, INSERT, UPDATE, DELETE, INSERT AS SELECT, or CREATE or REPLACE VIEW commands with the Query Builder

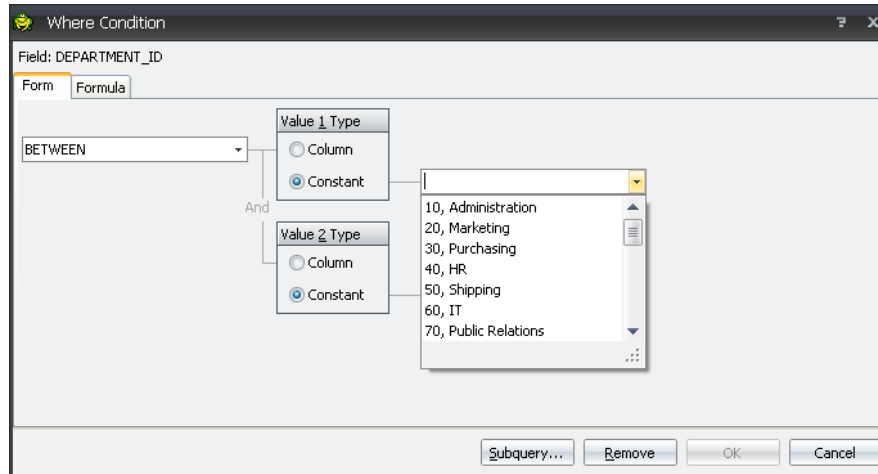


- You can include UNION, INTERSECT, & MINUS clauses



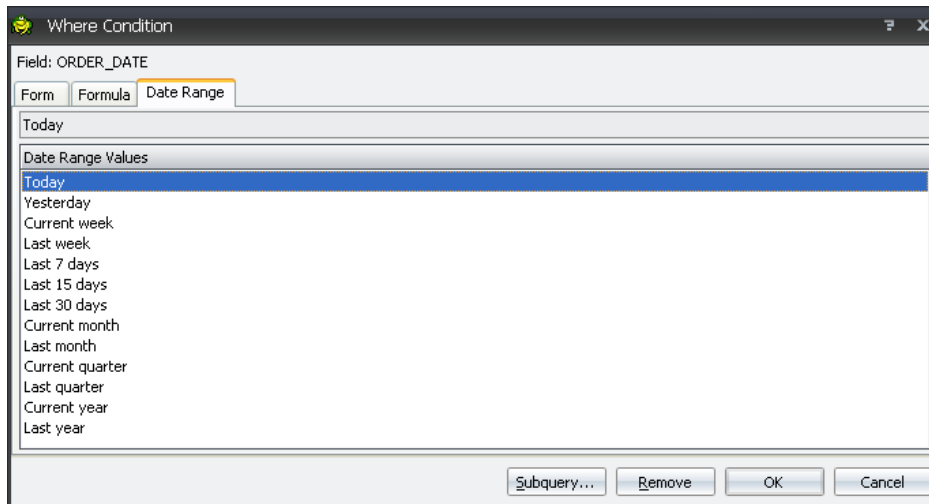
- You can add multiple sub-queries and model them as well
- Use Calculated fields to help write your WHERE clauses on ID fields
 - Right-click on an ID and select 'Find Lookup Table'

- Configure the descriptive data you want shown next to the ID values



See how the Department names are listed with the Department IDs?

- When working with DATE values, let Toad fill in the blanks for you!



- If you need help with a query that's already been written, the [Query Builder can reverse-engineer it](#) so you can model it instead!
- Toad can query objects from different databases and data sources! For example, if I have information in an Excel file and an Oracle table, I can drag both objects to the query builder. This should be reserved for quick and dirty reports that do not involve large amounts of data. This type of query forces the ODBC connector and can be client CPU/Memory intensive.



You'll need to manually add the relationship/join to the query.

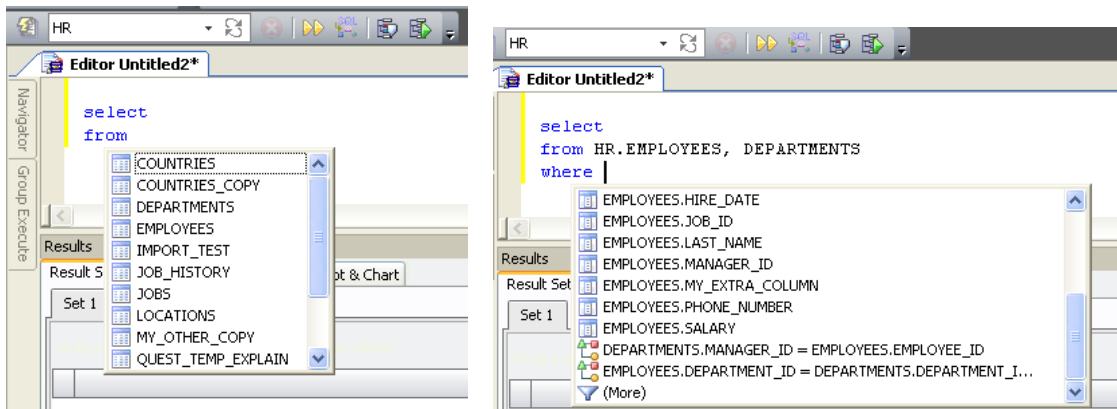
Editor

The editor is where you will be manually writing and executing your SQL statements. These tips and tricks can, over time, save you a tremendous amount of time. Remember though, if all of your data is in a single table or view, you may want to investigate manipulating the data grid in the Object Viewer to get to your report.

Code Insight|Type-Ahead-Technology

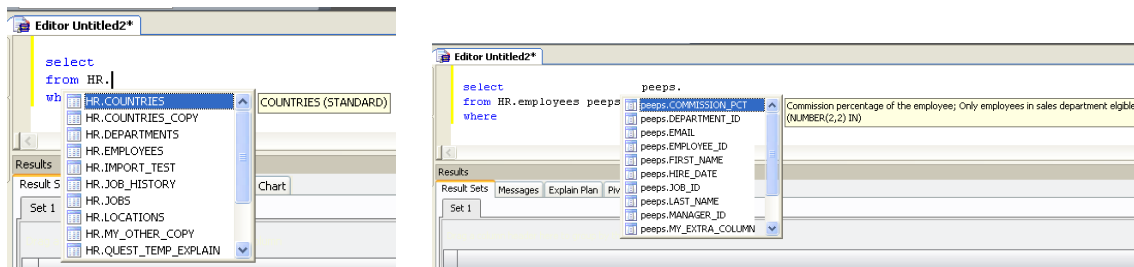
Toad can offer to auto-complete your queries. Our parser can identify and recognize your SQL. This allows Toad to display objects from the database that might be coming next in your queries. Here are some examples:

- After keywords 'SELECT', 'FROM', WHERE



Toad sees we are looking for tables or views, so it shows them to us. In the other example, it knows we need a WHERE clause, so it offers up the Foreign Key relationships to choose from.

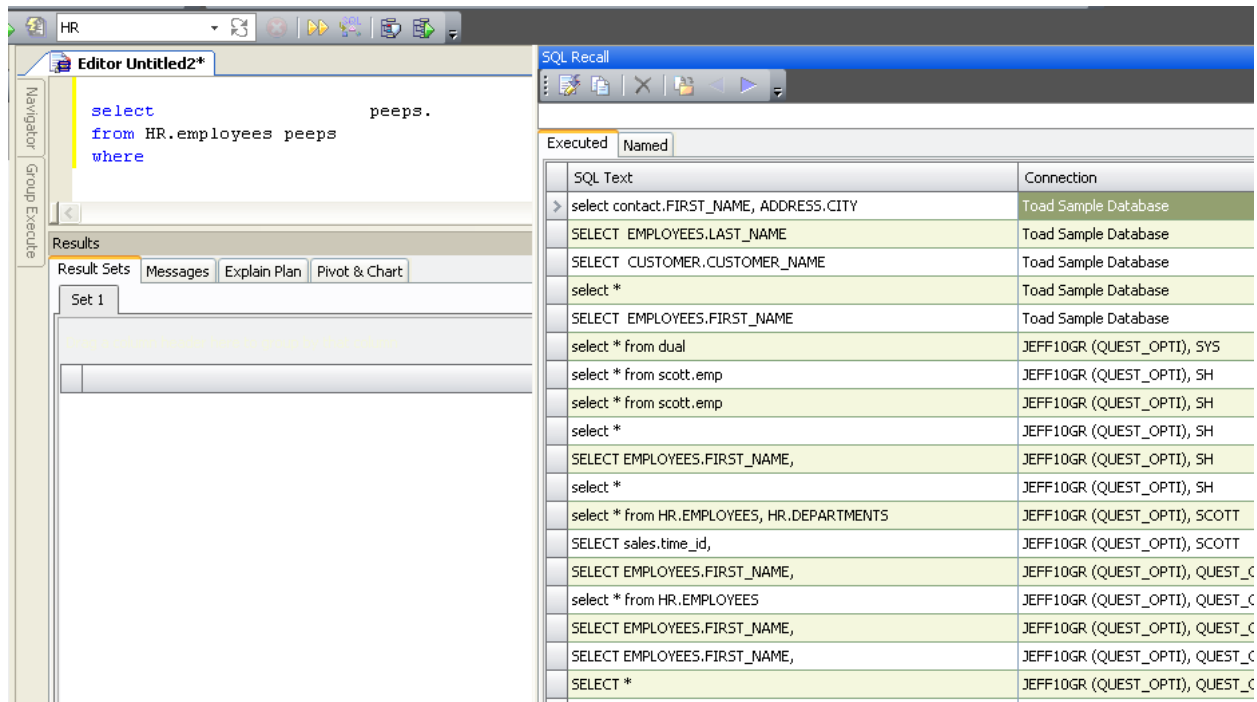
- After a '.' [DOT]



In the second example we can see where an aliased object is resolved. In the case of column insight, we will also show you the comments available from the table definition if available.

SQL Recall

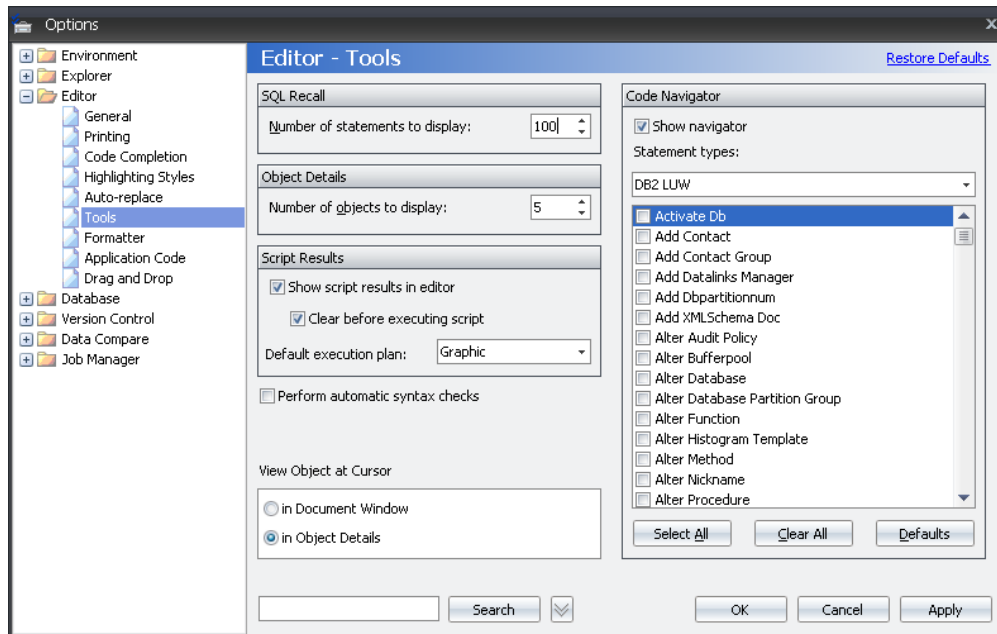
Each statement you execute in Toad is stored so it can be recalled later. The full recall list can be opened by using the <SHIFT>+F8 keystroke. It's also available under the View menu.



You may notice that the docked panel can take up large amount of real estate in the Toad application window...

My personal favorite method for recalling SQL statements is using the <ALT>+Up/Dn Arrow keys. This will cycle through your query statements in the editor. Very handy!

You should investigate the options if you want to increase the default amount of queries to be recorded (100.)

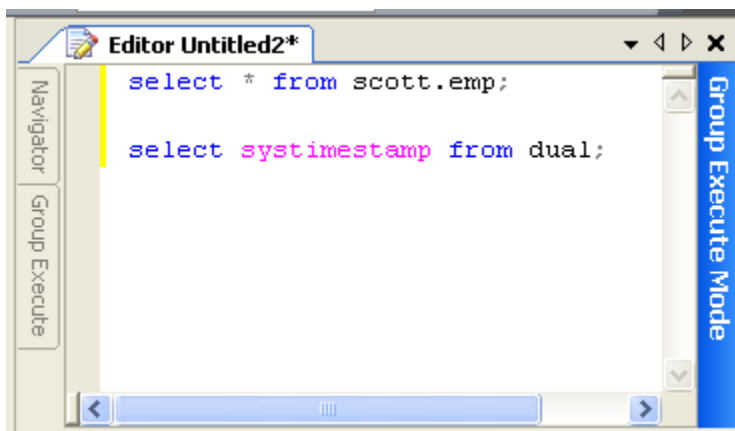


Options Tip: Use the Search mechanism to quickly find what you're looking for.

Group Execute

If you have one or more queries you want to execute against more than one database, this will be an extremely useful feature. First you need to make sure it's enabled. In the Toad editor, mouse-right-click and toggle on 'Show Group Execute.'

Once active, click in this docked panel, and choose the databases you want to execute your queries. If this is enabled, you will get a visual indicator, and a prompt to ensure you really want to execute against multiple sources. BE CAREFUL WITH THIS FEATURE!



Query Results, Seeing Differences

If you are running multiple versions of the same query, you may need some help deciphering the results of each query. As you execute queries in Toad, you will get a new data grid in the editor. If you want to

see what is different between any of these grids, simply mouse-right-click in the grid and choose 'Compare To'.

Data Diff Viewer						Editor Untitled3: Set 2					
Editor Untitled3: Set 1						Editor Untitled3: Set 2					
EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	EMPNO	ENAME	JOB	MGR	HIREDATE	SAL
1	SMITH	CLERK	7902	3/25/2008	1000						
3	JoNeS	CLERK	7902	3/25/2008	1000						
7369	SMITH	CLERK	7902	12/17/1980	800						
7499	Allen	SALESMAN	7698	2/20/1981	1600	7499	Allen	SALESMAN	7698	2/20/1981	
7521	WARD	SALESMAN	7698	6/17/2008	1250						
7566	JONES	MANAGER	7839	4/2/1981	2900	7566	JONES	MANAGER	7839	4/2/1981	
7654	MARTIN	SALESMAN	7698	9/10/1981	1250						
7698	BLAKE	MANAGER	7839	5/21/1981	2850	7698	BLAKE	MANAGER	7839	5/21/1981	
7782	CLARK	MANAGER	7839	6/9/1981	2450	7782	CLARK	MANAGER	7839	6/9/1981	
7788	SCOTT	ANALYST	7566	4/19/1987	3000	7788	SCOTT	ANALYST	7566	4/19/1987	
7839	KING	PRESIDENT		11/17/1981	5000	7839	KING	PRESIDENT		11/17/1981	
7844	TURNER	SALESMAN	7698	9/8/1981	1500	7844	TURNER	SALESMAN	7698	9/8/1981	
7876	ADAMS	CLERK	7788	5/23/1987	1100						
7900	JAMES	CLERK	7698	12/3/1981	950						
7902	FORD	ANALYST	7566	12/3/1981	3000	7902	FORD	ANALYST	7566	12/3/1981	
7934	MILLER	CLERK	7782	1/23/1982	1300	7934	MILLER	CLERK	7782	1/23/1982	

Toad will show you rows missing from each set and rows that differ apart from the primary key values.

Pivoting Data

Toad's pivot grids can reorganize and summarize data to create meaningful reports. You can sort and sum data independent of the original data layout. This can be useful for creating financial and statistical reports.

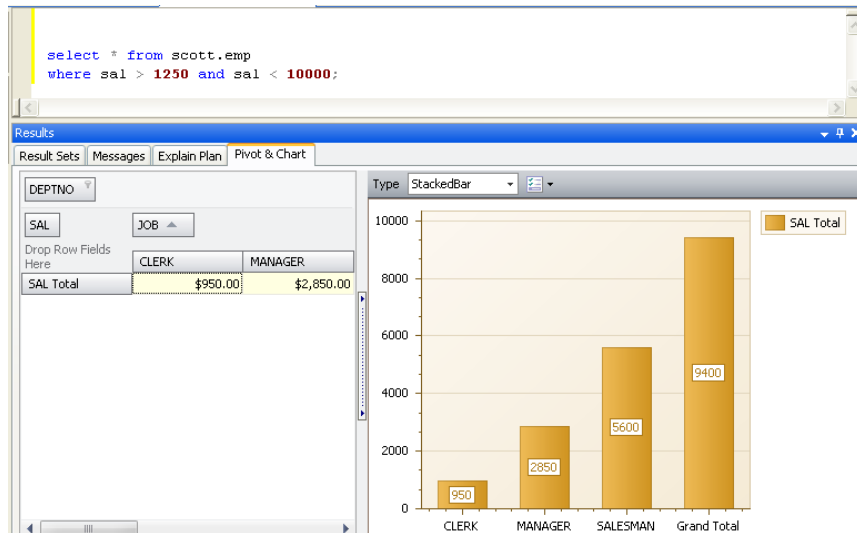
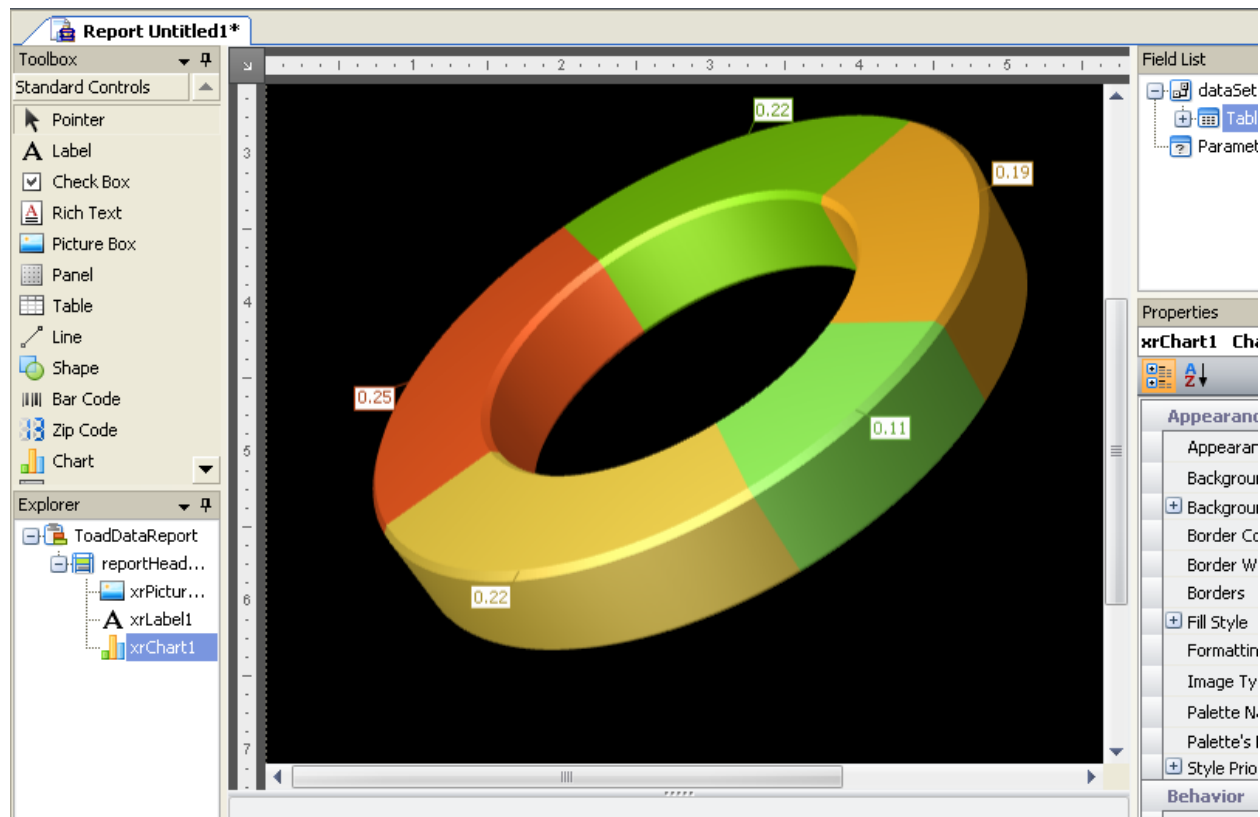


Chart Wizard

You can turn any data grid into a chart on the fly. Simply mouse-right-click in a grid and choose 'Send To -> Chart Designer.' Needless to say, you can have a lot of fun here!

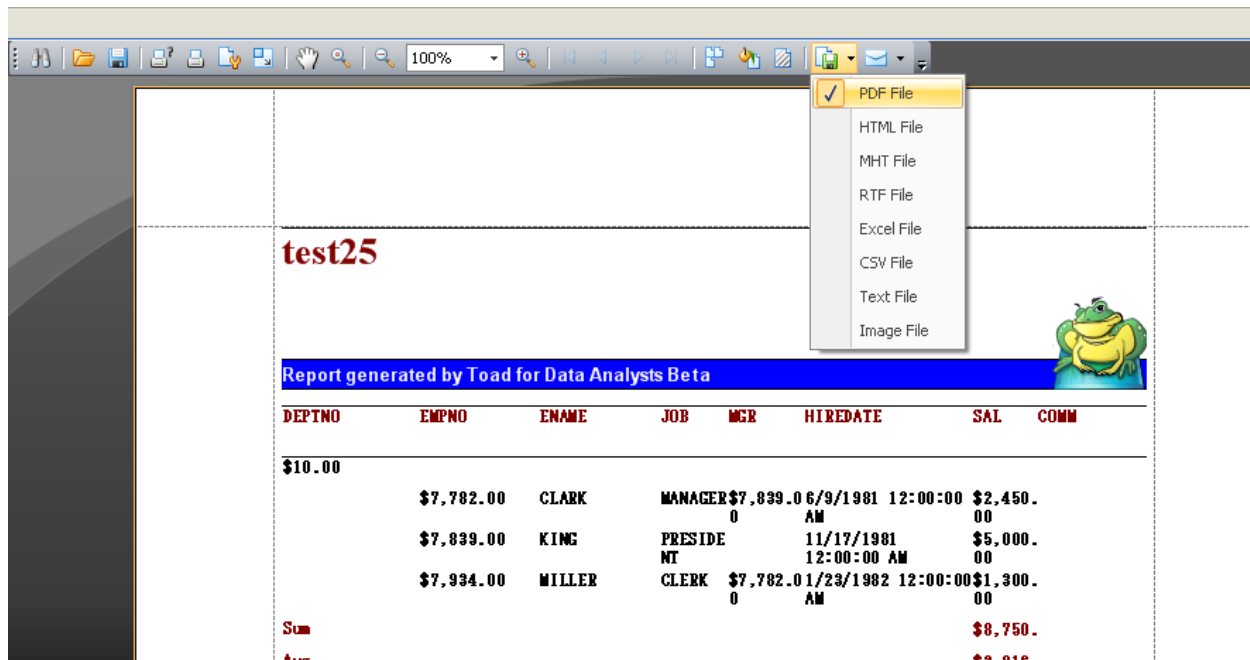


Full Report Wizard

Instead of sending your data to the Chart Wizard, you can also choose to work with the 'Data Report Designer.' Toad will ask you which columns from your query you want to report on, if you want to do any grouping, and if you want to add any additional statistical fields.

Once you have finished the wizard, it will send you to the reporting IDE. Again this may look familiar if you have ever built a report with Access. This format does not allow for a full tutorial here, but there are some good things to know and will help you get started.

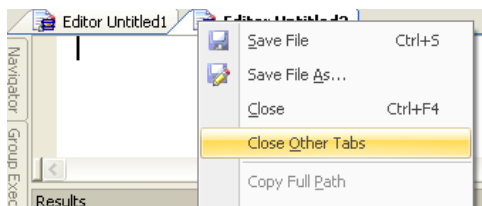
- Use the 'Preview' tab to see what your report will look like. You can also export your report to PDF, RTF, and several image file types from here.
- Be sure to hide/minimize the 'Navigation Manager' panel, you will need as much real estate here as you can get!
- If you want to change something in the report, click on it, then go to the 'Properties' panel to adjust as necessary.
- You can add pictures, charts, and other objects by simply drawing them onto the report page.



Tip: Need your query exported to PDF? Use the Report Designer!

General Tips & Tricks

- Need to close everything but your current document? Right-mouse-click on the document tab and choose 'Close Other Tabs'



- Want Toad to look and feel like MS Query Analyzer or SQL Navigator? Run the Tools > Configuration Wizard.
- Use the Project Manager to easily recall your previous work like reports and ER Diagrams
- Be sure to check out the following utilities, they are extremely powerful!
 - Data Compare and Sync (compare tables and get INSERT/UPDATE/SYNCH scripts)
 - Master Detail Browser (view data via ROI diagrams)
 - Import Wizard (automatically import data from Excel to your database)
 - Automate (create Toad macros and replay or schedule them to run at any time)
 - Email (Automate feature can email your reports and exports automagically!)
- Bookmark [ToadWorld](#) and the [Toad User Community](#)
- Need help? Watch the movie! Look for the movie camera icon at the bottom of your screen.

