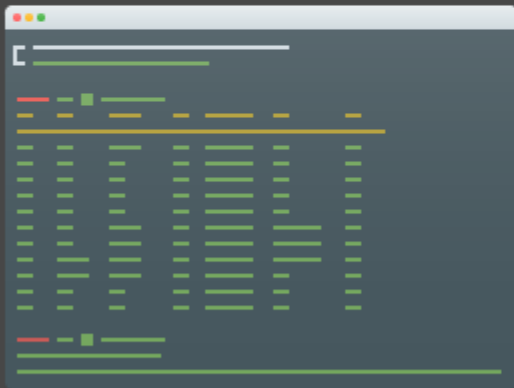


SQLDev

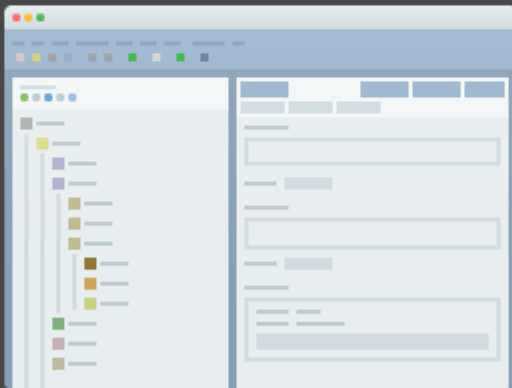
Tips and Tricks



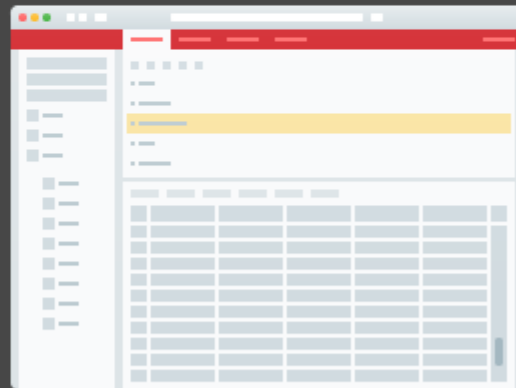
Jeff Smith
Senior Principal Product Manager
Jeff.d.smith@oracle.com || @thatjeffsmith
Database Tools, Oracle Corp



Terminal



Desktop



Web

Not Just THAT SQLDev Guy...

- Database Development Tools team
- Product manager/story teller (SQLDev, SQLcl, Data Modeler, ORDS)
- Oracle Emp since 2011, Quest Software for 10 years, ...
- I bother people online as @thatjeffsmith
- Contact me for a free remote presentation for your group/company



CrossFit®



Safe Harbor Statement

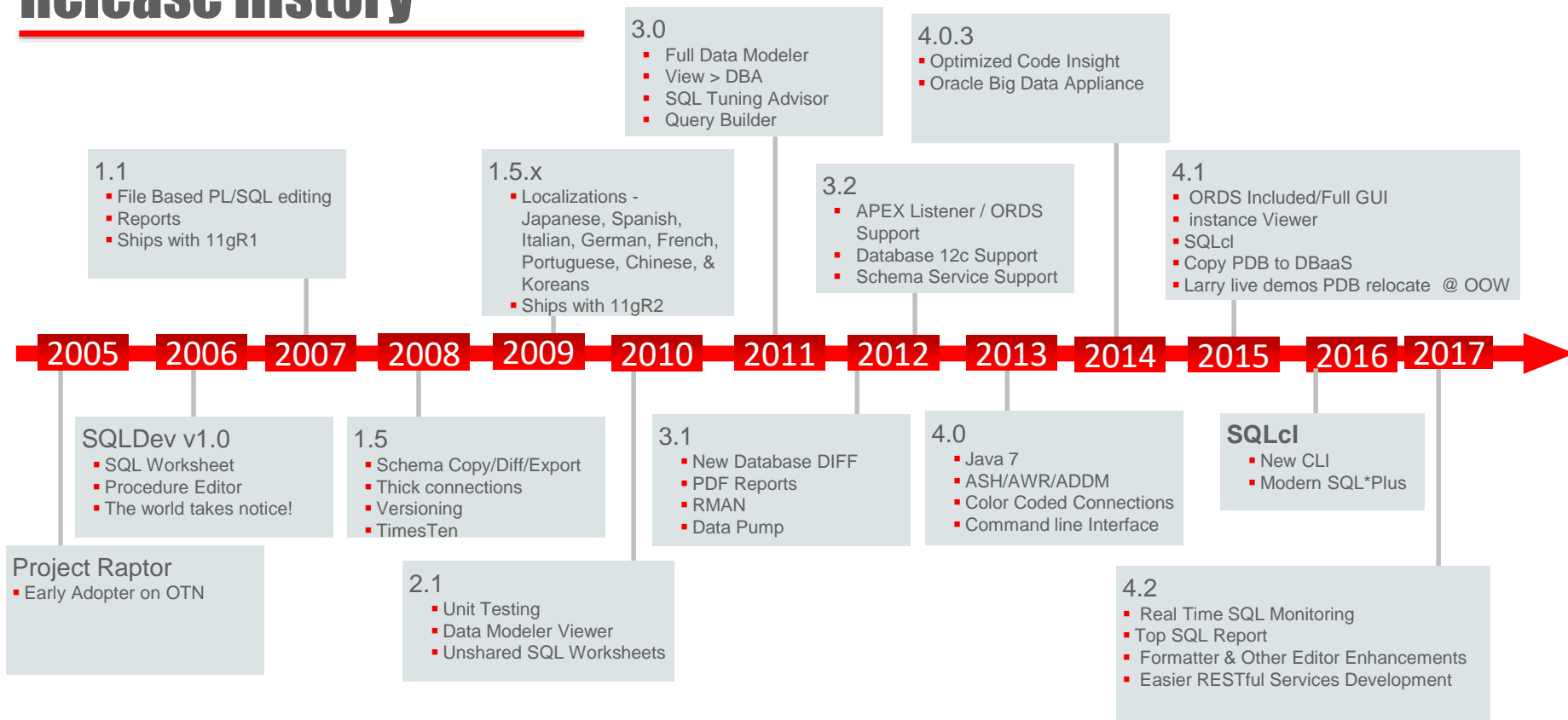
The preceding is intended to outline our general product direction. It is intended for information purposes only, and may not be incorporated into any contract. It is not a commitment to deliver any material, code, or functionality, and should not be relied upon in making purchasing decisions. The development, release, and timing of any features or functionality described for Oracle's products remains at the sole discretion of Oracle.

Oracle SQL Developer, Major Feature Areas

- PL/SQL IDE
- SQL editor
- GUI for browsing and managing database objects
- Ad Hoc reporting
- Database Design & Data Modeling
- Database Administration
- 3rd Party RDBMS Migrations to Oracle
- Deploy and Administer Oracle REST Data Services
- REST Enablement of the Database
- Command Line Interface



Release History



Release History

2017.2

- Bug Fixes
- Sharding
- Data Guard

17.3 & 17.4

- Bug Fixes

2017

2018

18.1

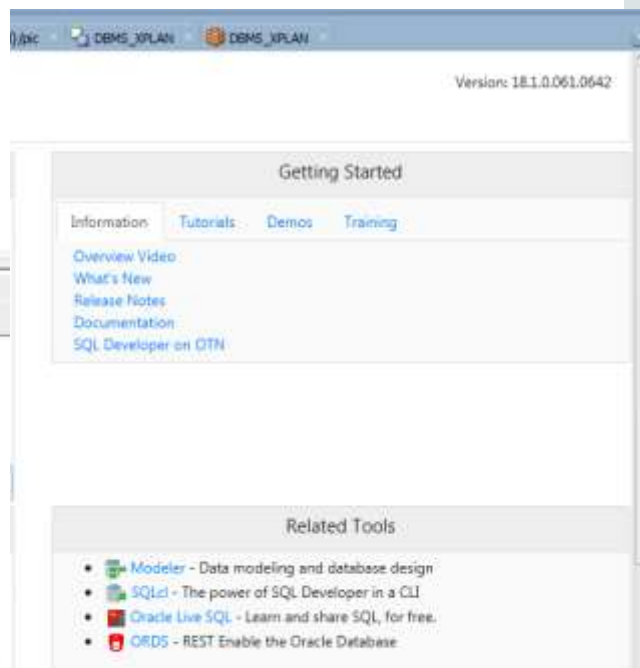
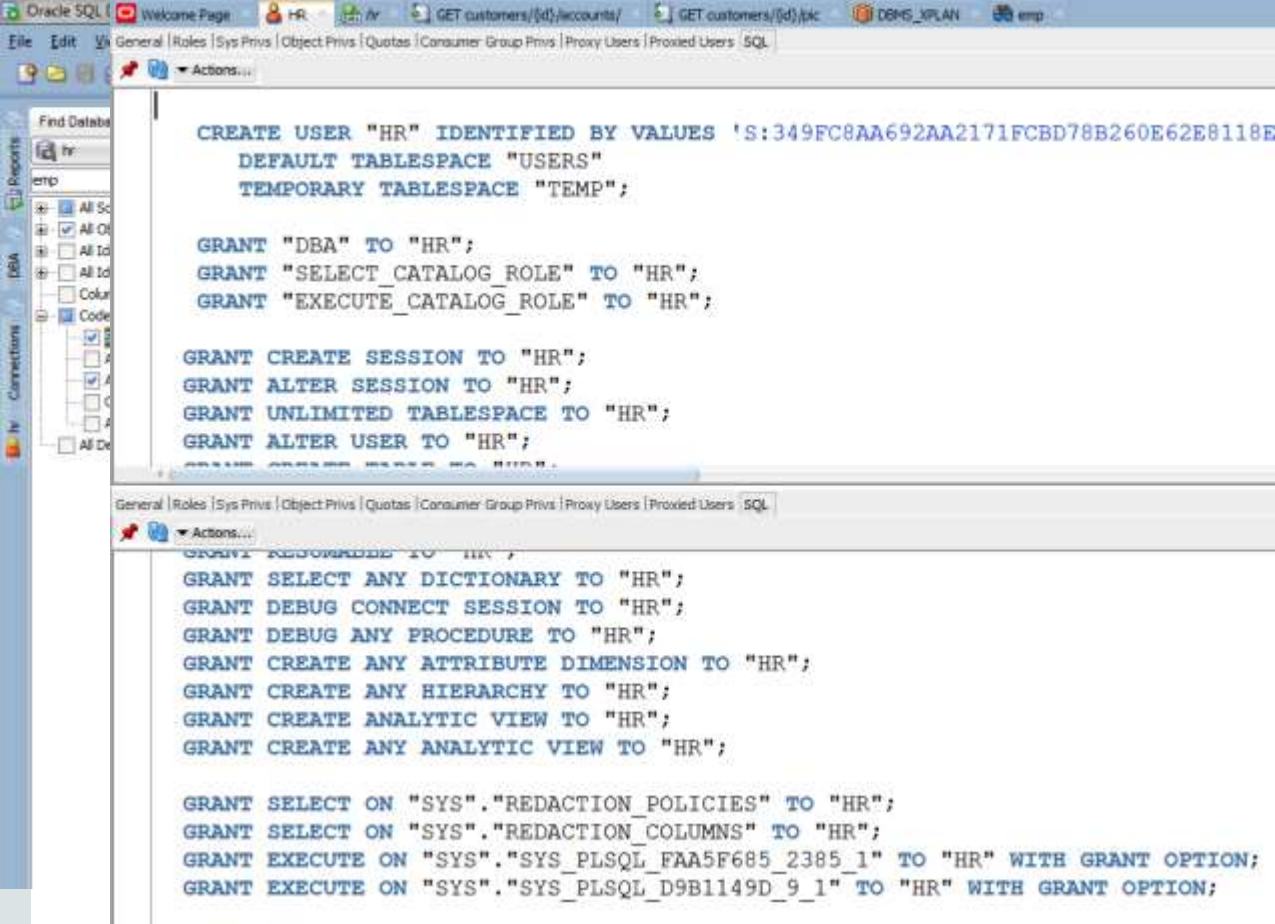
- Autonomous Data Warehouse Support
- New Welcome Screen/Connections
- SQL Injection Detection
- PL/Scope SQL Statement Support
- Better Formatting
- KILL ALL THE BUGS!



Quarterly Releases!!!

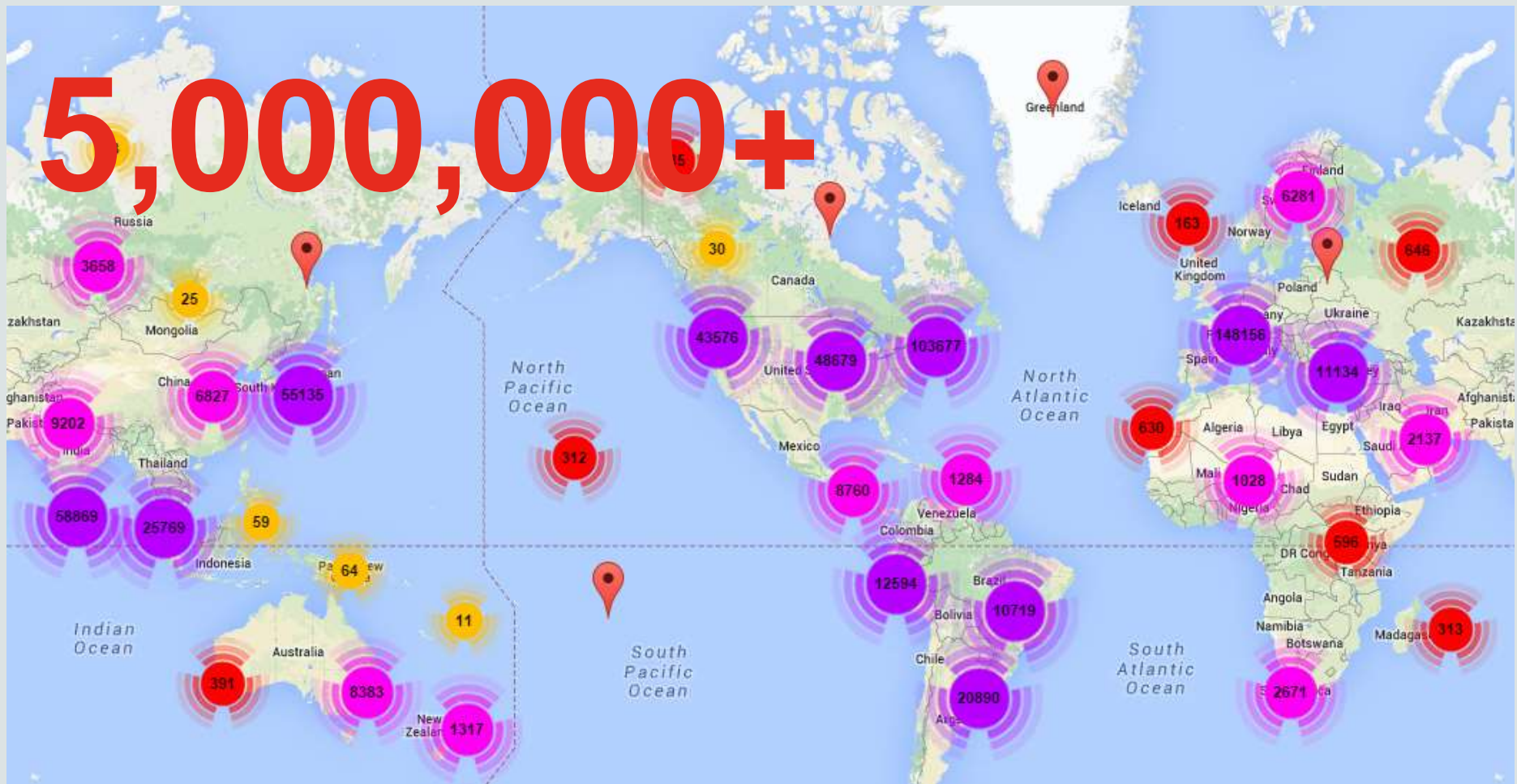
A background of deep red, vertically pleated curtains. A bright, circular spotlight shines from the left, illuminating a section of the curtains and creating a strong contrast with the surrounding dark red fabric.

SNEAK PEEK



Feature Screenshots

5,000,000+



Provocative Statement!



*You're doing it **wrong**.
All **wrong**.
Do you even SQLDev?*

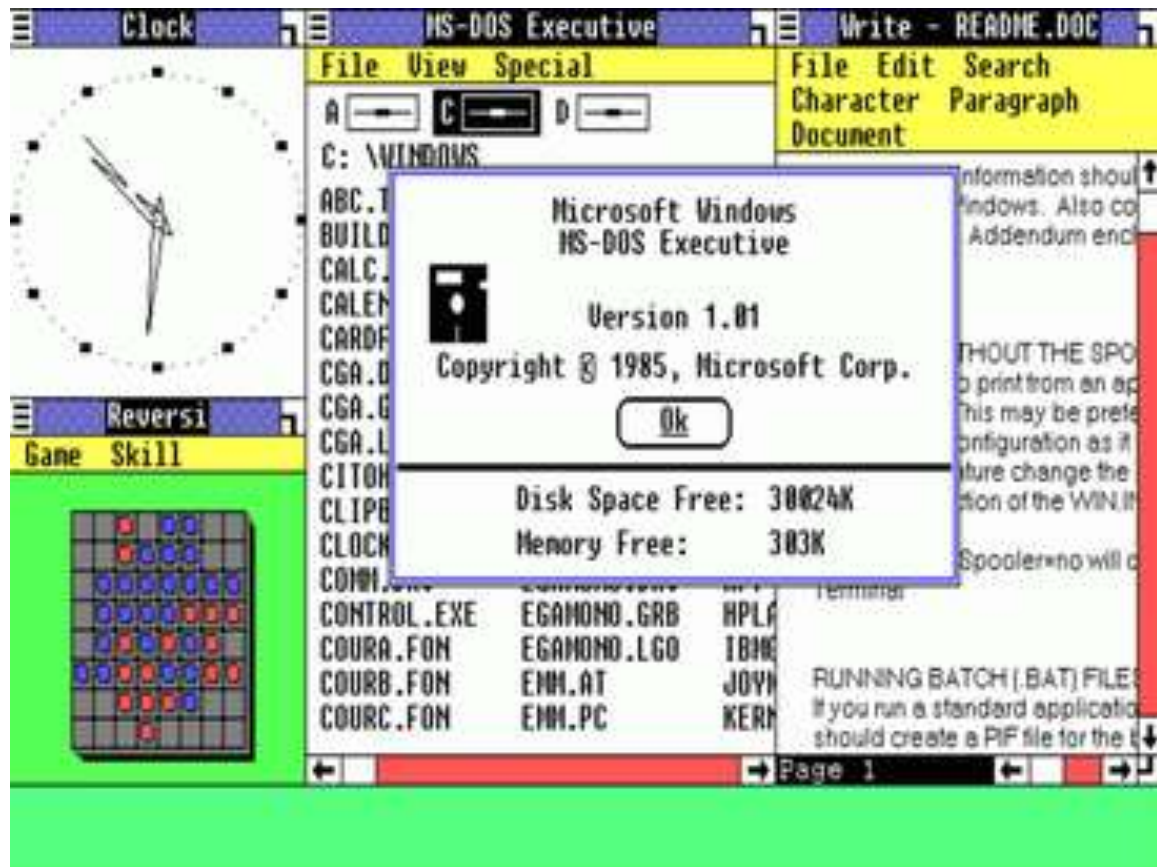
Huge Product, Most Folks are Self-Taught...

- PL/SQL IDE
- SQL editor
- GUI for browsing and managing database objects
- Ad Hoc reporting
- Database Design & Data Modeling
- Database Administration
- 3rd Party RDBMS Migrations to Oracle
- Deploy and Administer Oracle REST Data Services
- REST Enablement of the Database
- Command Line Interface

...it's our fault, not yours.

Jeff's Driving School





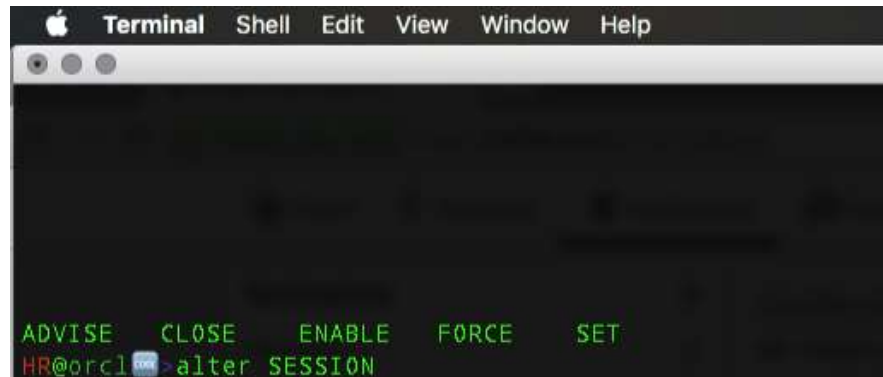
*Biggest
complaint?*

*Too much...
MOUSE.*

Also Available on the command-line: SQLcl & <TAB>

```
CLOB_STUFF      COMMISSION_PCT  DEPARTMENT_ID  EMAIL          EMPLOYEE_ID
EMP_DEVICE      FIRST_NAME     HIRE_DATE      JOB_ID         LAST_NAME
MANAGER_ID      PHONE_NUMBER   REVIEW         SALARY
HR@orcl >select
  2  from hr.employees
  3  where COMMISSION_PCT      is not null
```

- Just hit <TAB> for help
- Autocompletes on Single Match
- Lists possible matches otherwise!



The screenshot shows a macOS Terminal window with the title bar 'Terminal' and menu items 'Shell', 'Edit', 'View', 'Window', and 'Help'. The terminal content shows the command 'alter SESSION' being entered. Above the command, a list of possible completions is displayed: 'ADVISE', 'CLOSE', 'ENABLE', 'FORCE', and 'SET'. The prompt is 'HR@orcl'.

```
ADVISE  CLOSE  ENABLE  FORCE  SET
HR@orcl >alter SESSION
```

SQL Statement & Script History – access with Up/Down Key

```
HR@orcl>history full
1  info EVERYFIRSTANDTHIRDWED
2  ddl EVERYFIRSTANDTHIRDWED
3  alias dom=SELECT
>    table_name "TABLE",
>    tablespace_name "TABLESPACE",
>    logging,
>    num_rows,
>    blocks,
>    empty_blocks,
>    avg_row_len,
>    cache,
>    last_analyzed stats,
>    CASE WHEN
>        la > 2
>    THEN
```

```
HR@orcl>history
History:
1  info EVERYFIRSTANDTHIRDWED
2  ddl EVERYFIRSTANDTHIRDWED
3  alias dom=SELECT    table_name "TABLE",
4  show sqlformat
5  select count(*) from v$session where username
6  select * from sh.sales
7  connect sys as sysdba
8  alter user sh unlocked
9  alter user sh status unlocked
10 connect sh/oracle
11 alias list dom
12 tables2
13 host cat login.sql
14 host cat login.js
```

```
HR@orcl>history 69
1  select FIRST_NAME, LAST_NAME, SALARY, HIRE_DATE
2  from hr.employees
3* where COMMISSION_PCT is not null
HR@orcl>
```

- Sensitive commands, *connect* black-listed
- Defaults to last 100
- Avail from session to session per OS user

CLI: Use an ALIAS to Make DBMS_XPLAN EASY

```
C:\windows\system32\cmd.exe - sql*plus

(HR) orcl > alias list plan
plan
----
SELECT * FROM table(DBMS_XPLAN.DISPLAY_CURSOR)

(HR) orcl > dom

```

TABLE	TABLESPACE	LOGGING	NUM_ROWS	BLOCKS	EMPTY_BLOCKS	AVG_ROW_LEN	CACHE	STATUS	LAST_ANALYZED	STATS	LAST	
COUNTRIES			25			15		N	07-JUL-016 01:02:06	71.3 days	NO	IOT
DAVE	USERS	YES	2	5	0	17		N	15-SEP-016 00:34:00	23.3 hours	NO	
DEPARTMENTS	USERS	YES	27	5	0	21		N	07-JUL-016 01:02:06	71.3 days	NO	
EMPLOYEES	USERS	YES	107	5	0	69		N	31-AUG-016 01:01:37	16.3 days	NO	
INSERTS	USERS	YES	115	5	0	3		N	13-SEP-016 01:01:35	3.3 days	NO	
IPSUM	USERS	YES	1	5	0	732		N	31-AUG-016 01:01:13	16.3 days	NO	
ITUNES_MUSIC	USERS	YES	10229	496	0	307		N	31-AUG-016 01:01:13	16.3 days	NO	
JOBS	USERS	YES	19	5	0	33		N	07-JUL-016 01:02:07	71.3 days	NO	
JOB_HISTORY	USERS	YES	10	5	0	31		N	07-JUL-016 01:02:07	71.3 days	NO	
LOCATIONS	USERS	YES	23	5	0	49		N	07-JUL-016 01:02:06	71.3 days	NO	
MVIEW1	USERS	YES	107	5	0	69		Y	15-SEP-016 01:01:37	31.8 hours	NO	
REGIONS	USERS	YES	4	5	0	14		N	07-JUL-016 01:02:06	71.3 days	NO	
TABLE_BLOG_QUESTION	USERS	YES	0	0	0	0		N	03-SEP-016 01:01:33	13.3 days	NO	
UNILAUT	USERS	YES	4	5	0	3		N	03-SEP-016 01:01:41	13.3 days	NO	

```

14 rows selected.

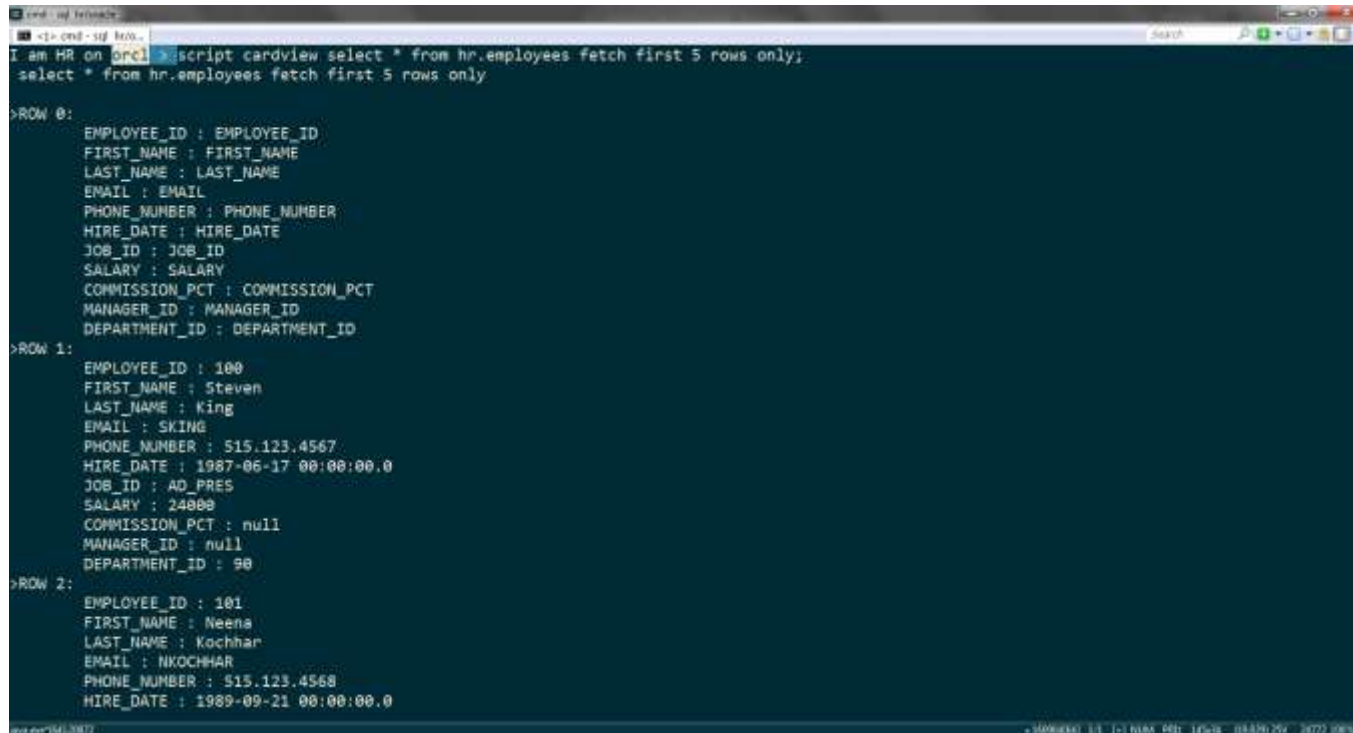
(HR) orcl > plan
SQL> show cursor
SQL_ID 0fz4kwan59pat, child number 2
-----
SELECT      table_name "TABLE",      tablespace_name "TSPACE", logging,
            num_rows,      blocks,      empty_blocks,      avg_row_len,      cache,
            last analyzed stats,      CASE WHEN      1a > 2      THEN
```


Get your files, whichever way you want them

```
(HR) orcl >set sqlformat csv
(HR) orcl >set head off
(HR) orcl >set feedback off
(HR) orcl >cd C:\Users\jdsmith\Desktop
(HR) orcl >spool locations.csv
(HR) orcl >select * from locations fetch first 5 rows only;
1000,"1297 Via Cola di Rie","00989","Roma","", "IT"
1100,"93091 Calle della Testa","10934","Venice","", "IT"
1200,"2017 Shinjuku-ku","1689","Tokyo","Tokyo Prefecture","JP"
1300,"9450 Kamiya-cho","6823","Hiroshima","", "JP"
1400,"2014 Jabberwocky Rd","26192","Southlake","Texas","US"
(HR) orcl >spool off
(HR) orcl >host type locations.csv
1000,"1297 Via Cola di Rie","00989","Roma","", "IT"
1100,"93091 Calle della Testa","10934","Venice","", "IT"
1200,"2017 Shinjuku-ku","1689","Tokyo","Tokyo Prefecture","JP"
1300,"9450 Kamiya-cho","6823","Hiroshima","", "JP"
1400,"2014 Jabberwocky Rd","26192","Southlake","Texas","US"

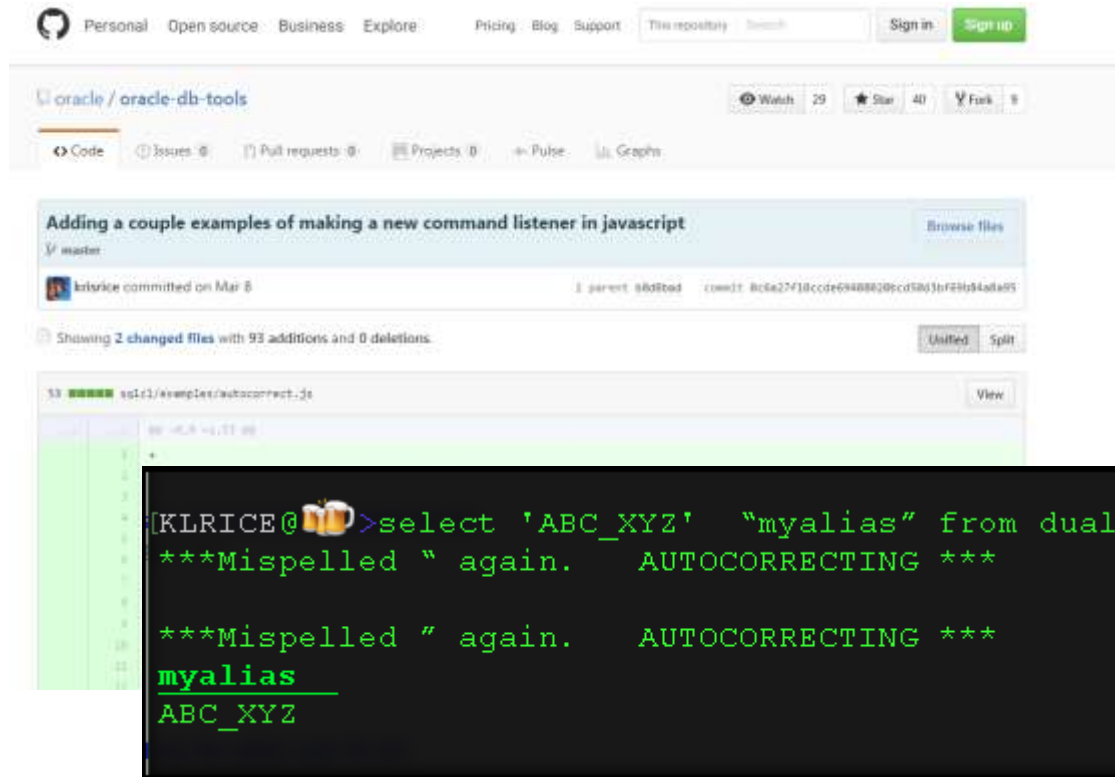
(HR) orcl >
```

Custom Formats, just add JavaScript



```
SQL> @hr.js  
I am HR on Oracle >script cardview select * from hr.employees fetch first 5 rows only;  
select * from hr.employees fetch first 5 rows only  
  
>ROW 0:  
EMPLOYEE_ID : EMPLOYEE_ID  
FIRST_NAME : FIRST_NAME  
LAST_NAME : LAST_NAME  
EMAIL : EMAIL  
PHONE_NUMBER : PHONE_NUMBER  
HIRE_DATE : HIRE_DATE  
JOB_ID : JOB_ID  
SALARY : SALARY  
COMMISSION_PCT : COMMISSION_PCT  
MANAGER_ID : MANAGER_ID  
DEPARTMENT_ID : DEPARTMENT_ID  
  
>ROW 1:  
EMPLOYEE_ID : 100  
FIRST_NAME : Steven  
LAST_NAME : King  
EMAIL : SKING  
PHONE_NUMBER : 515.123.4567  
HIRE_DATE : 1987-06-17 00:00:00.0  
JOB_ID : AD_PRES  
SALARY : 24000  
COMMISSION_PCT : null  
MANAGER_ID : null  
DEPARTMENT_ID : 90  
  
>ROW 2:  
EMPLOYEE_ID : 101  
FIRST_NAME : Neena  
LAST_NAME : Kochhar  
EMAIL : NKOCHHAR  
PHONE_NUMBER : 515.123.4568  
HIRE_DATE : 1989-09-21 00:00:00.0
```

Auto-Replace/Spell Checking in SQLcl



The screenshot shows a GitHub repository for 'oracle / oracle-db-tools'. A commit titled 'Adding a couple examples of making a new command listener in javascript' is displayed, committed by 'klrice' on Mar 8. The commit shows a file 'sqlcl/examples/autocorrect.js' with a diff. A terminal window is overlaid on the bottom left, showing a SQL command being corrected from 'myalias' to 'ABC_XYZ'.

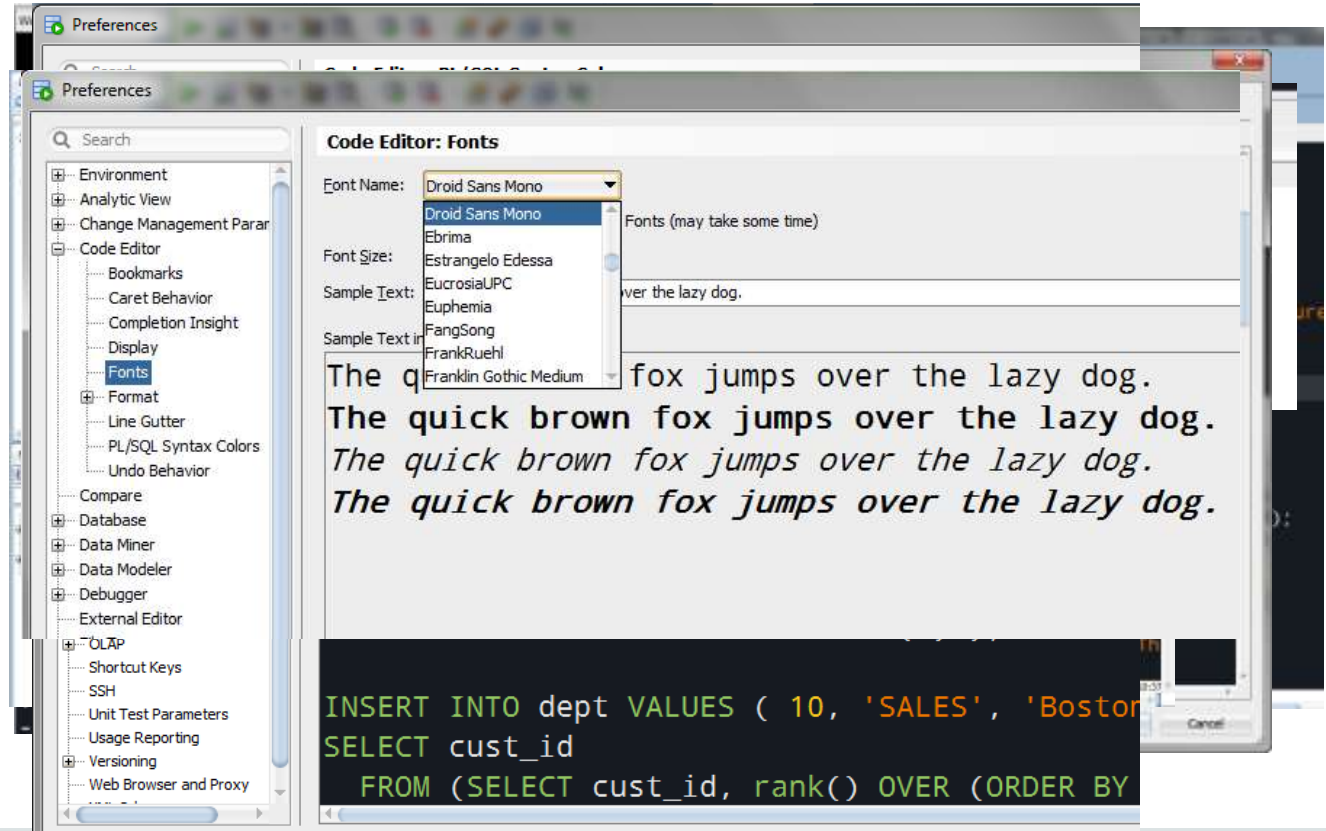
```
[KLRICE@>select 'ABC_XYZ' "myalias" from dual;
***Misspelled " again.   AUTOCORRECTING ***

***Misspelled " again.   AUTOCORRECTING ***
myalias
ABC_XYZ
```

- Uses SCRIPT/JS
- Looks for 'bad' text
- Replaces before sending to JDBC
- Shows corrected SQL with Output

Step 1: LOOK GOOD

- fonts
- output
- line numbers
- highlighting
- formatting
- desktop management



Step 2: Navigate Like a Boss

- trim your tree
- ...or Schema Browser
- ctrl+click
- Alt+G

The screenshot displays the Oracle SQL Developer interface with several windows and annotations:

- Connections:** Shows a connection to 'HR'.
- Code Outline:** Displays the structure of a PL/SQL block with sections like 'WHERE', 'STATE', and 'TX'.
- Worksheet:** Contains a SQL query:

```
--set sqlformat ansiconsole
clear screen
SELECT beer,
       brewery,
       city,
       state
FROM untappd
```

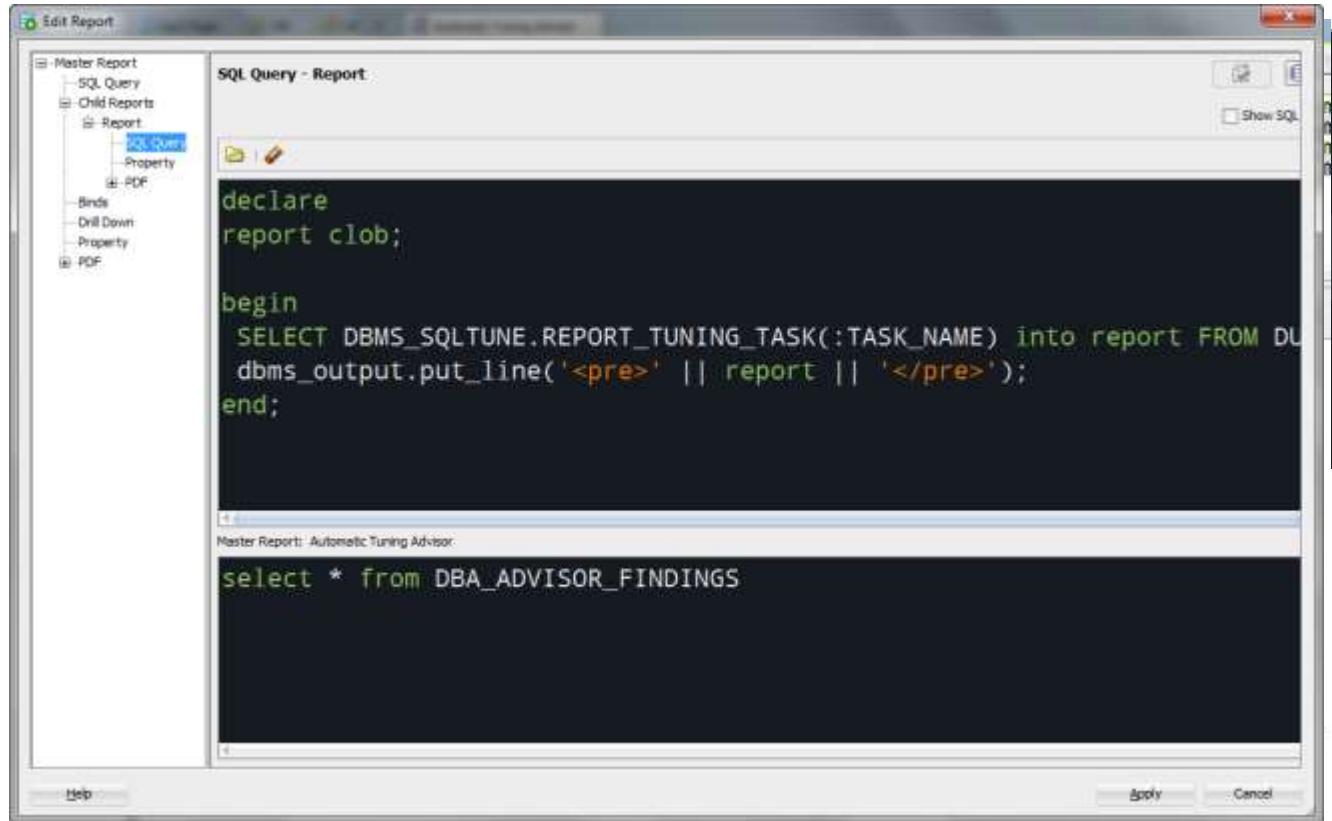
 - A red arrow points from the 'Find Database Object' button in the Schema Browser to the 'untappd' table in the query.
 - Another red arrow points from the text 'ALT+G at cursor...' to the 'untappd' table in the query.
- Schema Browser:** Shows a tree view of the 'untappd' schema. A red arrow points from the 'Find Database Object' button to the 'untappd' schema.
- Script Output:** Shows the results of the query, displaying columns 'BEER' and 'BREWERY' with their respective values.
- Query Result:** Shows the results of the query, displaying columns 'BEER' and 'BREWERY' with their respective values.

Annotations include:

- A red arrow pointing from the 'Find Database Object' button in the Schema Browser to the 'untappd' table in the query.
- A red arrow pointing from the text 'ALT+G at cursor...' to the 'untappd' table in the query.

Step 3: Automate Your Stuff

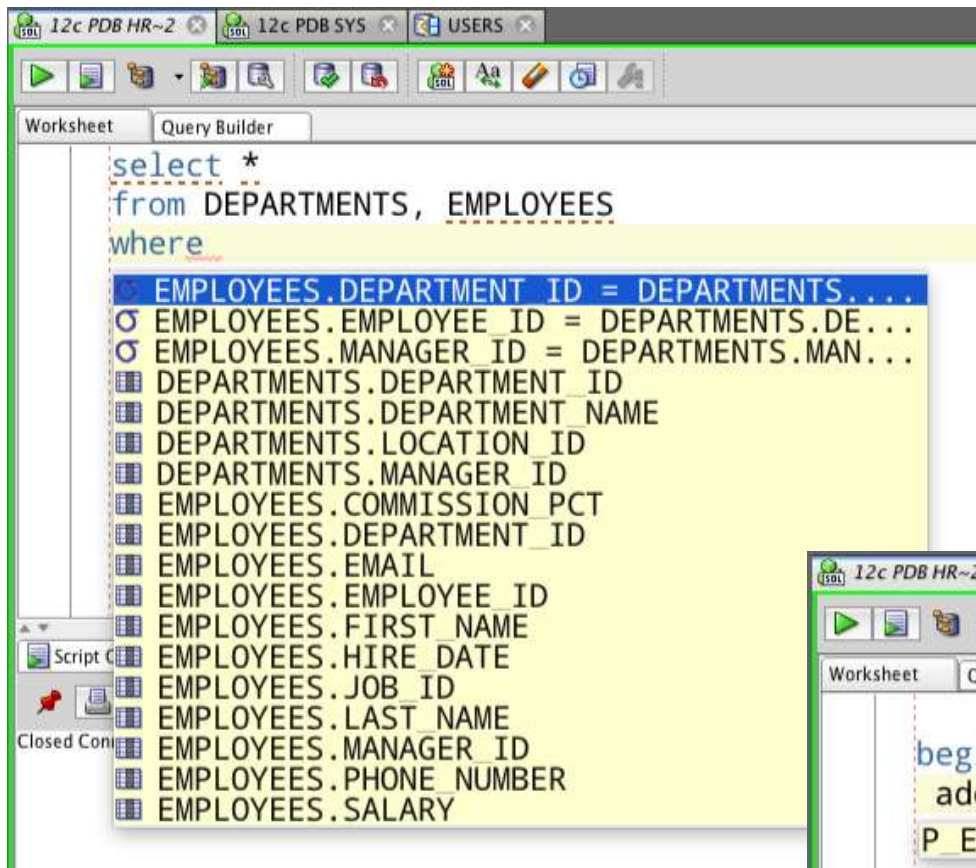
- Code Snippets
- ...or Auto-Replace
- Reports



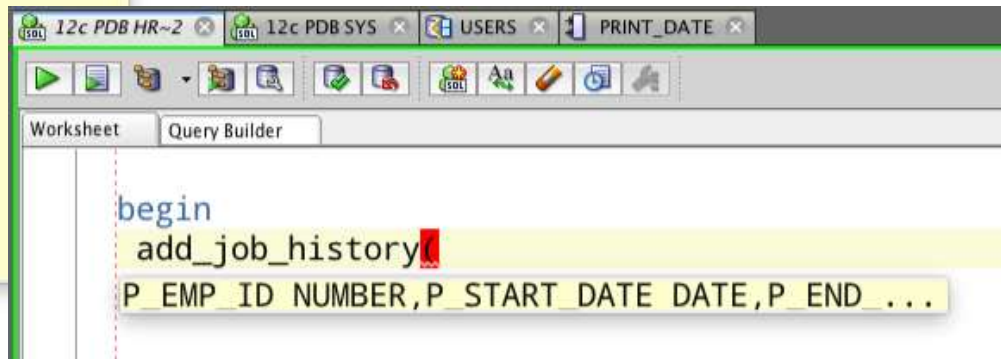
Manual versus Automatic...

...what's better?

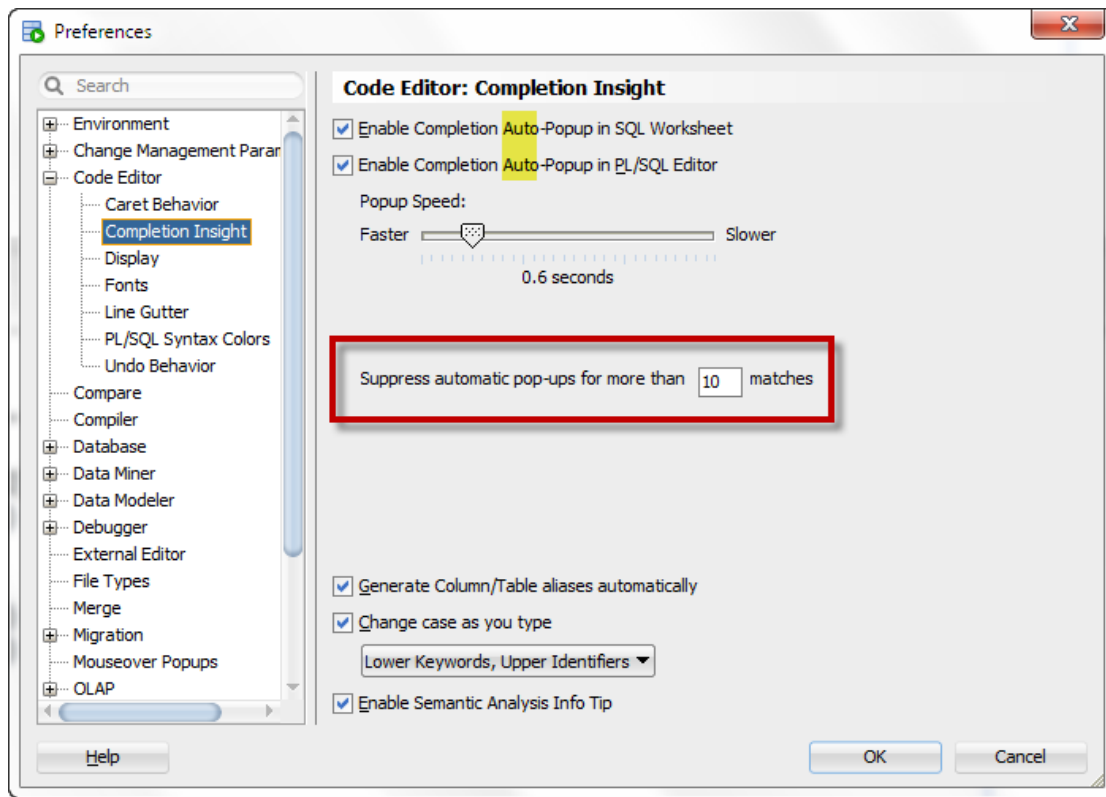




- Automatic = suggestions as you type
- Manual = suggestions as you ask for them (*ctrl+space*)



Completion Insight, I recommend The Stick!



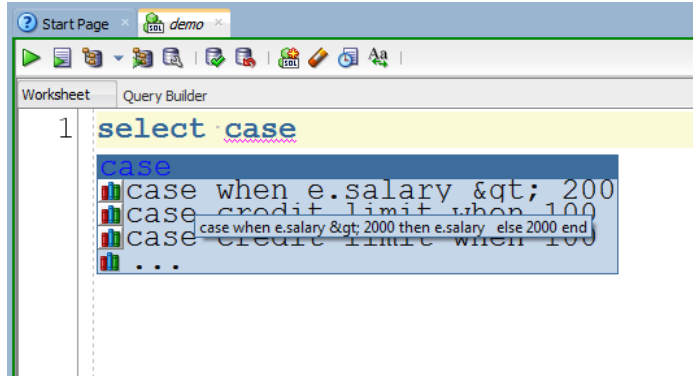
- Adjust delay
- Suppress automatic suggestions

OR

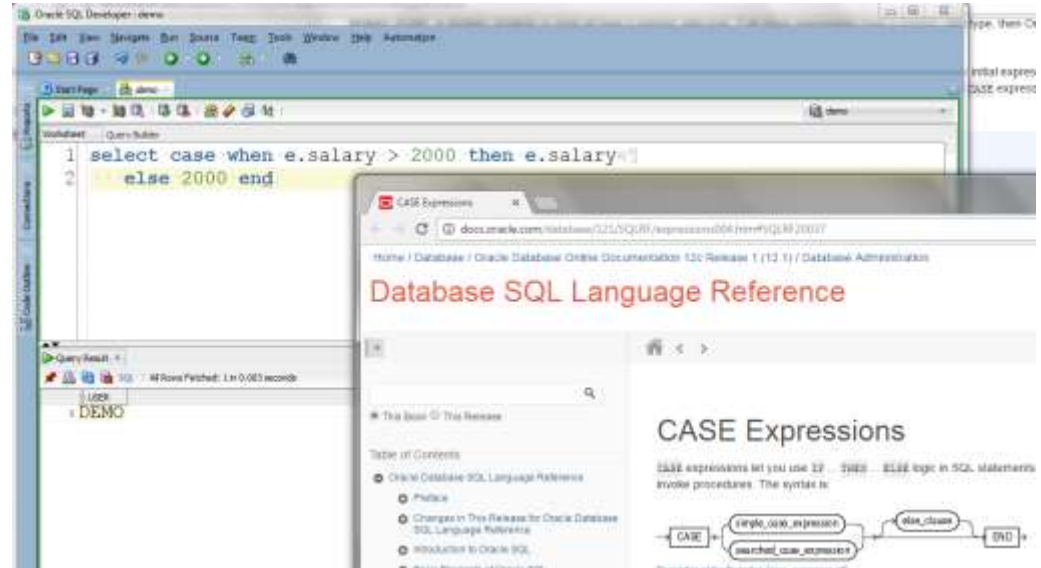
- Turn off completely and use keyboard, on demand

Bonus: Get Help/Examples with Commands!

- *peak* into Docs for sample code on your function/command



- click on 'book' to go straight to the DOCS page for that function/command

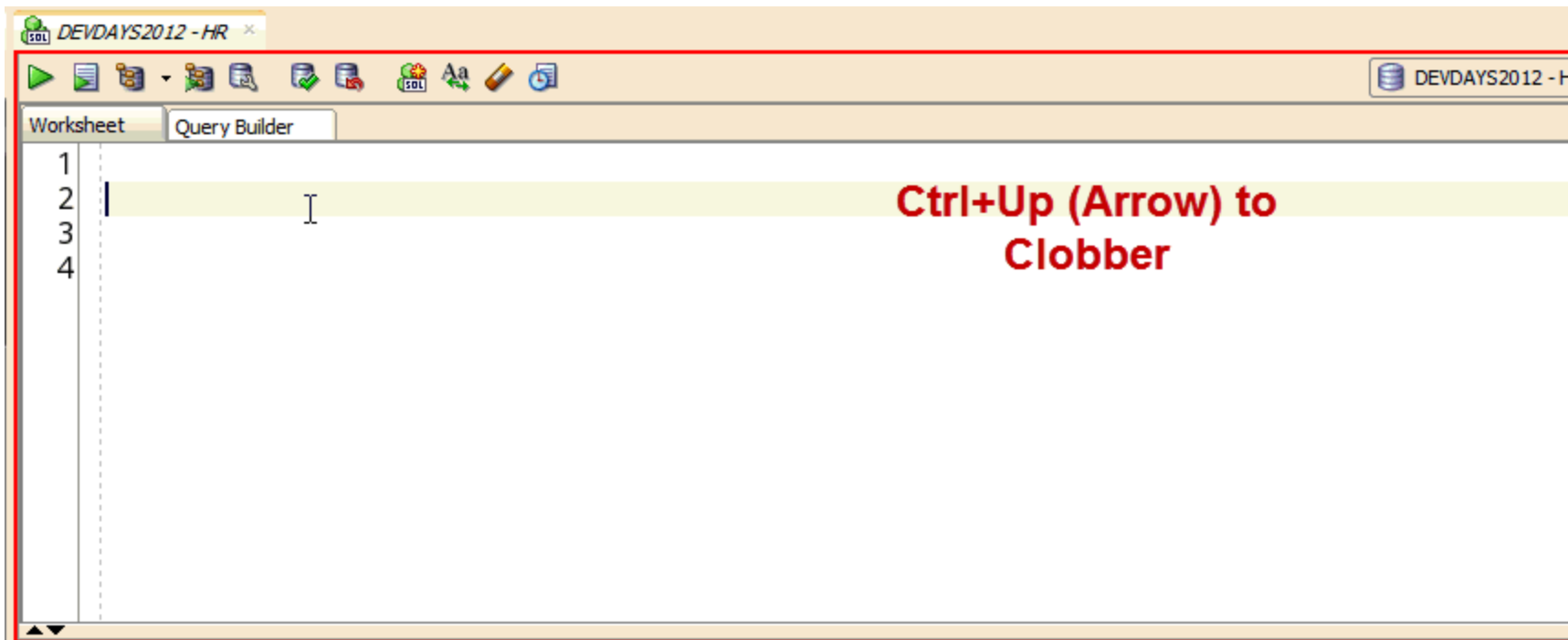




Your Best Queries? Originally written by...

Aliens?

SQL History – Not aliens, just code from 6 days ago 😊



In lieu of clicking through SQL History (F8)

2. SQL History Logging: every SQL to DB captured

The screenshot displays the Oracle SQL Developer interface. On the left, the 'Tools' menu is open, and 'SQL History' is highlighted. A red arrow points from this menu item to the 'Statements' tab at the bottom of the window. The 'Statements' tab shows a list of executed SQL statements, with the following table of data:

Sequence	Connection Name	Elapsed	SQL	Parameters
38	hr	2	declare l_line varchar2(2026); l_done number; l_buffer varchar2(2026) := ''; l_lengthbuffer ...	
221	hr	1	select * from hr.employees	
222	hr	4	declare l_line varchar2(2026); l_done number; l_buffer varchar2(2026) := ''; l_lengthbuffer ...	
223	hr	2	SELECT object_type, owner, object_name, null column_name, null data_type PR...	
224	hr	2	select obj_id, number from emp where obj_id = 1 order by obj_id, number	
225	hr	1	begin dbms_utility.expand_sql_text(input_sql_text => :sql, output_sql_text => :x);	
226	hr	4	SELECT 'COLUMN' type, owner, table_name object_name, column_name, column_id, data_type PR...	
227	hr	23	begin dbms_utility.expand_sql_text(input_sql_text => :sql, output_sql_text => :x);	
228	hr	30	begin dbms_utility.expand_sql_text(input_sql_text => :sql, output_sql_text => :x);	
229	hr	125	SELECT object_type, owner, object_name, null column_name, null data_type PR...	
230	hr	126	SELECT 'COLUMN' type, owner, table_name object_name, column_name, column_id, data_type PR...	
231	hr	83	begin dbms_utility.expand_sql_text(input_sql_text => :sql, output_sql_text => :x);	
232	hr	79	select obj_id, number from emp where obj_id = 1 order by obj_id, number	
233	hr	4	select l from emp where l = 1	
234	hr	108	SELECT 'Database' type, owner, object_name, null column_name, null data_type PR...	
235	hr	109	select l from emp where l = 1	

The 'Cell Value' dialog box contains the following PL/SQL code:

```
begin
dbms_utility.expand_sql_text
(input_sql_text => :sql,
output_sql_text => :x );
end;
```

A 'Cancel' button is located at the bottom right of the dialog.



I love it when a plan comes
together!!

Plans/AutoTrace – generate & compare side by side!

SQL Worksheet: History

Worksheet: Query Builder

-- In-Memory Column Store query

```
Select max(lo_ordtotalprice) most_expensive_order From LINEORDER;
```

-- Buffer Cache query with the column store disables via INMEMORY_QUERY parameter

```
Select /*+ NO_INMEMORY */ max(lo_ordtotalprice) most_expensive_order From LINEORDER;
```

Query Result: Autotrace: Autotrace 1: Compare Autotrace with Autotrace 1

SELECT STATEMENT
SORT (AGGREGATE)
TABLE ACCESS UNMEMORY FULL LINEORDER

SELECT STATEMENT
SORT (AGGREGATE)
TABLE ACCESS (FULL) LINEORDER

V\$STATNAME Name	V\$MYSTAT Value Autotrace	V\$MYSTAT Value Autotrace 1
execute count	4	4
enqueue releases	4	3
enqueue requests	4	3
l0 scan CUs columns theoretical max	748	0
l0 scan CUs memcompress for query low	44	0
l0 scan CUs split pieces	62	0
l0 scan rows	2398604	0
l0 scan CUs columns accessed	44	0
l0 scan bytes uncompressed	2285455294	0
l0 scan bytes in-memory	1186069127	0
l0 scan rows projected	2398604	0
l0 scan rows valid	2398604	0
l0 scan segments disk	0	1
non-idle wait count	25	25
no work - consistent read gets	2	178673

Start Page x HR x amy1.sql x HR~2 x HR~3 x

Worksheet

V\$SQL_PLAN.SQL_ID=42cfmqnpqb6k4, V\$SQL_PLAN.CHILD_NUMBER=0
V\$SQL_PLAN.SQL_ID=42cfmqnpqb6k4, V\$SQL_PLAN.CHILD_NUMBER=1
V\$SQL_PLAN.SQL_ID=42cfmqnpqb6k4, V\$SQL_PLAN.CHILD_NUMBER=2

```
SELECT * FROM sh.sales WHERE quantity_sold <> 1;
```

Hit the drop-down control next to Plan Button to access cached plans from v\$sql_plan

Pin Plan, Gen Plan, Right-Click >
Compare for Side By Side View

0.068 seconds

Worksheet Query Builder

```

1 SELECT /*+ QB_NAME(MAINBLK) NO_QUERY_TRANSFORMATION */
2   d.department_name,
3   (
4     SELECT /*+ QB_NAME(CNTBLK) */
5       COUNT(*)
6     FROM
7       employees e
8     WHERE
9       e.department_id = d.department_id
10   ) cnt,
11   (
12     SELECT /*+ QB_NAME(AVGBLK) */
13       AVG(salary)

```

Script Output x Query Result x Autotrace x

SQL HotSpot | 0.068 seconds

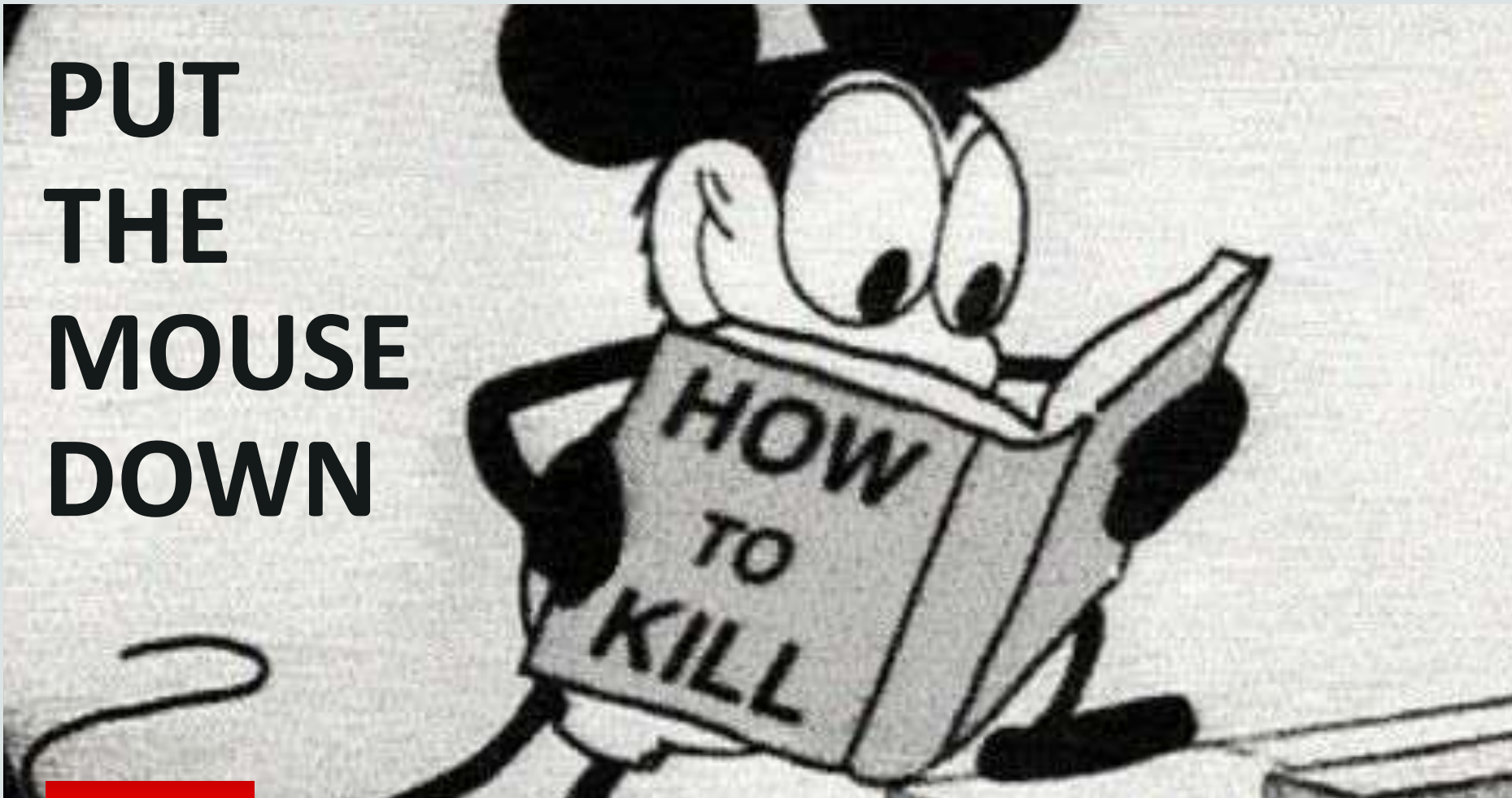
OPERATION	QBLOCK_NAME	OBJECT_NAME	CARDINALITY	LAST_OUTPUT_ROWS
SELECT STATEMENT				27
SORT	CNTBLK		1	27
INDEX	CNTBLK	EMP_DEPARTMENT_IX	10	106
Access Predicates				
E.DEPARTMENT_ID=:B1				
SORT	AVGBLK		1	27
TABLE ACCESS	AVGBLK	EMPLOYEES	10	106
INDEX	AVGBLK	EMP_DEPARTMENT_IX	10	106

V\$STATNAME Name	V\$MYSTAT Value
buffer is not pinned count	16
buffer is pinned count	208
bytes received via SQL*Net from client	3283

■ *enable things you want to see in your plans, like*

QBLOCK_NAME

PUT THE MOUSE DOWN



7 Clicks to go from Grid to Formatted Export to Output

The screenshot displays the Oracle SQL Developer interface. The left pane shows a query in the Query Builder:

```
1 SELECT
2   table_name "TABLE",
3   tablespace_name "TABLESPACE",
4   logging,
5   num_rows,
6   blocks,
7   empty_blocks,
```

The bottom-left pane shows the query results in a grid format:

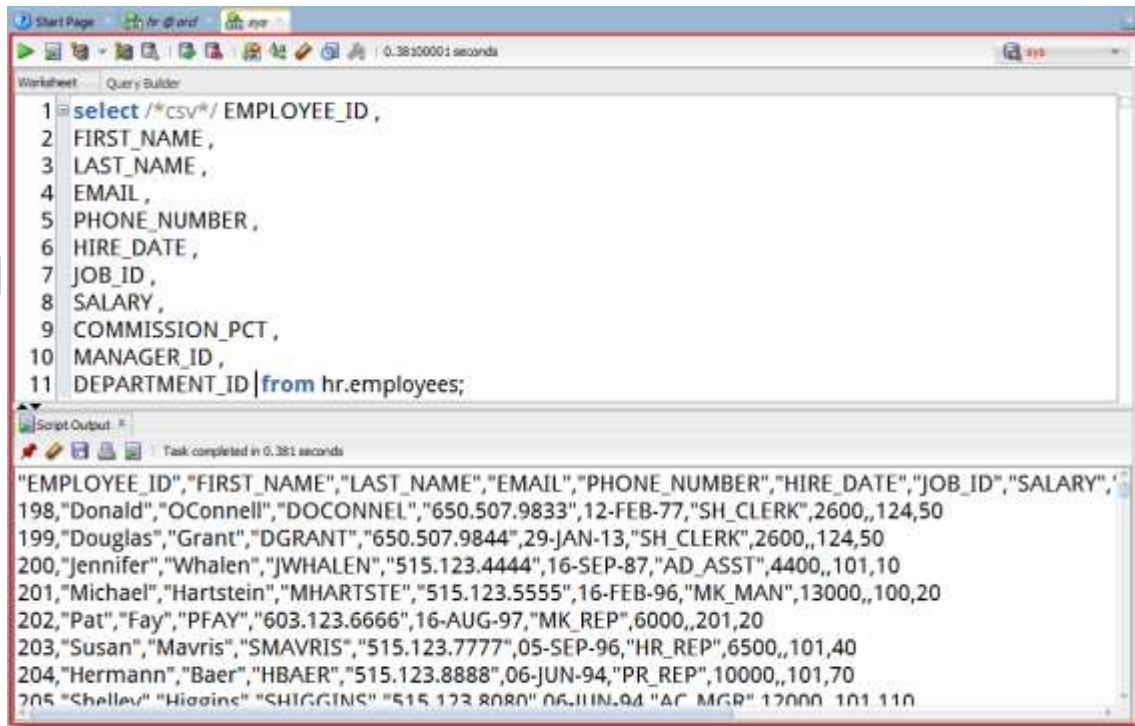
TABLE	TABLESPACE	LOGGING	NUM_ROWS	BLOCKS	EMPTY_BLOCKS
1 COUNTRIES	(null)	(null)	25	(null)	(null)
2 DAVE	USERS	YES	2	5	0
3 DEPARTMENTS	USERS	YES	27	5	0
4 EMPLOYEES	USERS	YES	107	5	0
5 INSERTS	USERS	YES	115	5	0
6 IPSUM	USERS	YES	1	5	0
7 ITUNES MUSIC	USERS	YES	10229	496	0
8 JOBS	USERS	YES	19	5	0
9 JOB_HISTORY	USERS	YES	10	5	0
10 LOCATIONS	USERS	YES	23	5	0
11 MVIEW1	USERS	YES	107	5	0
12 REGIONS	USERS	YES	4	5	0
13 TABLE BLOG QUESTION	USERS	YES	0	0	0
14 UMLAUT	USERS	YES	4	5	0

The right pane shows the query results in a formatted export format:

```
1 "TABLE", "TABLESPACE", "LOGGING", "NUM_ROWS", "BLOCKS"
2 "COUNTRIES", "", "", 25, 15, " N", 07-JUL-16, "
3 "DAVE", "USERS", "YES", 2, 5, 0, 17, " N", 15-SEP-16, "
4 "DEPARTMENTS", "USERS", "YES", 27, 5, 0, 21, " N", 07-J
5 "EMPLOYEES", "USERS", "YES", 107, 5, 0, 69, " N", 31-AU
6 "INSERTS", "USERS", "YES", 115, 5, 0, 3, " N", 13-SEP-1
7 "IPSUM", "USERS", "YES", 1, 5, 0, 732, " N", 31-AUG-16,
8 "ITUNES MUSIC", "USERS", "YES", 10229, 496, 0, 307, "
9 "JOBS", "USERS", "YES", 19, 5, 0, 33, " N", 07-JUL-16, "
10 "JOB_HISTORY", "USERS", "YES", 10, 5, 0, 31, " N", 07-J
11 "LOCATIONS", "USERS", "YES", 23, 5, 0, 49, " N", 07-JUL
12 "MVIEW1", "USERS", "YES", 107, 5, 0, 69, " Y", 15-SEP-1
13 "REGIONS", "USERS", "YES", 4, 5, 0, 14, " N", 07-JUL-16
14 "TABLE BLOG QUESTION", "USERS", "YES", 0, 0, 0, 0, " N
15 "UMLAUT", "USERS", "YES", 4, 5, 0, 3, " N", 03-SEP-16, "
16
```

Format Query Results Directly to CSV, XML, etc

- Add Comment
- Execute via F5 (Script)
- Comment labels match grid export formatter labels
- ONLY works in SQLDev... & SQLcl ☺



The screenshot shows the SQL Developer interface. The top pane displays a SQL query in the 'Query Builder' tab. The query is a SELECT statement with 11 columns: EMPLOYEE_ID, FIRST_NAME, LAST_NAME, EMAIL, PHONE_NUMBER, HIRE_DATE, JOB_ID, SALARY, COMMISSION_PCT, MANAGER_ID, and DEPARTMENT_ID. The FROM clause is 'hr.employees;'. The bottom pane shows the 'Script Output' window, which displays the query results in CSV format. The output starts with a header row containing all column names in quotes, followed by 10 data rows. The first data row is for employee 198, Donald OConnell, a SH_CLERK with salary 124,50. The last data row is for employee 205, Shelley Higgins, a SH_CLERK with salary 110. The status bar at the bottom indicates 'Task completed in 0.381 seconds'.

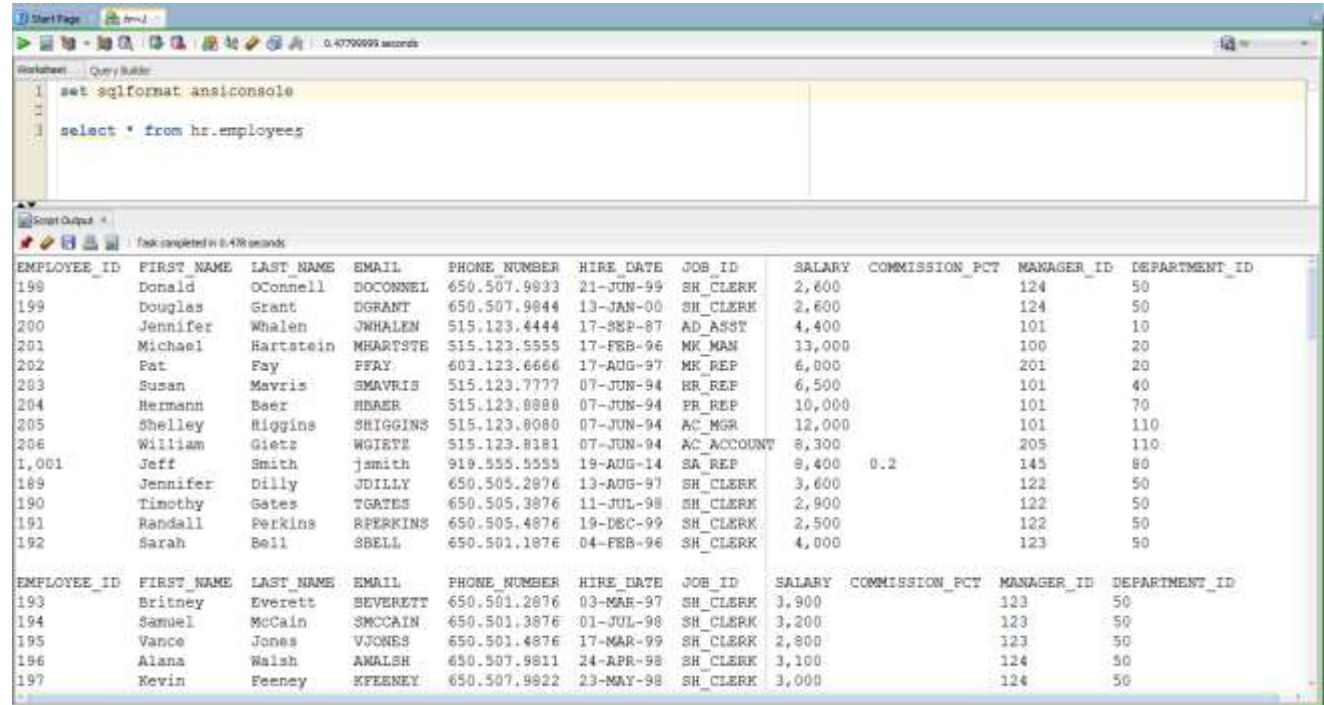
```
1 select /*CSV*/ EMPLOYEE_ID ,  
2 FIRST_NAME ,  
3 LAST_NAME ,  
4 EMAIL ,  
5 PHONE_NUMBER ,  
6 HIRE_DATE ,  
7 JOB_ID ,  
8 SALARY ,  
9 COMMISSION_PCT ,  
10 MANAGER_ID ,  
11 DEPARTMENT_ID |from hr.employees;
```

"EMPLOYEE_ID","FIRST_NAME","LAST_NAME","EMAIL","PHONE_NUMBER","HIRE_DATE","JOB_ID","SALARY",
198,"Donald","OConnell","DOCONNEL","650.507.9833",12-FEB-77,"SH_CLERK",2600,,124,50
199,"Douglas","Grant","DGRANT","650.507.9844",29-JAN-13,"SH_CLERK",2600,,124,50
200,"Jennifer","Whalen","JWHALEN","515.123.4444",16-SEP-87,"AD_ASST",4400,,101,10
201,"Michael","Hartstein","MHARTSTE","515.123.5555",16-FEB-96,"MK_MAN",13000,,100,20
202,"Pat","Fay","PFAY","603.123.6666",16-AUG-97,"MK_REP",6000,,201,20
203,"Susan","Mavris","SMAVRIS","515.123.7777",05-SEP-96,"HR_REP",6500,,101,40
204,"Hermann","Baer","HBAER","515.123.8888",06-JUN-94,"PR_REP",10000,,101,70
205 "Shelley" "Higgins" "SHIGGINS" "515.123.8080" 06-JUN-94 "AC_MGR" 12000 101 110

Format Query Results Directly to CSV, XML, etc

Version 4.1 Updates!

- SET SQLFORMAT
- JSON
- ANSICONSOLE



The screenshot shows the Oracle SQL Developer interface. The top pane is the 'Query Builder' window, which contains the following SQL code:

```
1 set sqlformat ansiconsole
2
3 select * from hr.employees;
```

The bottom pane is the 'Script Output' window, which displays the results of the query in a table format. The table has 11 columns: EMPLOYEE_ID, FIRST_NAME, LAST_NAME, EMAIL, PHONE_NUMBER, HIRE_DATE, JOB_ID, SALARY, COMMISSION_PCT, MANAGER_ID, and DEPARTMENT_ID. The results are displayed in two sections, with the first section showing employees 198 through 192 and the second section showing employees 193 through 197.

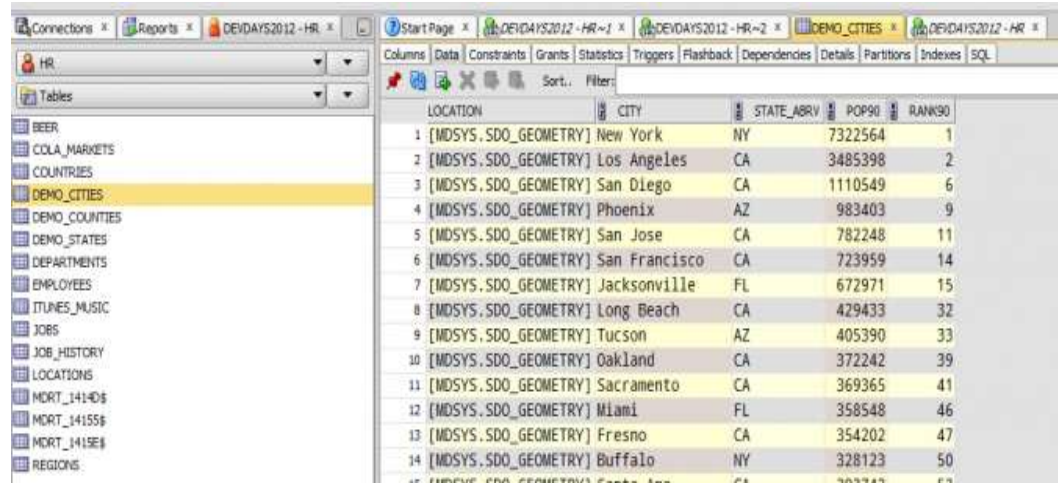
EMPLOYEE_ID	FIRST_NAME	LAST_NAME	EMAIL	PHONE_NUMBER	HIRE_DATE	JOB_ID	SALARY	COMMISSION_PCT	MANAGER_ID	DEPARTMENT_ID
198	Donald	OConnell	DOCONNEL	650.507.9833	21-JUN-99	SH_CLERK	2,600		124	50
199	Douglas	Grant	DGRANT	650.507.9844	13-JAN-00	SH_CLERK	2,600		124	50
200	Jennifer	Whalen	JWHALEN	515.123.4444	17-SEP-87	AD_ASST	4,400		101	10
201	Michael	Hartstein	MHARTSTE	515.123.5555	17-FEB-96	MK_MAN	13,000		100	20
202	Pat	Fay	PFAY	603.123.6666	17-AUG-97	MK_REP	6,000		201	20
203	Susan	Mavris	SMAVRIS	515.123.7777	07-JUN-94	HR_REP	6,500		101	40
204	Hermann	Baer	HBAER	515.123.8888	07-JUN-94	PR_REP	10,000		101	70
205	Shelley	Riggins	SRIGGINS	515.123.9080	07-JUN-94	AC_MGR	12,000		101	110
206	William	Gietz	WGIEZT	515.123.8181	07-JUN-94	AC_ACCOUNT	8,300		205	110
1,001	Jeff	Smith	jsmith	919.555.5555	19-AUG-14	SA_REP	8,400	0.2	145	80
189	Jennifer	Dilly	JDILLY	650.505.2876	13-AUG-97	SH_CLERK	3,600		122	50
190	Timothy	Gates	TGATES	650.505.3876	11-JUL-98	SH_CLERK	2,900		122	50
191	Randall	Perkins	RPERKINS	650.505.4876	19-DEC-99	SH_CLERK	2,500		122	50
192	Sarah	Bell	SBELL	650.501.1876	04-FEB-96	SH_CLERK	4,000		123	50
193	Britney	Everett	BEVERETT	650.501.2876	03-MAR-97	SH_CLERK	3,900		123	50
194	Samuel	McCain	SMCCAIN	650.501.3876	01-JUL-98	SH_CLERK	3,200		123	50
195	Vance	Jones	VJONES	650.501.4876	17-MAR-99	SH_CLERK	2,800		123	50
196	Alana	Walsh	AWALSH	650.507.9811	24-APR-98	SH_CLERK	3,100		124	50
197	Kevin	Feeney	KFEENEY	650.507.9822	23-MAY-98	SH_CLERK	3,000		124	50

A whimsical cartoon map of a fantasy world. A smiling, anthropomorphic map character with a face and a small hat is in the top left corner. The map shows a blue sea, a green island with a small red flag, a large stone pyramid, and a castle on a hill. A pirate ship with a skull and crossbones is in the sea. A blue arrow points towards the pyramid. The text "I can get you there, I bet, I'm the Map!" is overlaid on the map.

I can get you there, I bet,
I'm the Map!

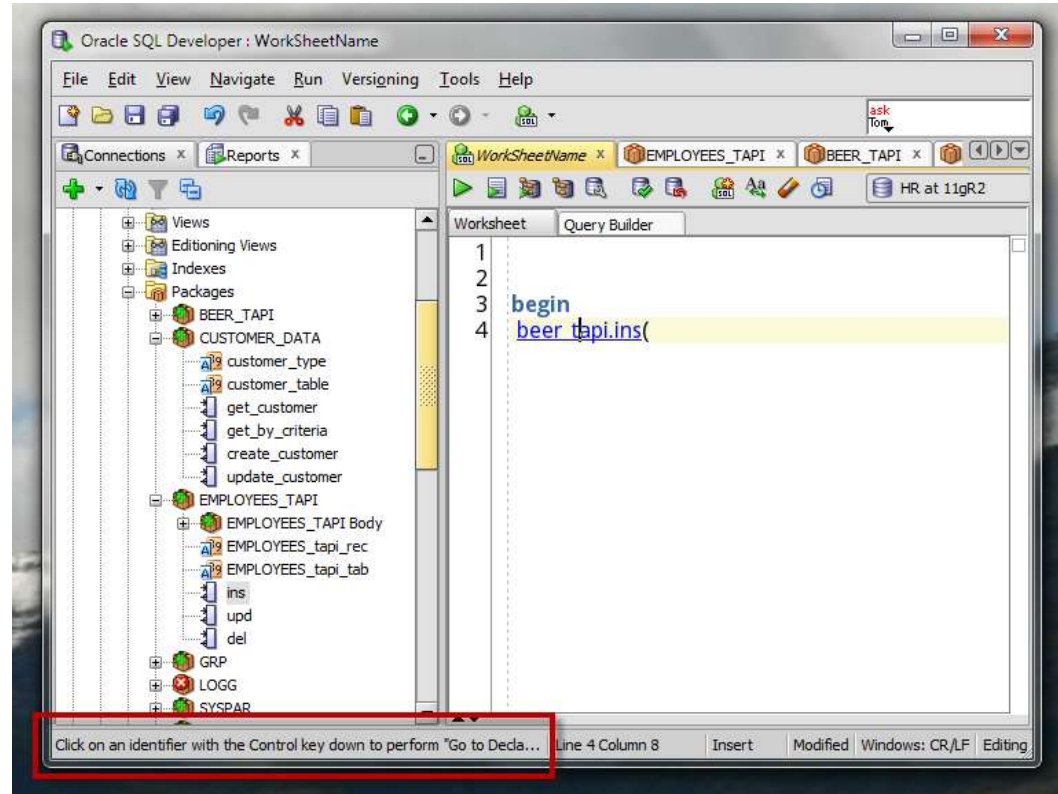
Alternatives to the Tree for Nav #1: Schema Browser

- Right-Click on a Connection
- Drop Down Controls for
 - Schema
 - Object
- Same Functionality as Tree



Three More Ways to Open/Browse Objects

1. Hold down Ctrl...
...Mouse over object
...CLICK to open object
2. SHIFT+F4 (DESC)
3. Find DB Object
Alt+G on object text

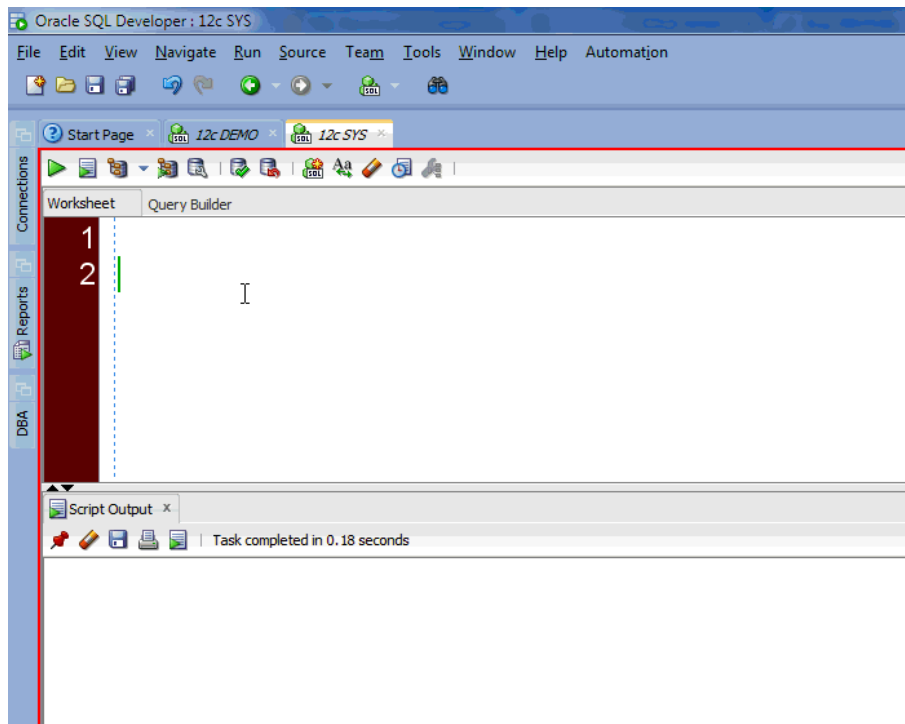




Snippet, Snippet GOOD.

Code Templates...GOLD!

Auto-Replace Now Available (v4.2)



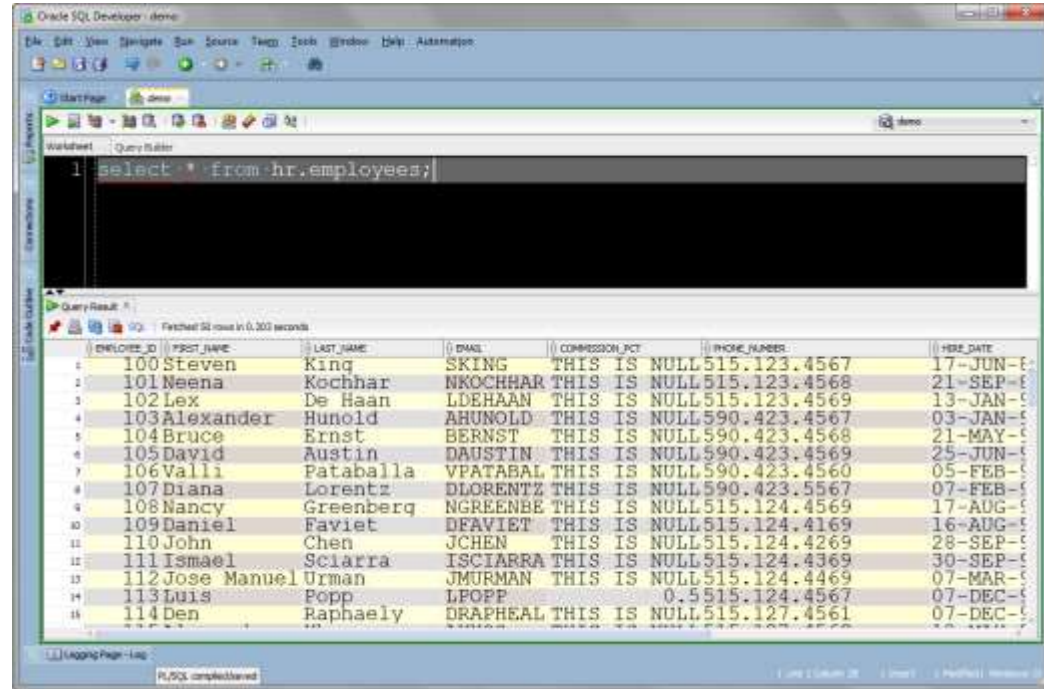
1. Program in Preferences
2. Type name
3. Ctrl+Spacebar OR enable Auto-Replace



Options
Just Ahead

More Preferences To Consider

- Open Object on Single Click
- Code Editor Font
- Grid in checkerboard
- Display NULL As
- Shortcut Keys
- PL/SQL Syntax Colors

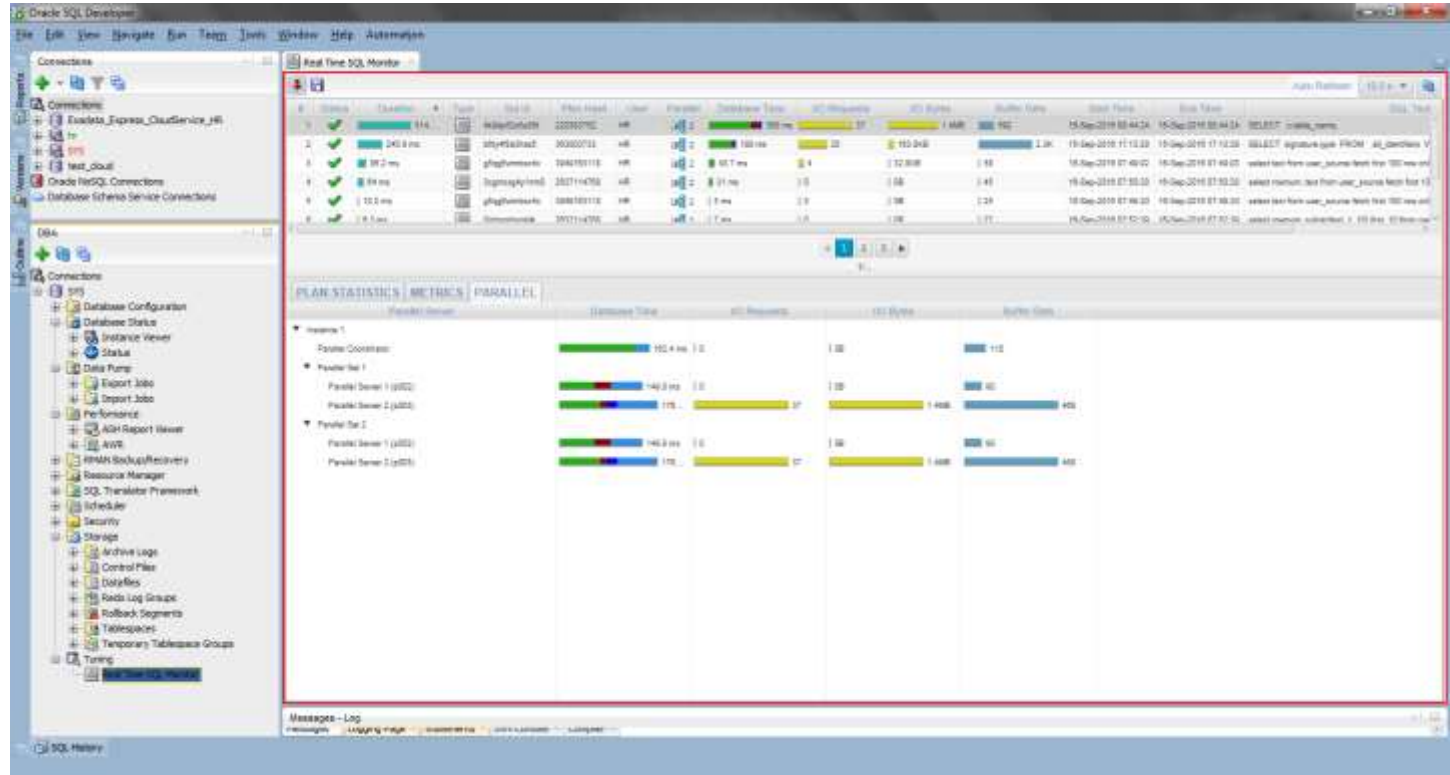


\$200

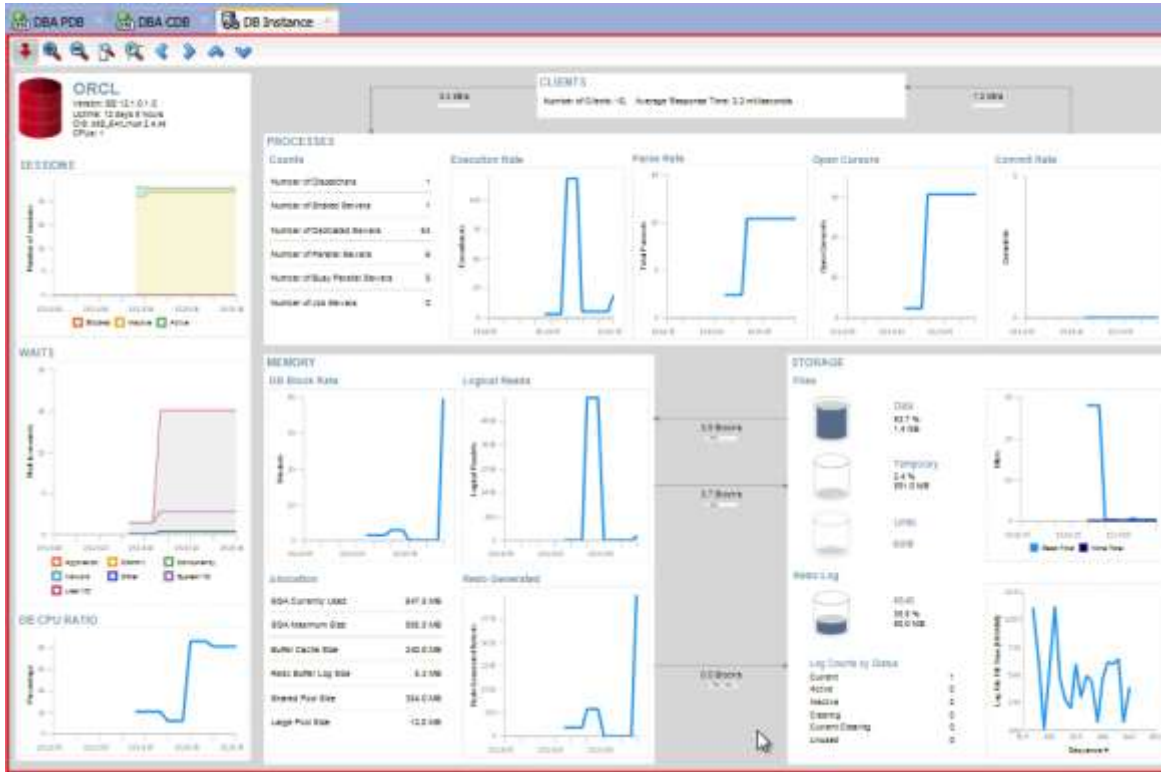
I'll Take Potpourri for \$200, Jeff

Double the functionality in SQL Developer...

- View Menu
- 'DBA'
- Adding new things every release
- Not JUST for developers anymore



Watch Database Activity



- agent-less
- ZERO DB objects
- a 'fancy' report
 - no history
 - no alerts
 - drill-downs

We're making more of these ☺

SQL Developer, On the Web

- Runs out of Oracle REST Data Services (ORDS)
- Oracle Database Cloud Services
- All HTML5/JS
- Phase One:
 - Fully Functional SQL Worksheet
 - Relational Diagrams for your database objects
 - Real Time SQL Monitoring
 - Alert Log Viewer, Storage Info, Basic DB Activity Overview

SQL Developer, In Your Browser

Welcome to SQL Developer

SQL Developer is now in your browser!

Write ad-hoc SQL or scripts, take a look at your instance's status, get insights about your query performance or generate relational diagrams wherever you are and without downloading or installing anything in your computer.

Resources

You can find some videos and tutorials about SQL Developer at the right side:

- [SQL Developer Product Page](#)
- [SQL Developer OTN Forum](#)
- [ORDS Product Page](#)

1/14 Formatting your Oracle Query Results Directly to CSV

ORACLE SQL Developer Release 4.0 is here

Tip of the Day: Take a look at the status of your instance by accessing the Overview page inside the DBA tab.

My Worksheets

Name	Created	Updated
	2016-10-04 11:16:44	2016-10-14 16:46:36
	2016-10-04 11:01:10	2016-10-04 11:16:40
	2016-09-21 10:49:34	2016-09-21 15:14:46

My Diagrams

Name	Updated
Diagram-5	2016-11-10 02:28:29
Diagram_10 (test)	2016-10-27 23:32:31
Diagram_12 (test)	2016-10-27 11:57:10

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SQL Developer SQL Worksheet Features

- Run SQL & PL/SQL
- Explain Plans & DBMS_OUTPUT
- Recover worksheets/code from prior sessions
- SQL History/Recall
- Code Insight
- Formatting and Code Parser/Error Highlighting
- Script & Query Output (text vs grid)
- Grid Exports
- Drag and Drop Code Generation AND MORE!

C##SDW

Tables

Search...

- ▶ A1
- ▶ BAR
- ▶ DATE_RELATED_TESTS
- ▶ DEPT
- ▶ EMP
- ▶ EMP_COPY
- ▶ EMP_COPY2
- ▶ FKTEST1
- ▶ FKTEST2
- ▶ FOO
- ▶ K1
- ▶ KLR1
- ▶ OSDDMW_DIAGRAMS
- ▶ T1
- ▶ TEST_1
- ▶ TEST_TABLE
- ▶ TT
- ▶ TTT
- ▶ TestMix

Worksheet*

```
Expected:
id,
name,
description,
last_update,
global_id,
design_id,
design_name
FROM: sql
design_name bad sql
model_id,
model_name,
subview_id,
subview_name,
parent_id,
diagram_type,
layout
FROM
c##sdw.osddmw_diagrams;
```

Query Result

Script Output

DBMS Output

Explain Plan

Autotrace

SQL History



	ID	NAME	DESCRIPTION	LAST_UPDATE	GLOBAL_ID
1	1	Diagram_test2	preloaded_by_ords_c	2016-09-16T00:24:21.	0D06053E-AC8F-441
2	2	Diagram_test2	preloaded_by_ords_c	2016-08-10T20:06:07.	27B73E6E-EF17-D64
3	7	Diagram_7	Data Modeler Web dia	2016-09-16T21:37:53.	D8C3A8ED-573F-52C
4	8	Diagram_8	Data Modeler Web dia	2016-09-16T21:42:07.	6DD844E6-7782-2FB
5	13	Untitled Diagram-C##	Data Modeler Web dia	2016-10-12T14:55:44.	444CAA41-16A9-26A
6	12	Mv Diagram	(null)	2016-11-09T12:54:11.	332CCB60-1D3B-93E

C##SDW

Tables

Search...

- ▶ A1
- ▶ BAR
- ▶ DATE_RELATED_TESTS
- ▶ DEPT
- ▶ EMP
- ▶ EMP_COPY
- ▶ EMP_COPY2
- ▶ FKTEST1
- ▶ FKTEST2
- ▶ FOO
- ▶ K1
- ▶ KLR1
- ▶ OSDDMW_DIAGRAMS
- ▶ T1
- ▶ TEST_1
- ▶ TEST_TABLE
- ▶ TT
- ▶ TTT
- ▶ TestMix

Worksheet*



```
1 SELECT
2   id,
3   name,
4   description,
5   last_update,
6   global_id,
7   design_id,
8   design_name bad,
9   model_id,
10  model_name,
```

Autotrace

Query Result Script Output DBMS Output Explain Plan Autotrace SQL History



OPERATION	OBJECT_NAME	OBJECT_TYPE	CARDINALITY	COST	PARTITION
SELECT STATEMENT			13	3	
TABLE ACCESS	OSDDMW_DIAGRAMS	TABLE	13	3	

	NAME	VALUE
1	physical reads	2
2	logical read bytes froi	81920
3	Requests to/from clie	120
4	opened cursors cuml	3
5	physical read IO requ	2

```
1 SELECT
2   id,
3   name,
4   description,
5   last_update,
6   global_id,
7   design_id,
8   design_name bad,
9   model_id,
10  model_name,
```

Query Result Script Output DBMS Output Explain Plan Autotrace **SQL History**



Statement

Last Exec

Exec #

select * from emp where empno in (select distinct empno from emp_copy) order by sal desc fetch first 5 rows only

11/28/2016, 2:20:14 PM

2

select * from emp where empno not in (select distinct empno from emp_copy) order by sal desc fetch first 5 rows only

11/28/2016, 2:14:29 PM

1

select * from emp

11/28/2016, 2:10:53 PM

6

```
SELECT
  empno,
  hiredate,
  sal
```

11/14/2016, 11:26:51 AM

1

```
FROM
  c##sdw.emp
```

```
select deptno, floor(avg(sal))
from emp
group by deptno
order by 2 desc
fetch first 2 rows only
```

11/4/2016, 11:17:57 AM

1

CW#SDW

Packages

Search

EBA_OTB

(*) TEST_STATU

(*) TEST_STATU

(*) TEST_STATU

(*) TEST_STATU

f F_TEST_STA

f F_TEST_STA

f F_TEST_STA

f F_TEST_STA

(*) QUESTION_T

(*) QUESTION_T

(*) SCORE_MOD

(*) SCORE_MOD

(*) SCORE_MOD

(*) SCORE_MOD

f CREATE_TEST

f CREATE_QUESTION

f CREATE_QUESTION

f CREATE_ANSWER

f CREATE_ANSWER

F_TEST_STATUS_AVAILABLE

F_TEST_STATUS_OPEN

F_TEST_STATUS_FINISHED

F_TEST_STATUS_UNAVAILABLE

CREATE_TEST

CREATE_QUESTION

CREATE_QUESTION

CREATE_ANSWER

P_USERNAME

P_PASSWORD

P_TITLE

P_DESCRIPTION

P_TIME_LIMIT

P_AVAILABLE_FROM

P_AVAILABLE_UI

```
10 1. p_create_by
11 BEGIN
12 1_return_value :=
13  p_username
14  p_password
15  p_title
```

< December 2016 >

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Today

hh:mm a

Now

Reset

Insert code into worksheet

Cancel

SQL Developer Data Modeling v1 Features

- Create any combination of objects
- Create one or more diagrams
 - preview diagrams
 - search diagrams
- View all metadata/properties of object
- Generate DDL

Resources

OTN – SQL Developer

– [Forums](#)

– [By Example Tutorials](#)

– [My Tips & Tricks Blog](#)

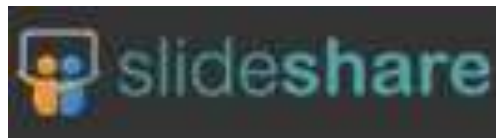
The Tips in Blog Format

- [Customize Preferences](#)
- [Recall SQL History via keyboard](#)
- [Script Output in CSV, HTML, ...](#)
- [Schema Browser](#)
- [Ctrl+Click, Shift+F4, Object Search](#)
- [XML Extensions](#)
- [All of my #SQLDev Posts :\)](#)



BY [THATJEFFSMITH](#)

I'm a Product Manager at Oracle for Oracle SQL Developer.



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