SQL Developer Basics that increase your Performance

Corrected version
2018-09-12

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its-people GmbH

Sabine Heimsath (@oraesque)

- Working in IT since 1999
- Self-employed since 2004
- First Oracle version: 8.1.7
- With a soft spot for relational databases, Aardman Animations and Earl Grey tea
- Oracle ACE, DOAG

POUG

My Goals for today

- Everyone should take away 3 things (s)he didn't know before
- Making you curious to research yourself

POUG

SQL Developer Versions

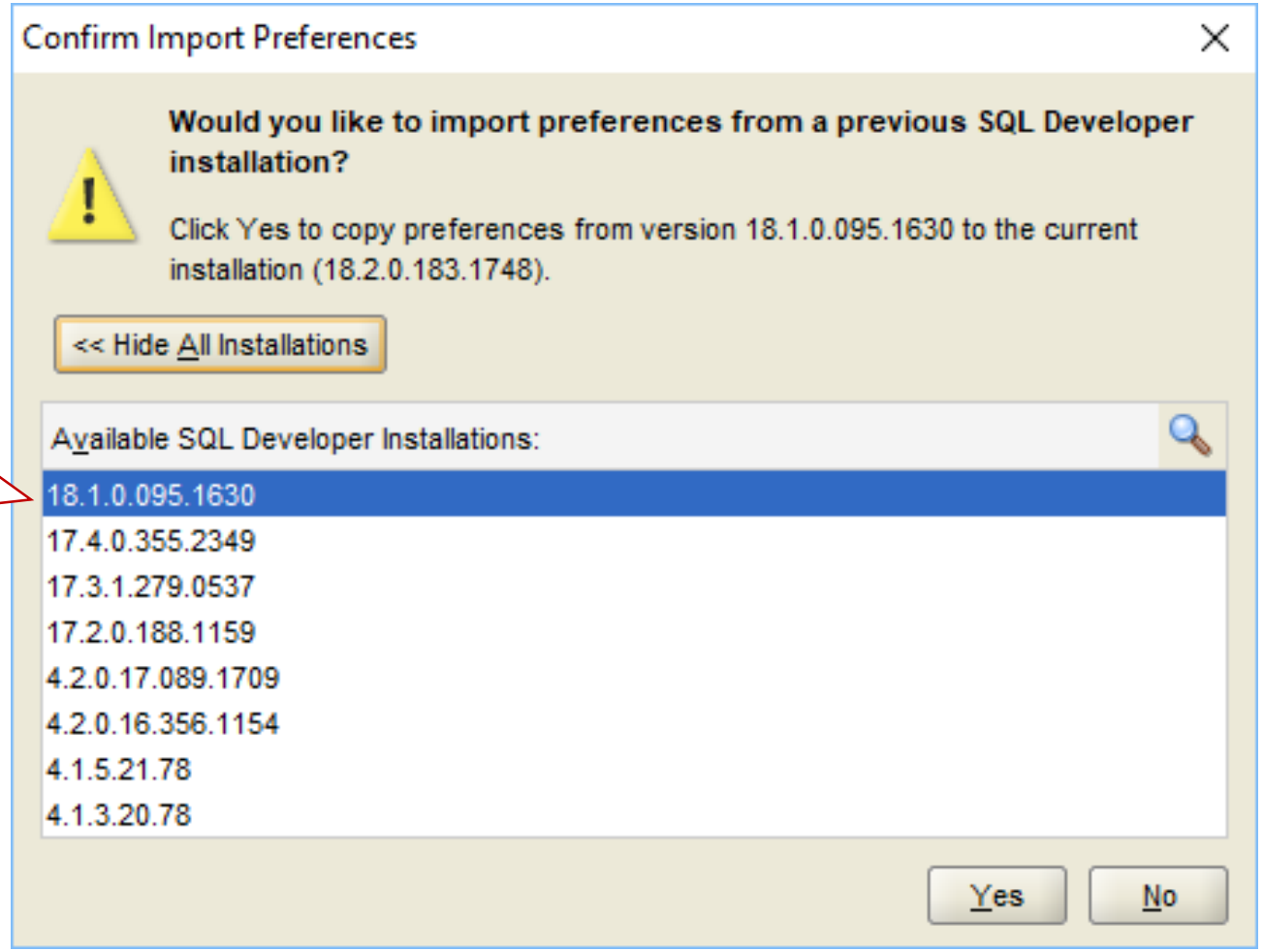
Personal Recommendation:

- Always get the newest download for test driving and giving feedback
- Keep an older version that works for you – just in case

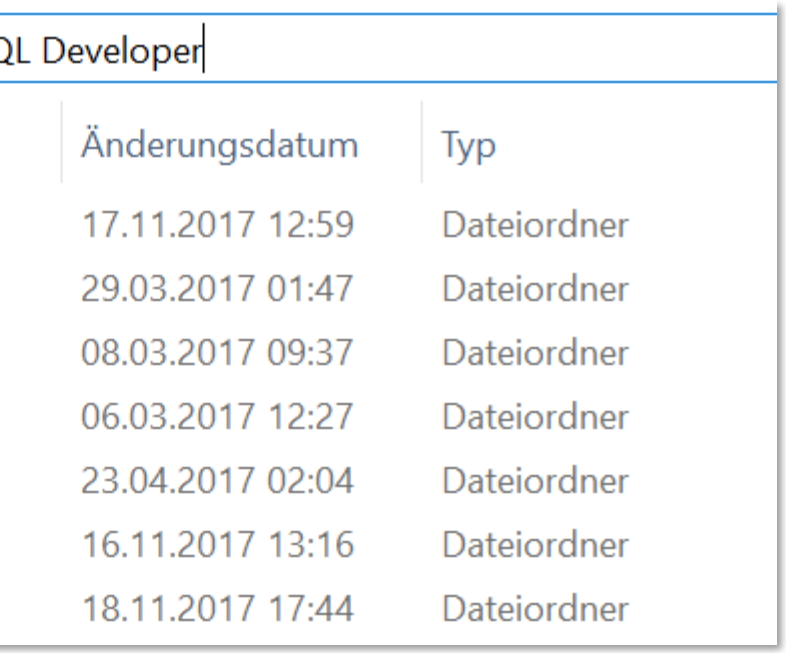
Multiple parallel installations

You can import your settings from previous versions.

So absolutely no excuse for not trying the newest version! ☺



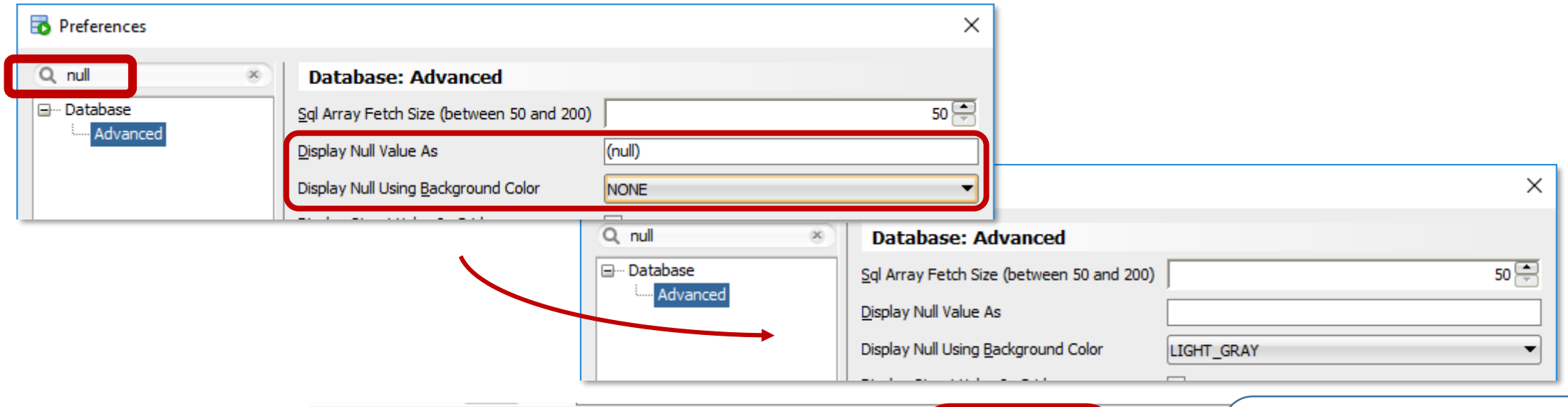
Multiple parallel installations



Shared: SQL History, Reports, File History

Settings I tweak in a new environment

How to display NULL values

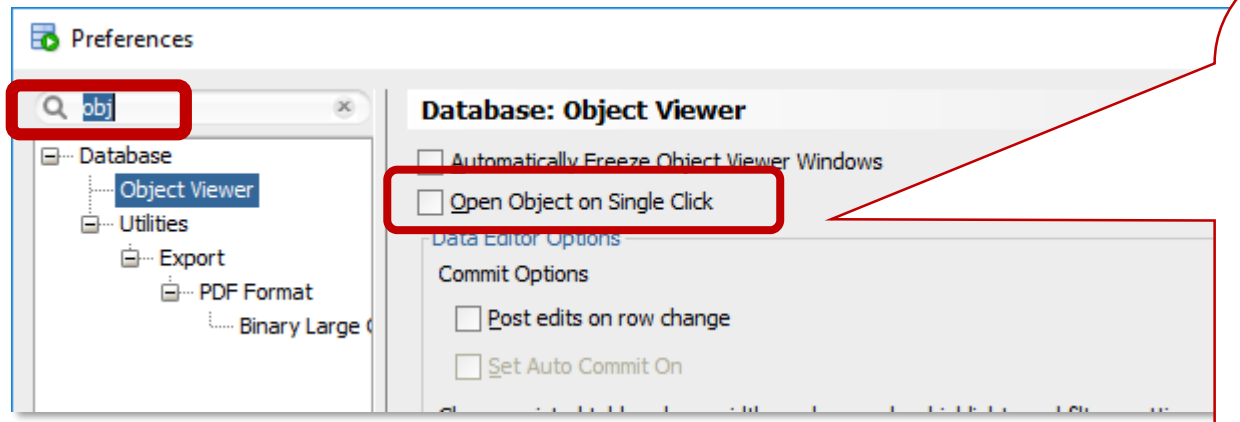


LOCATION_ID	STREET_ADDRESS	POSTAL_CODE	CITY	STATE_PROVINCE	COUNTRY_ID
1000	1297 Via Cola di Rie	00989	Roma		IT
1100	93091 Calle della Testa	10934	Venice		IT
1200	2017 Shinjuku-ku	1689	Tokyo	Tokyo Prefecture	JP
1300	9450 Kamiya-cho	6823	Hiroshima		JP
1400	2014 Jabberwocky Rd	26192	Southlake	Texas	US

Now the values are easy to spot *and* can be distinguished from whitespace

Settings I tweak in a new environment

Open Object on Single or Double Click

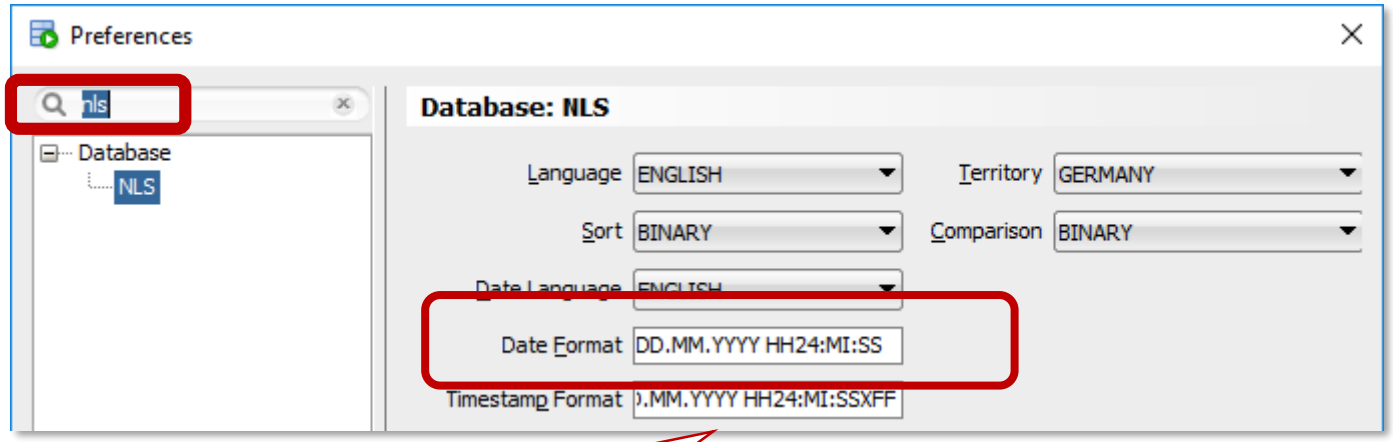


If this option is checked, any table or view in the connection tree is opened immediately in the object viewer.

If you don‘t like that (it's driving me nuts!) uncheck this.

Settings I tweak in a new environment

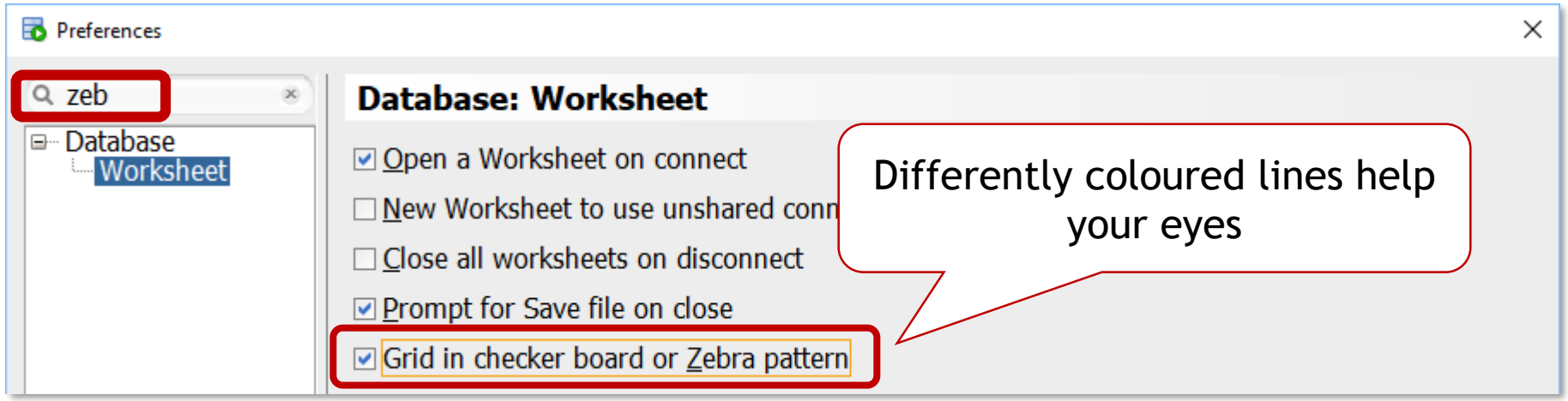
Display Dates

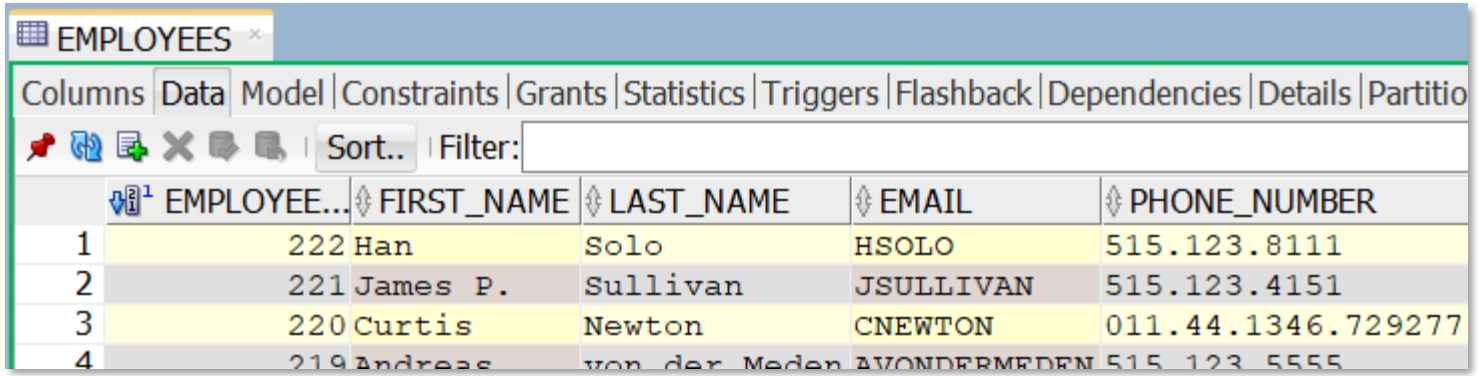


I don't like the standard setting DD.MM.RR for displaying dates.
You can choose you favourite format here.

Other Settings

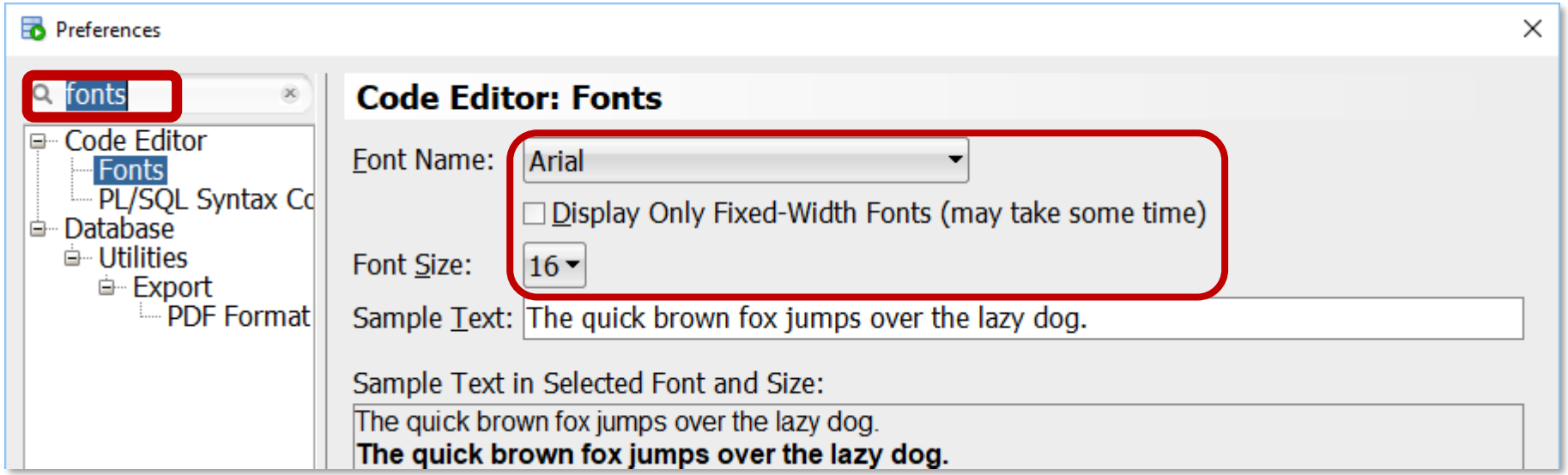
Data Grid: Zebra Pattern

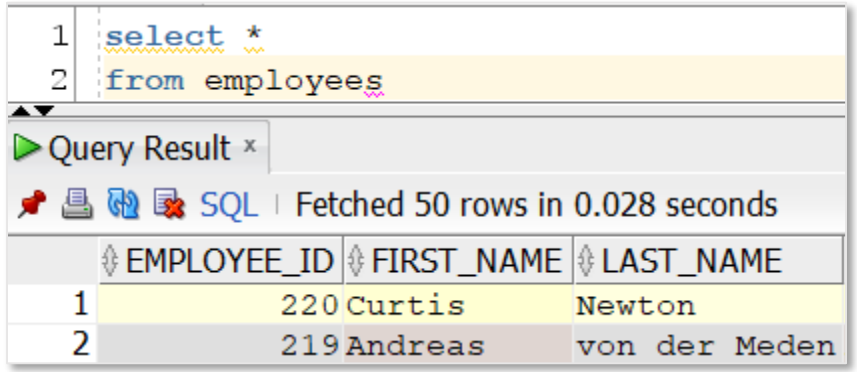


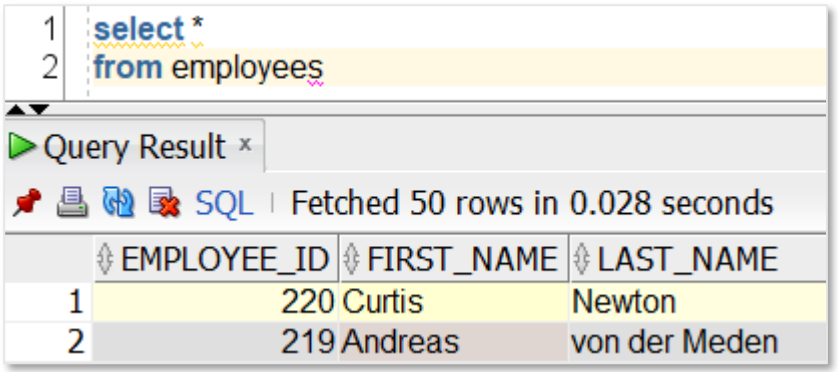


Other Settings

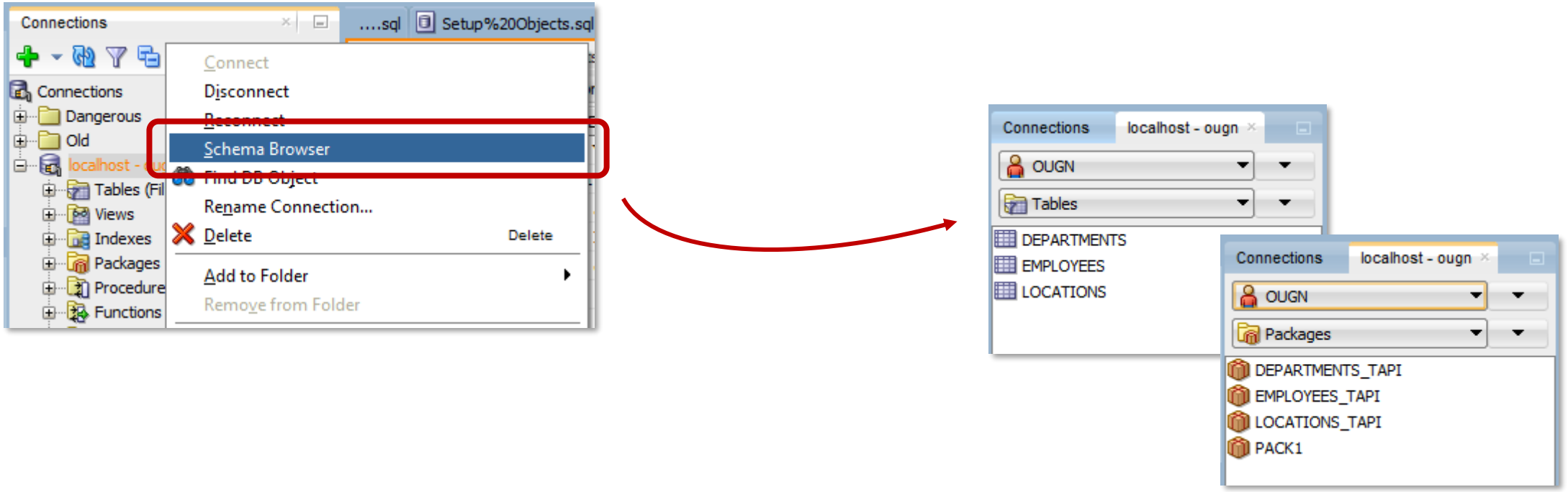
Font size and type





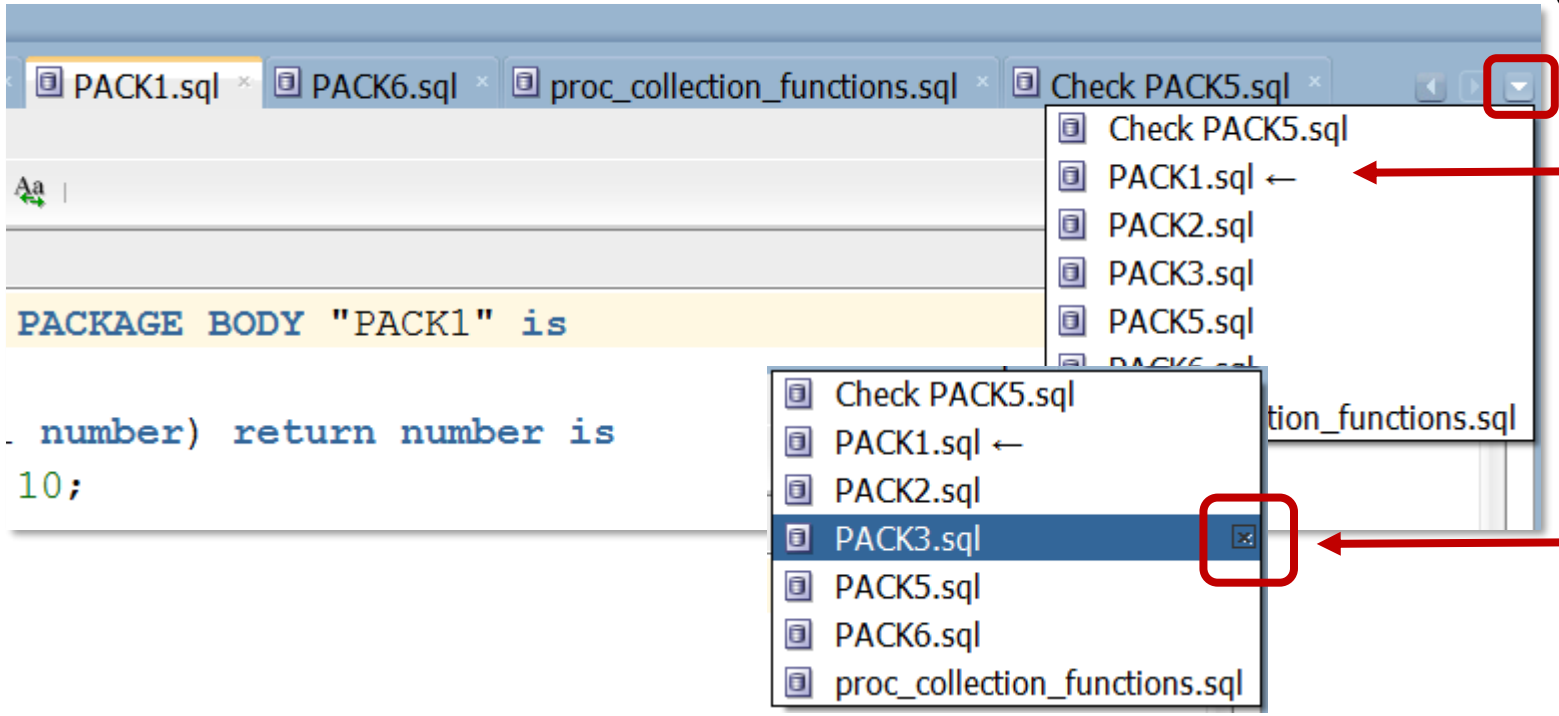


If you don't like the Connection Tree: Use the Schema Browser!



Window Management

You can use the left and right arrows to navigate the tabs
but there is an alternative:

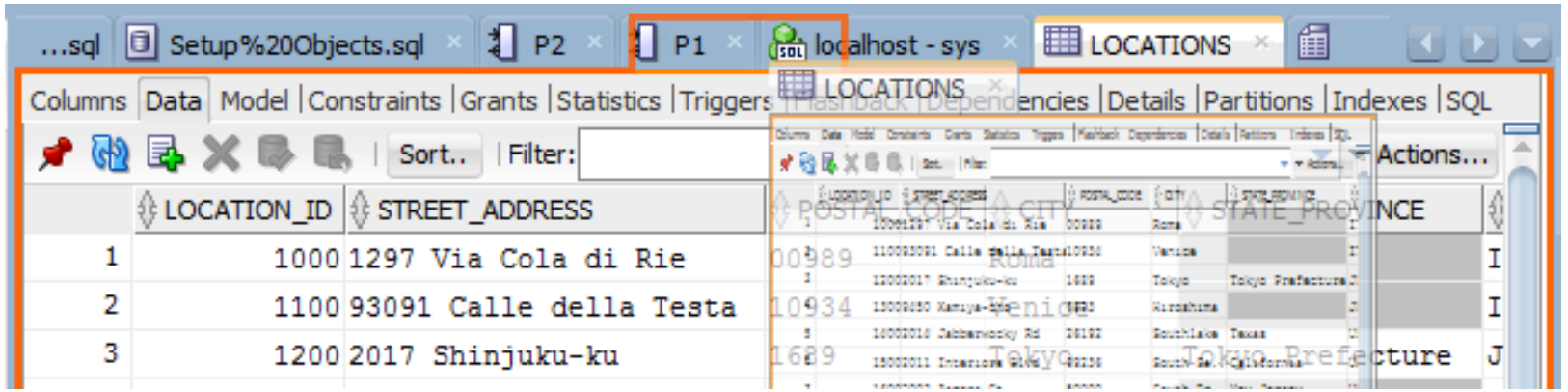


Unobtrusive, but very helpful:
List of Open Windows

Current Window marked
by arrow

Windows can be closed
via
The little x
- faster than via tab!

Window Management

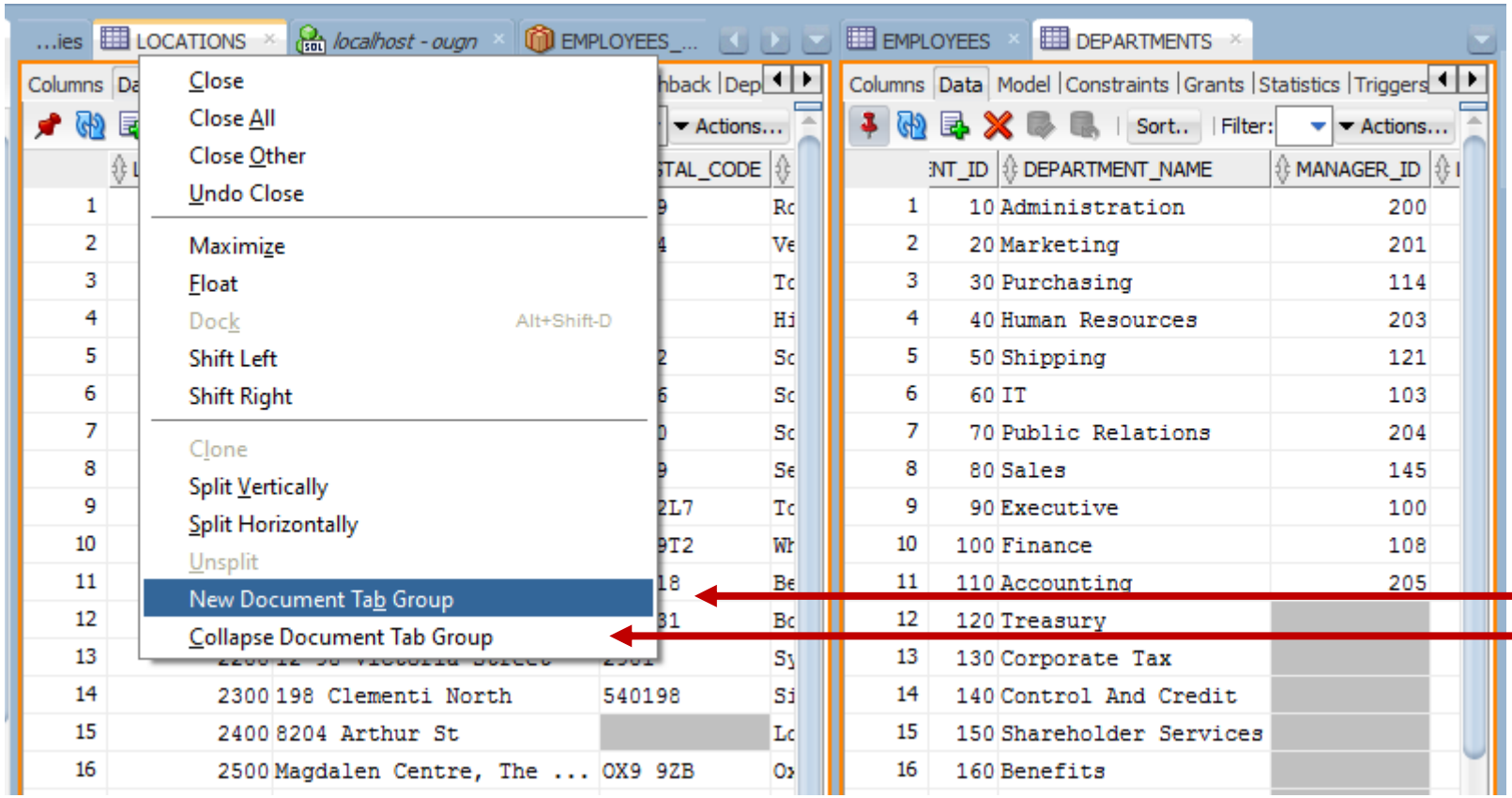


You can drag and drop windows.
The coloured border shows you where the window will be dropped.

You can even undock them (float) and shift them around, maybe to a second screen?

Play around with dragging and dropping windows – if everything is messed up, you can always call Windows → Reset Windows To Factory Settings

Window Management



Display two (or more) windows next to each other

New Document Tab Group moves the current tab to a new panel

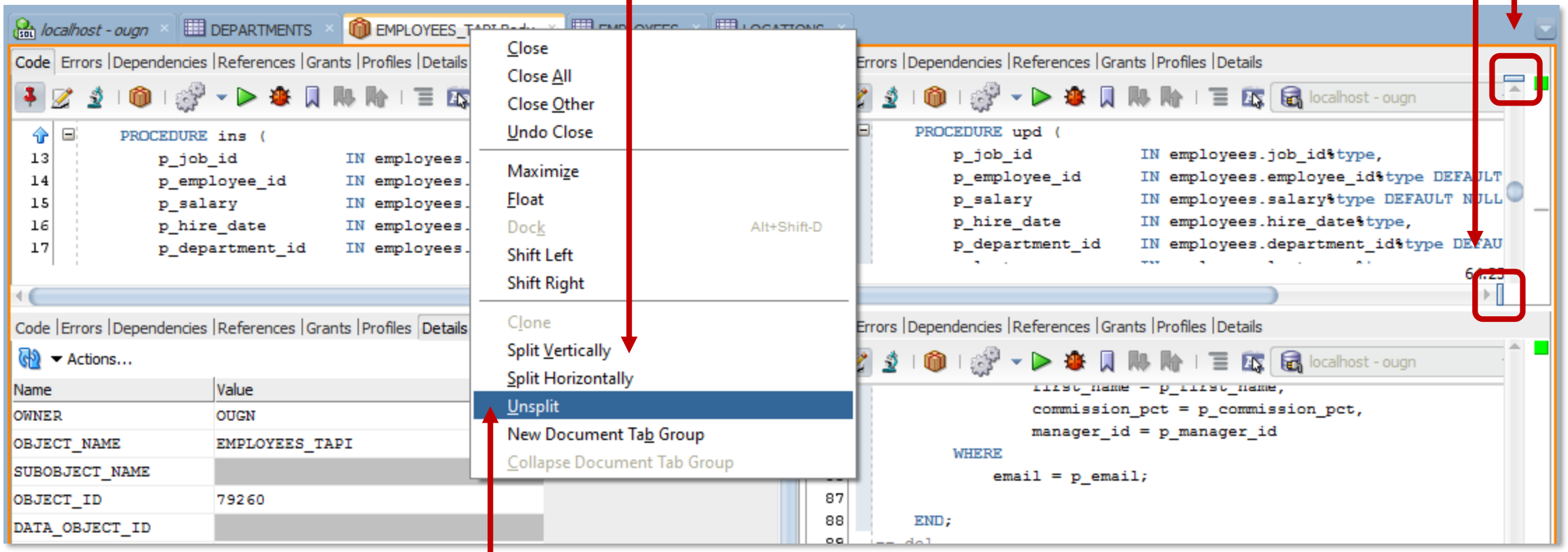
Collapse Document Tab Group moves all tabs back to the original panel

Window Management

You can split windows:
- worksheets and object viewers

Use these little thingies to split the window…

… or the context menu entries

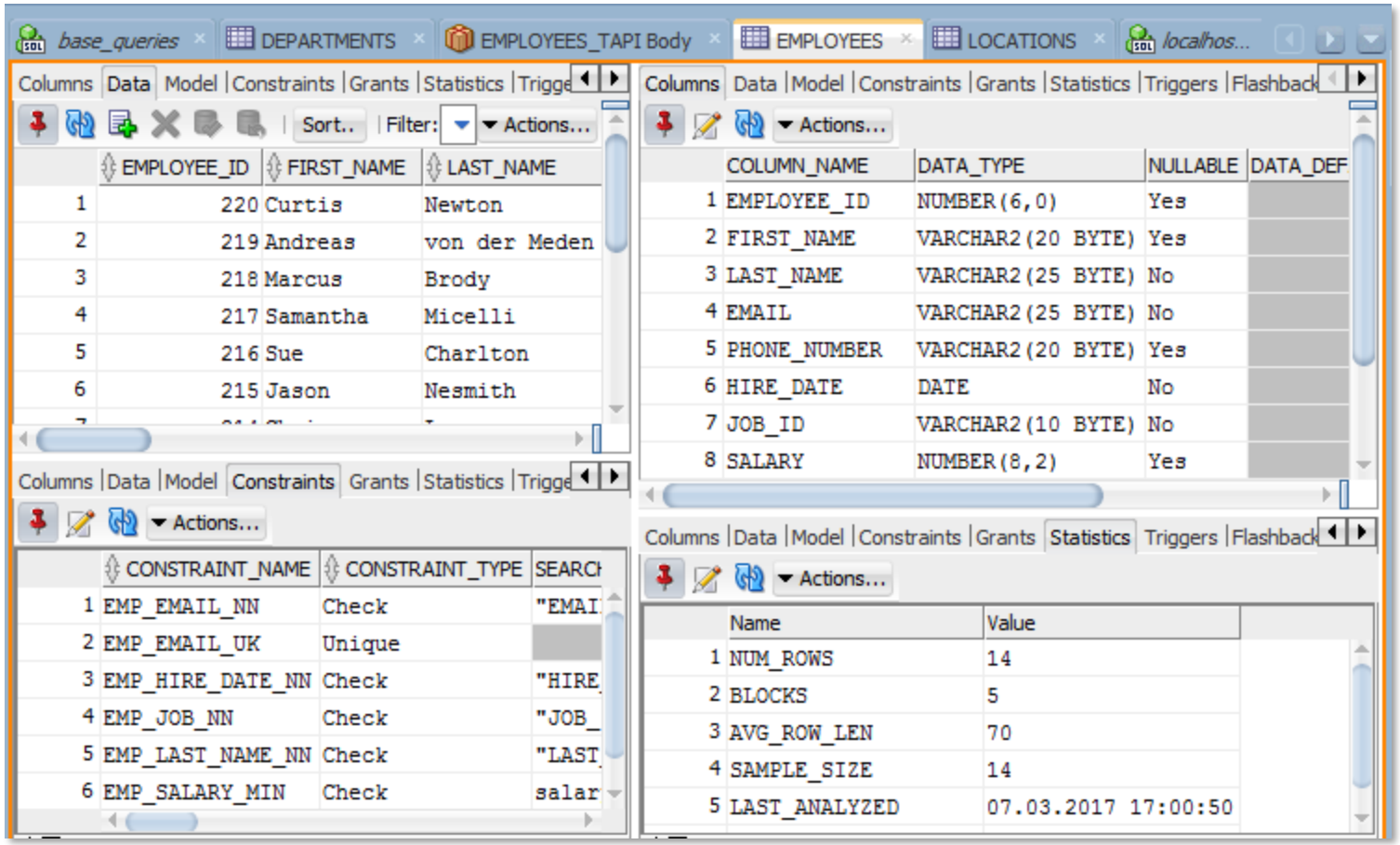


When everything is messed up ‚Unsplit' will save you!

Window Management

You can split windows:
- worksheets and object viewers

Display different types of information about your object (or different filters) next to each other

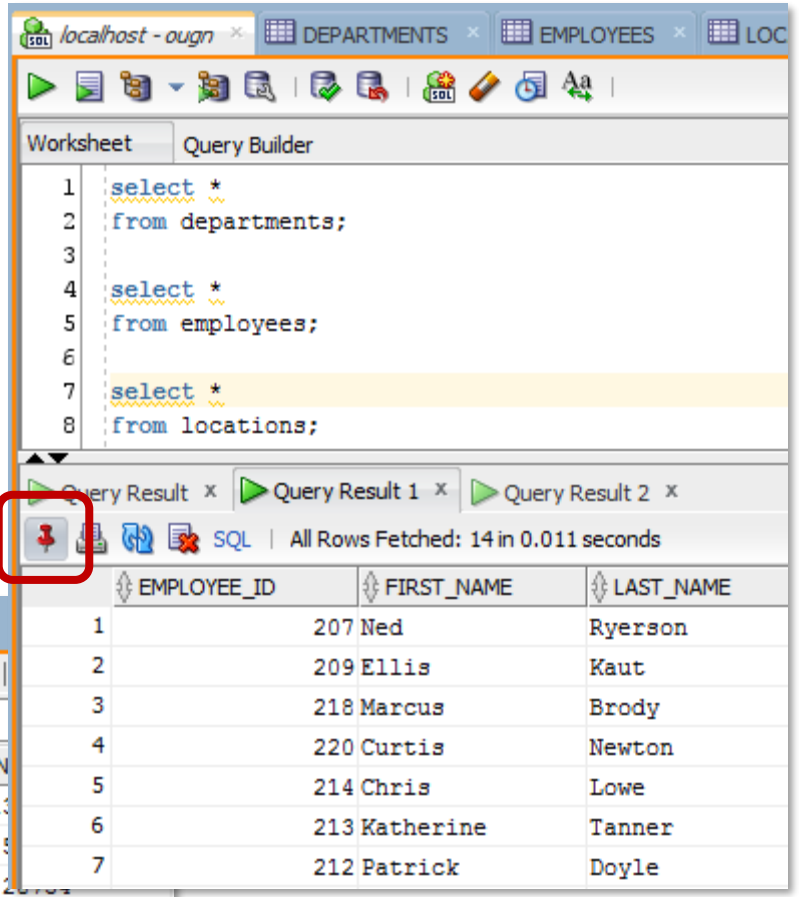


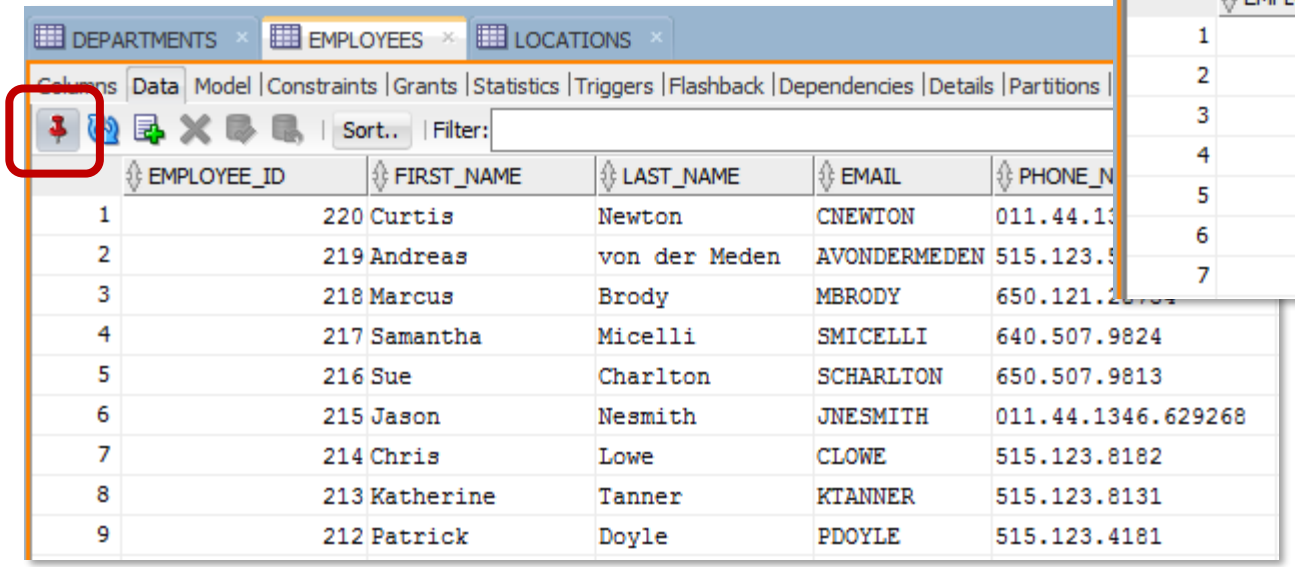
Window Management

You can pin windows to prevent the contents from being replaced.

This works for

- data grids with worksheet results and
- objects viewers





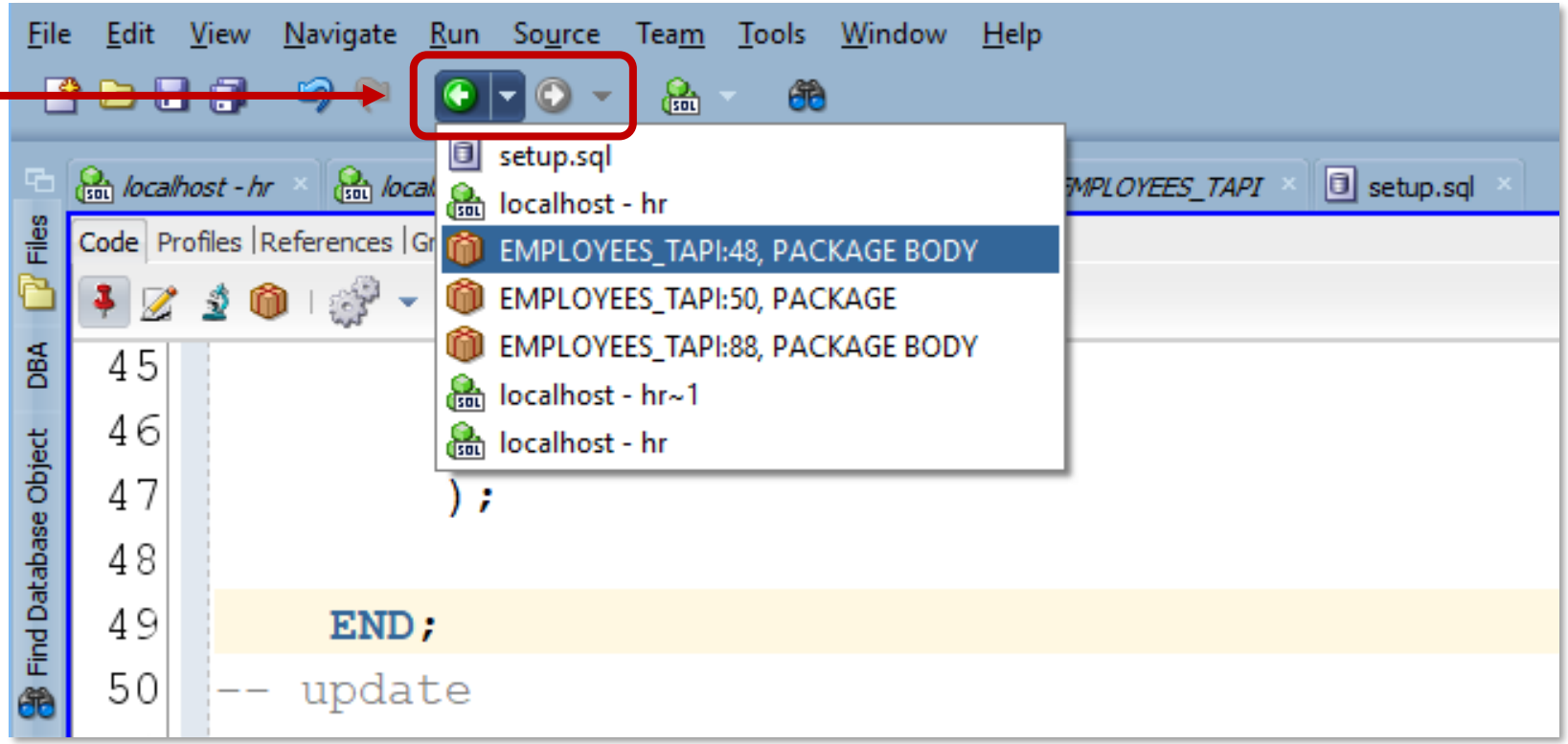
BUT: Keep an eye on your computer's memory!

Window Management

SQL Developer knows where you've been …

You can use the green buttons to go back and forward one step.

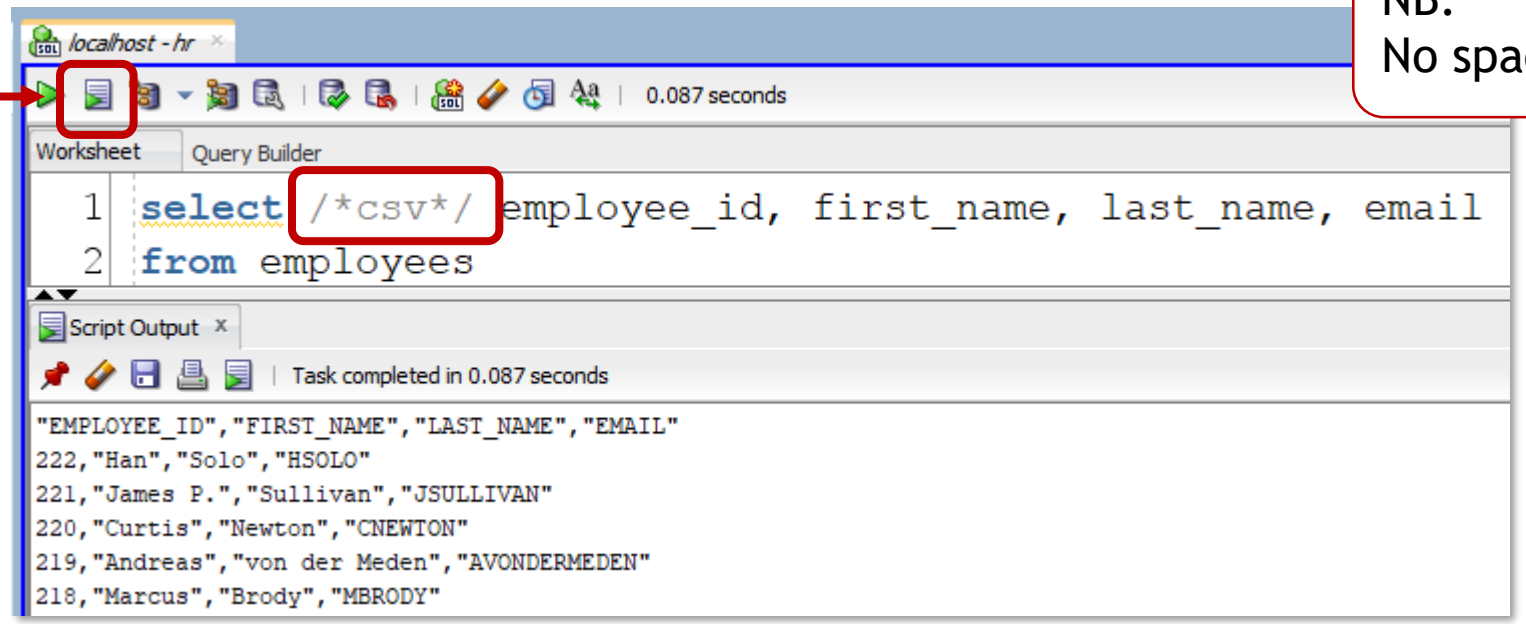
The arrow down shows the history of tabs (including worksheets, files, object viewers, package viewers). A simple click will take you there



Output Formats - CSV

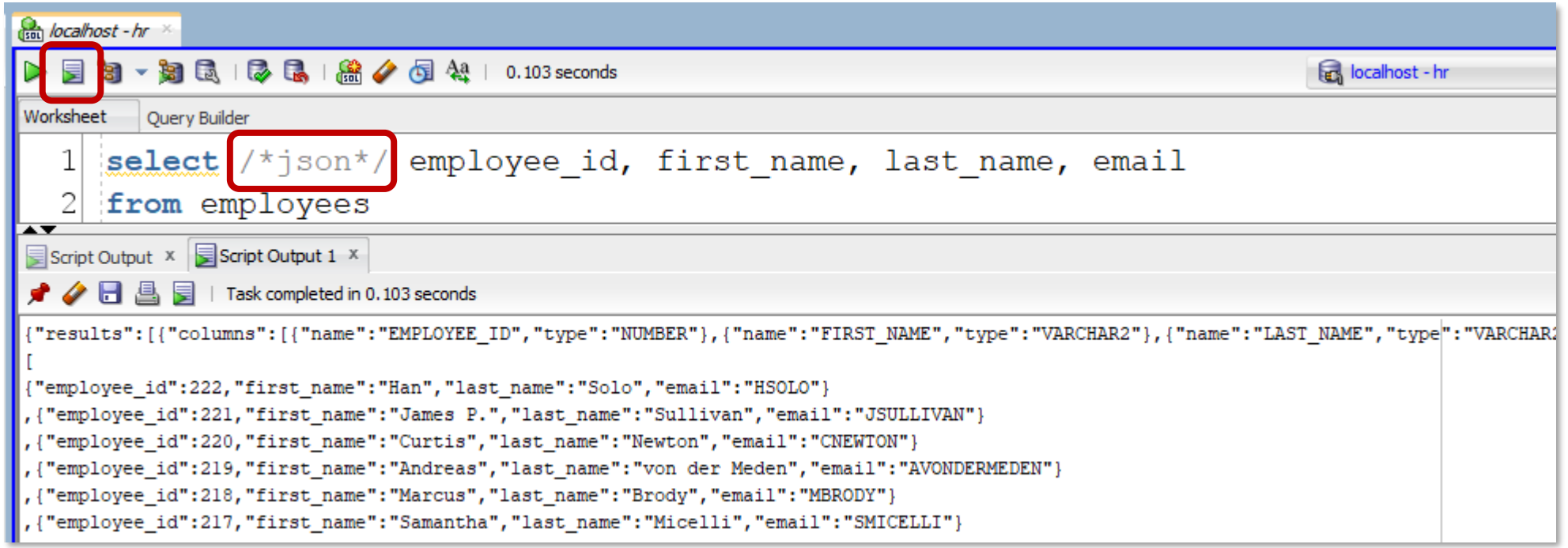
- Use /**/ comments to influence the format of the script output

Excute as script - F5

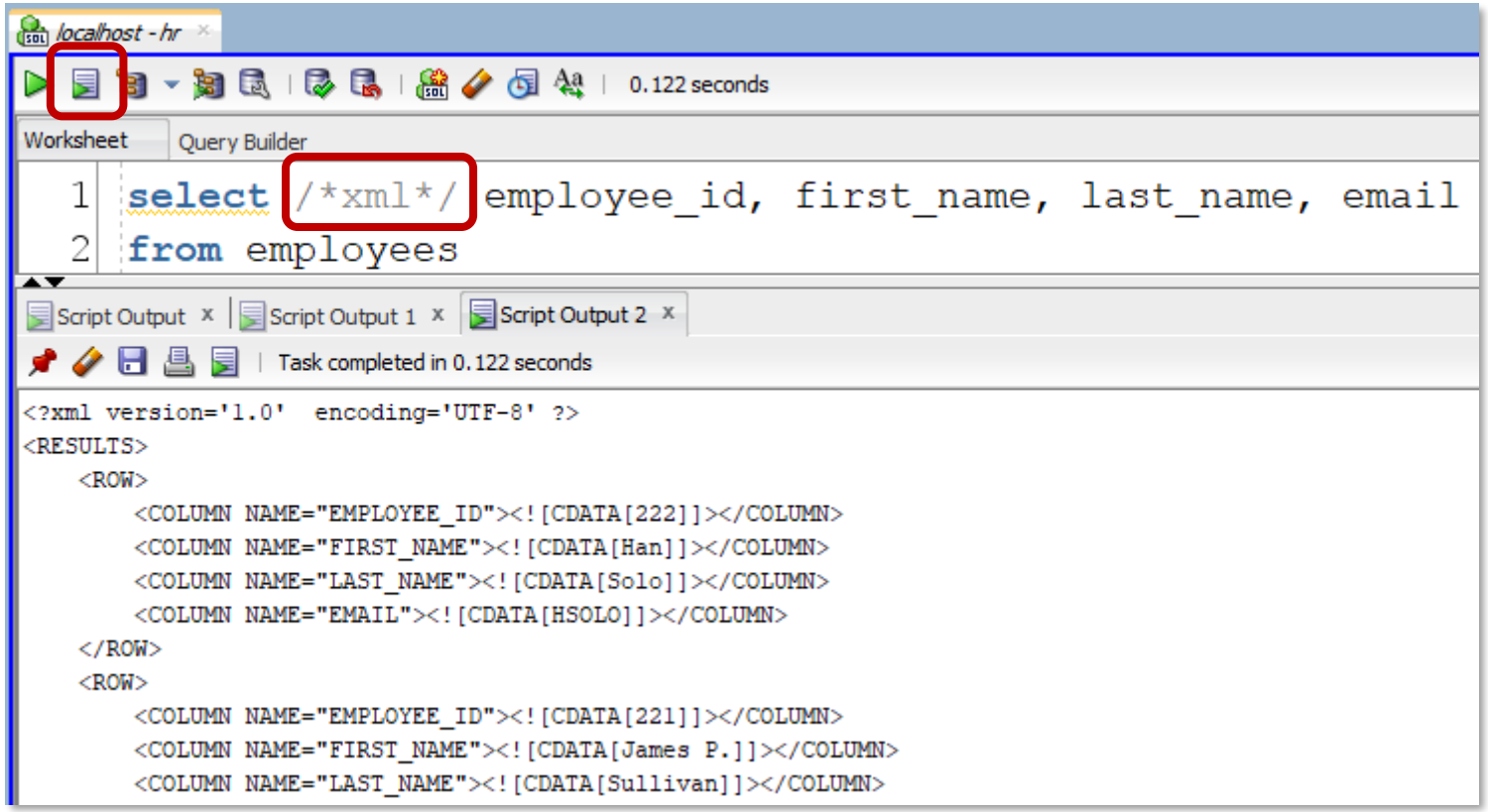


NB:
No spaces inside the /**/!

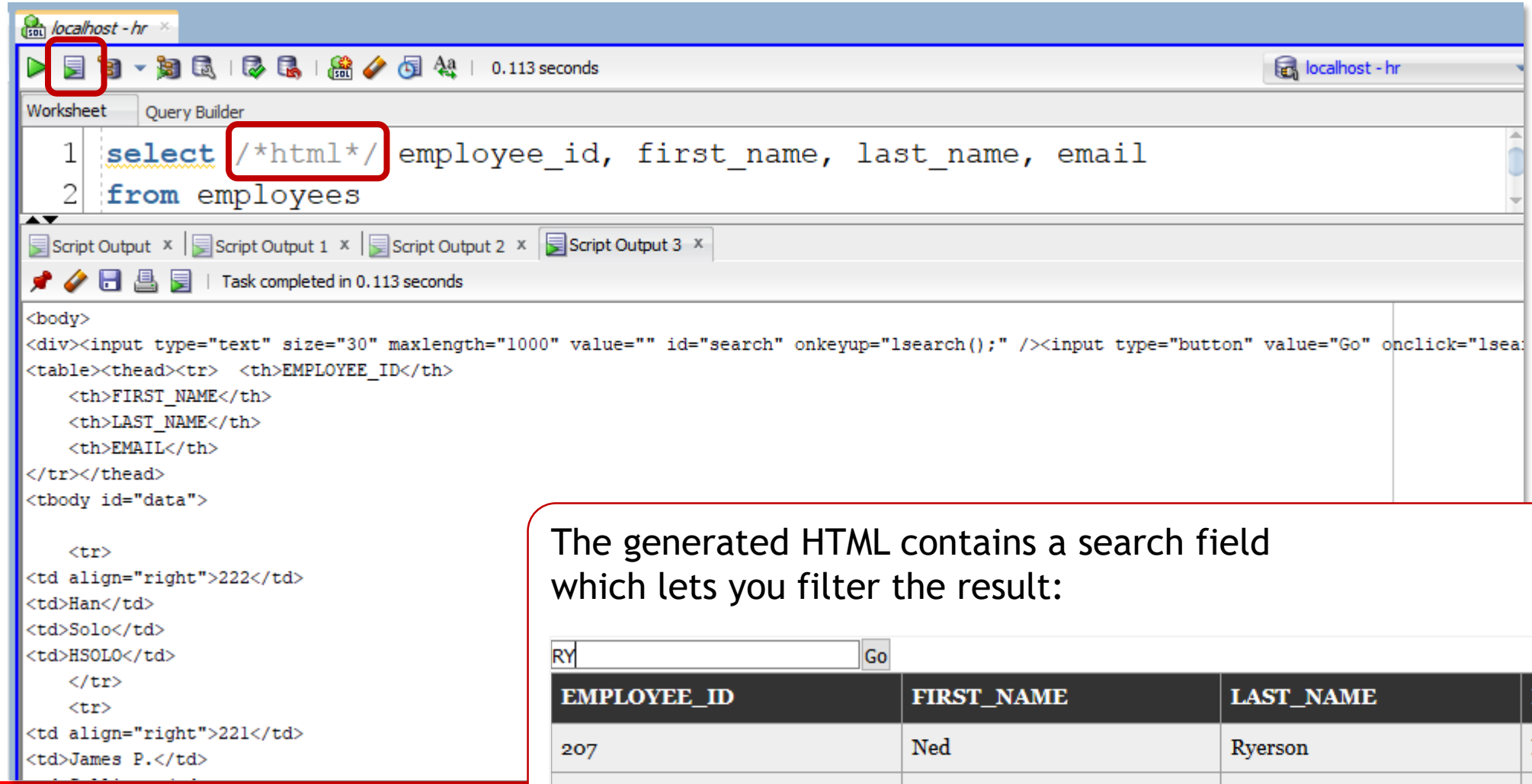
Output Formats - JSON



Output Formats - XML



Output Formats - HTML

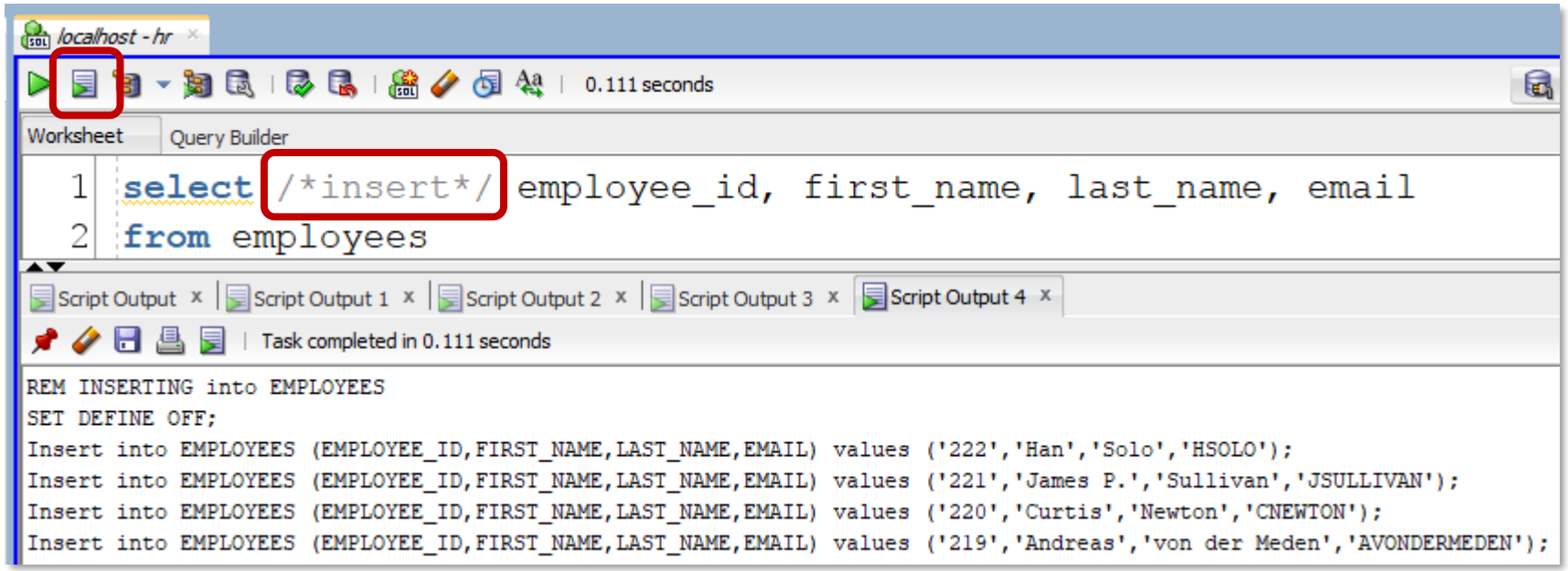


The generated HTML contains a search field which lets you filter the result:

RY Go

EMPLOYEE_ID	FIRST_NAME	LAST_NAME	EMAIL
207	Ned	Ryerson	NRYERSON
127	James	Landry	JLANDRY

Output Formats - Insert



Output Formats - Delimited

Worksheet | Query Builder

```
1 set sqlformat delimited
2 select * from employees
```

Query Result | Script Output

Task completed in 0.089 seconds

```
"EMPLOYEE_ID","FIRST_NAME","LAST_NAME","EMAIL","PHONE_N
220,"Curtis","Newton","CNEWTON","011.44.1346.729277",21
219,"Andreas","von der Meden","AVONDERMEDEN","515.123.5
218,"Marcus","Brody","MBRODY","650.121.28754",
217,"Samantha","Micelli","SMICELLI","640.507.9
```

delimited allows a custom delimiter (since version 18.1)

Worksheet | Query Builder

```
1 set sqlformat delimited |
2 select * from employees
```

Query Result | Script Output | Script Output 1

Task completed in 0.089 seconds

```
"EMPLOYEE_ID"|"FIRST_NAME"|"LAST_NAME"|"EMAIL"|"PHONE_NUMBER"|"HIRE
220|"Curtis"|"Newton"|"CNEWTON"|"011.44.1346.729277"|21.04.2002 00:
219|"Andreas"|"von der Meden"|"AVONDERMEDEN"|"515.123.5555"|17.02.2
218|"Marcus"|"Brody"|"MBRODY"|"650.121.28754"|17.03.2002 00:00:00|'
217|"Samantha"|"Micelli"|"SMICELLI"|"640.507.9824"|23.05.2006 00:00
```

Output Formats – Best Fit

Worksheet | Query Builder

```
1 select * from all_objects
```

Script Output | Task completed in 9.812 seconds

```
OUTLN
OUTLN

OWNER
--------------------------------------------------
OUTLN
OUTLN
```

Instead of changing the format for every single column use
`set sqlformat ansiconsole`

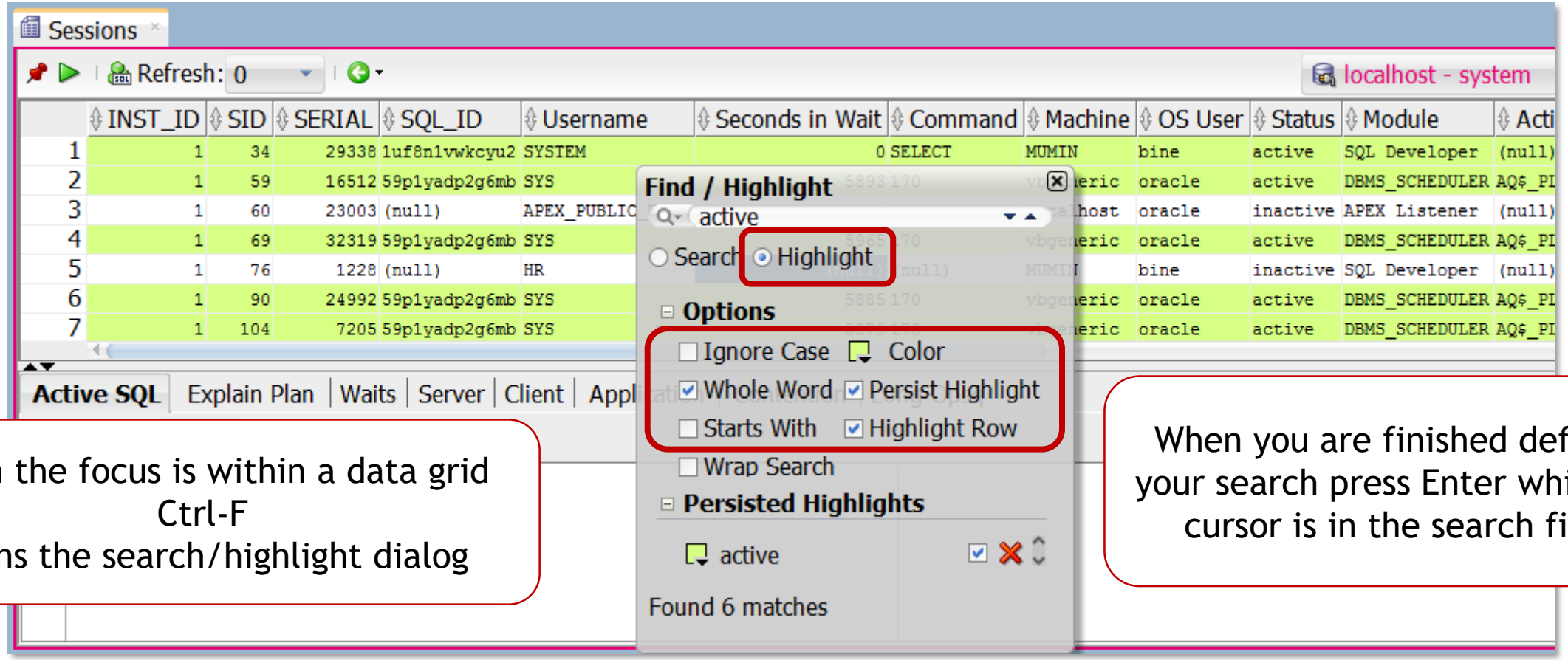
Worksheet | Query Builder

```
1 set sqlformat ansiconsole
2 select * from all_objects
```

Script Output | Task completed in 1.374 seconds

OWNER	OBJECT_NAME	SUBOBJECT_NAME	OBJECT_ID	DATA_OBJECT_ID	OBJECT_TYPE	CREATED
SYS	ORA$BASE		133		EDITION	26.01.2017 13:5
SYS	DUAL		142	142	TABLE	26.01.2017 13:5
PUBLIC	DUAL		143		SYNONYM	26.01.2017 13:5

How to highlight important information



When the focus is within a data grid
Ctrl-F
opens the search/highlight dialog

When you are finished defining your search press Enter while the cursor is in the search field

About the Data Grid Search and Highlight

- The magnifier in the upper left hand corner allows you to limit your search to a certain column
- If you choose 'Persist Highlight' the settings are stored for this *object or report* and the current connection
  (not for *result tabs* of a worksheet)

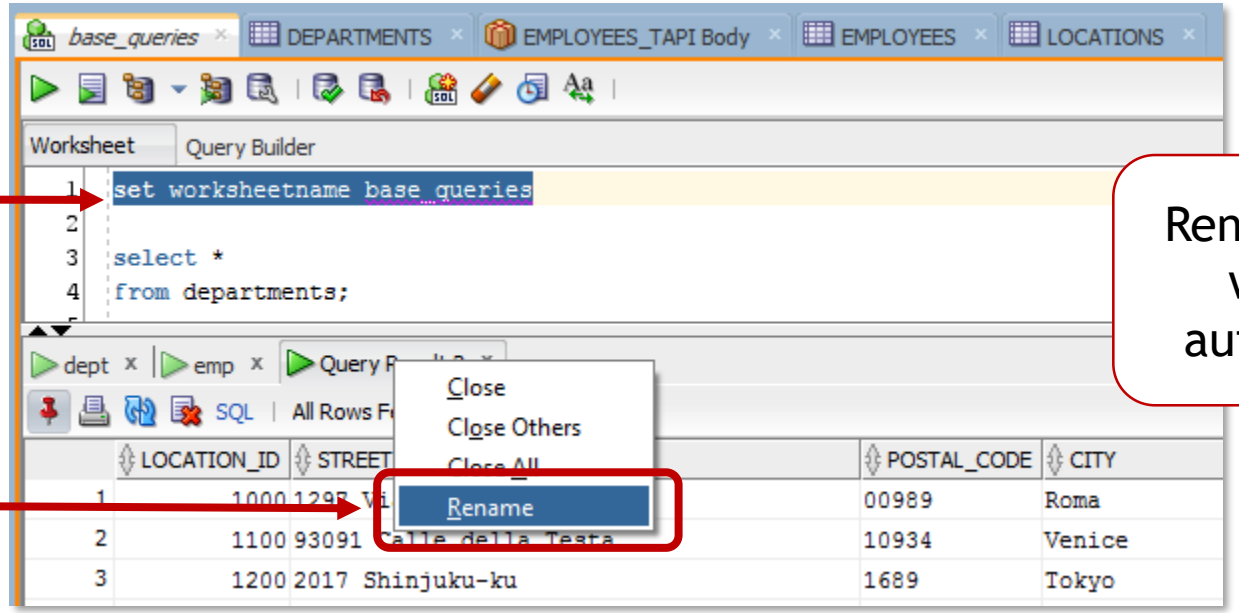
Keep in mind when searching for dates and numbers:

- The search behaves like the 'LIKE' operator, so what you get is a plain text comparison
- You cannot specify < or > comparisons
- When searching for number values, check if comma or dot is used for decimal places

Naming Worksheets and Data Grids

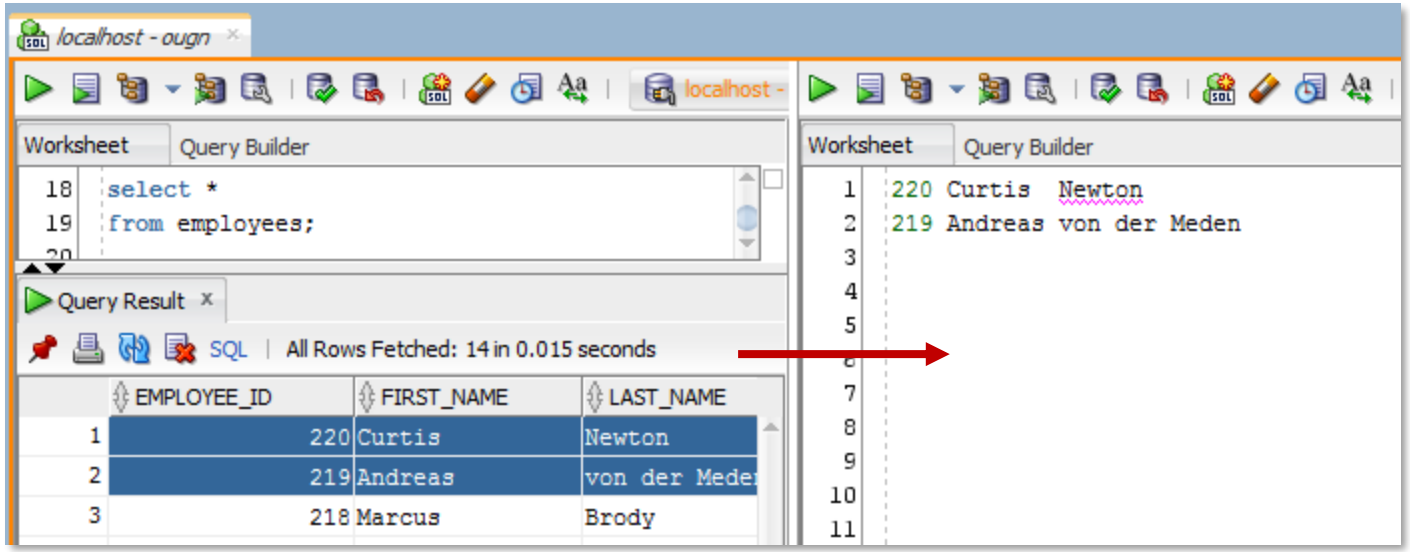
Type
`set worksheetname`
and execute to rename your unsaved worksheet

Right click the result tab you want to rename to open the rename dialog



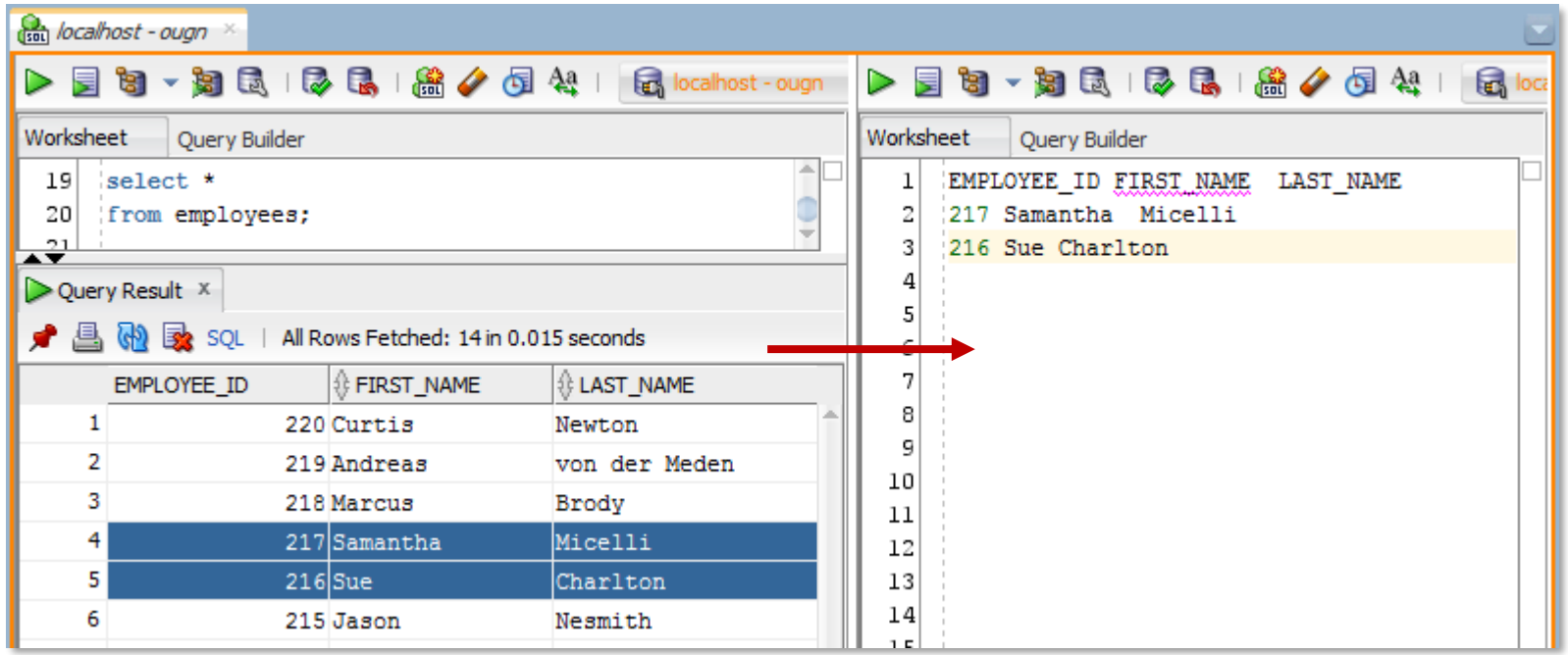
Renaming a tab will pin it automatically

Copying Data



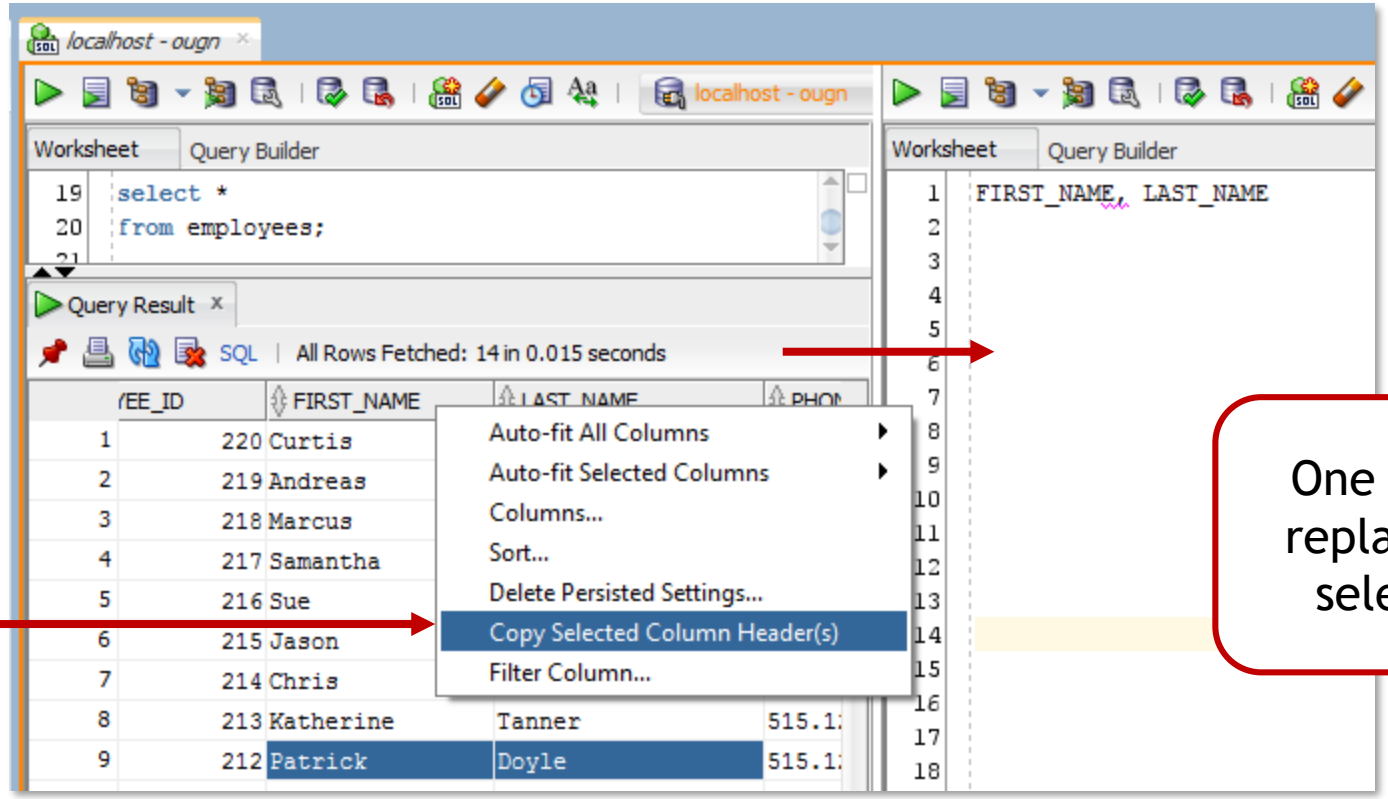
Ctrl-C copies the plain data

Copying Data



Ctrl-Shift-C copies the data with headings

Copying Column Names



Copy Selected Column Header(s) copies a comma-separated list of column names to the clipboard

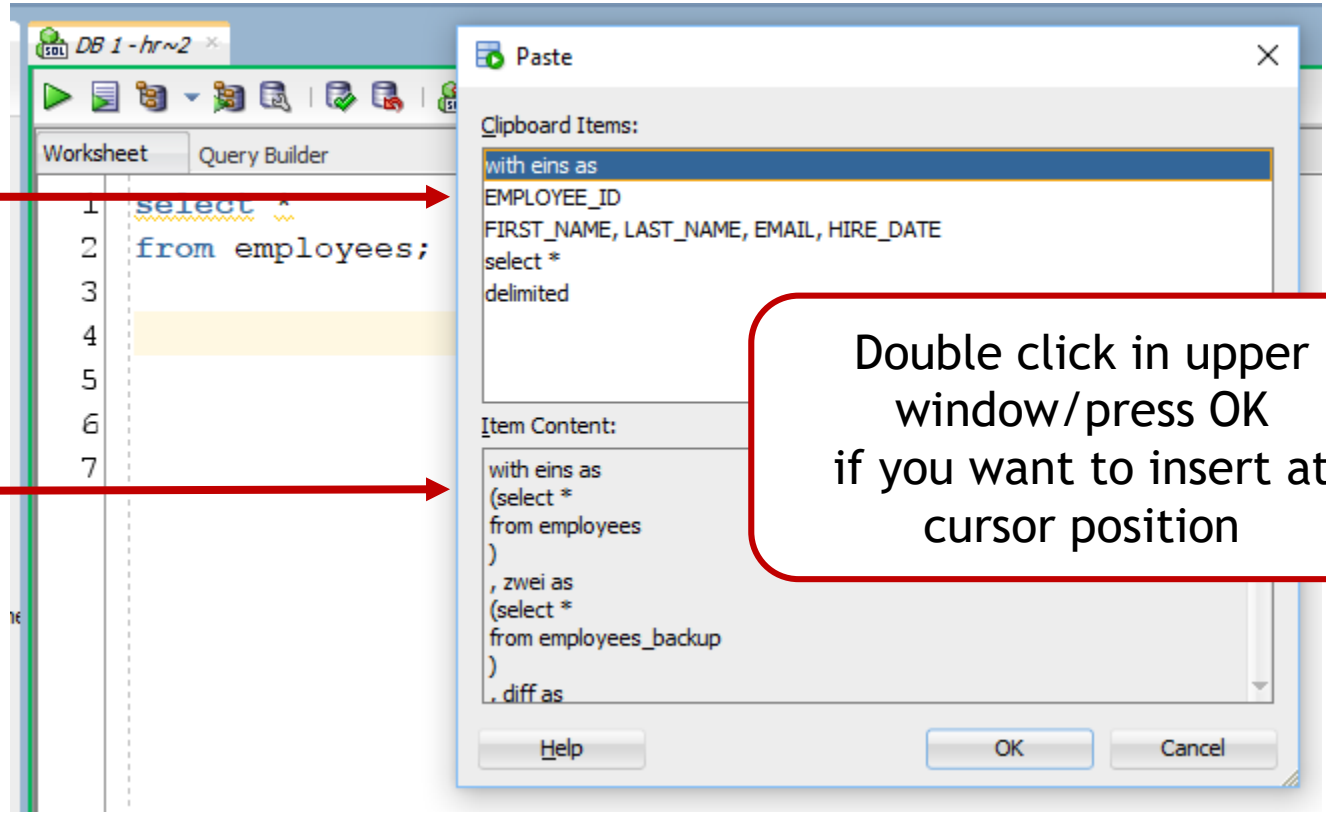
One of many way to replace the * in your select statement!

Copy & Paste extended

Ctrl-**Shift**-V
shows the clipboard's memory

Choose an entry from the upper window.

You can see the complete entry in the lower window



Double click in upper window/press OK
if you want to insert at cursor position

Histories in SQL Developer
SQL History

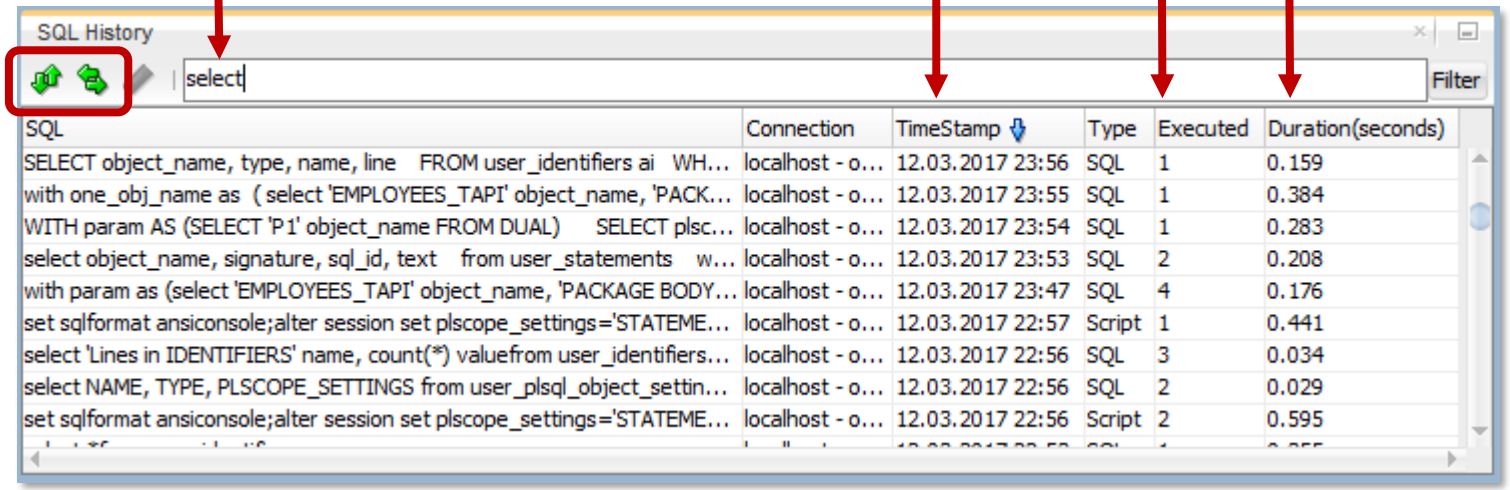
You can filter for any string!

Time of execution

Number of executions

Duration

With these buttons you can replace the current text in the worksheet with the selected statement
or
insert the selected statement at cursor position



SQL	Connection	TimeStamp	Type	Executed	Duration(seconds)
SELECT object_name, type, name, line FROM user_identifiers ai WH...	localhost - o...	12.03.2017 23:56	SQL	1	0.159
with one_obj_name as (select 'EMPLOYEES_TAPI' object_name, 'PACK...	localhost - o...	12.03.2017 23:55	SQL	1	0.384
WITH param AS (SELECT 'P1' object_name FROM DUAL) SELECT plsc...	localhost - o...	12.03.2017 23:54	SQL	1	0.283
select object_name, signature, sql_id, text from user_statements w...	localhost - o...	12.03.2017 23:53	SQL	2	0.208
with param as (select 'EMPLOYEES_TAPI' object_name, 'PACKAGE BODY...	localhost - o...	12.03.2017 23:47	SQL	4	0.176
set sqlformat ansiconsole;alter session set plscope_settings='STATEME...	localhost - o...	12.03.2017 22:57	Script	1	0.441
select 'Lines in IDENTIFIERS' name, count(*) valuefrom user_identifiers...	localhost - o...	12.03.2017 22:56	SQL	3	0.034
select NAME, TYPE, PLSCOPE_SETTINGS from user_plsql_object_settin...	localhost - o...	12.03.2017 22:56	SQL	2	0.029
set sqlformat ansiconsole;alter session set plscope_settings='STATEME...	localhost - o...	12.03.2017 22:56	Script	2	0.595

Histories in SQL Developer
Statements Log

Great for inquisitive people! ☺

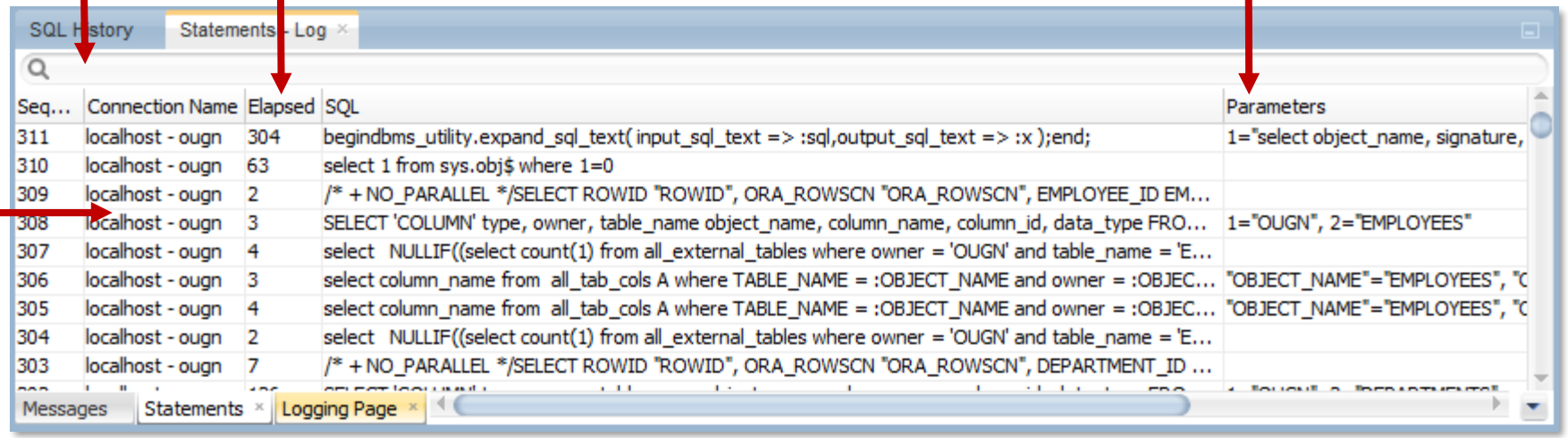
This log contains *everything* that's sent to the database.
So you see your own statements as well as the metadata queries that SQL Developer uses to display the database objects

You can filter for any string!

Duration

Parameters

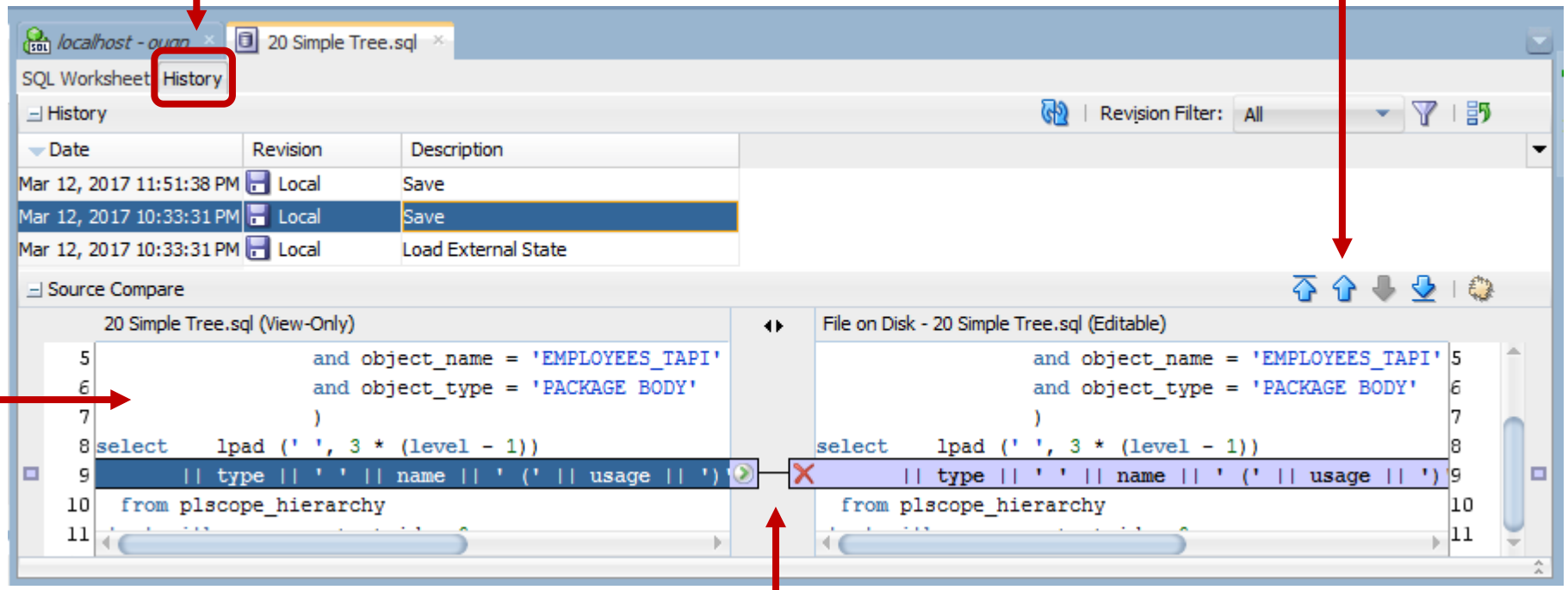
Double click opens a window with the complete text



Histories in SQL Developer
File History

The important tab!

Navigate



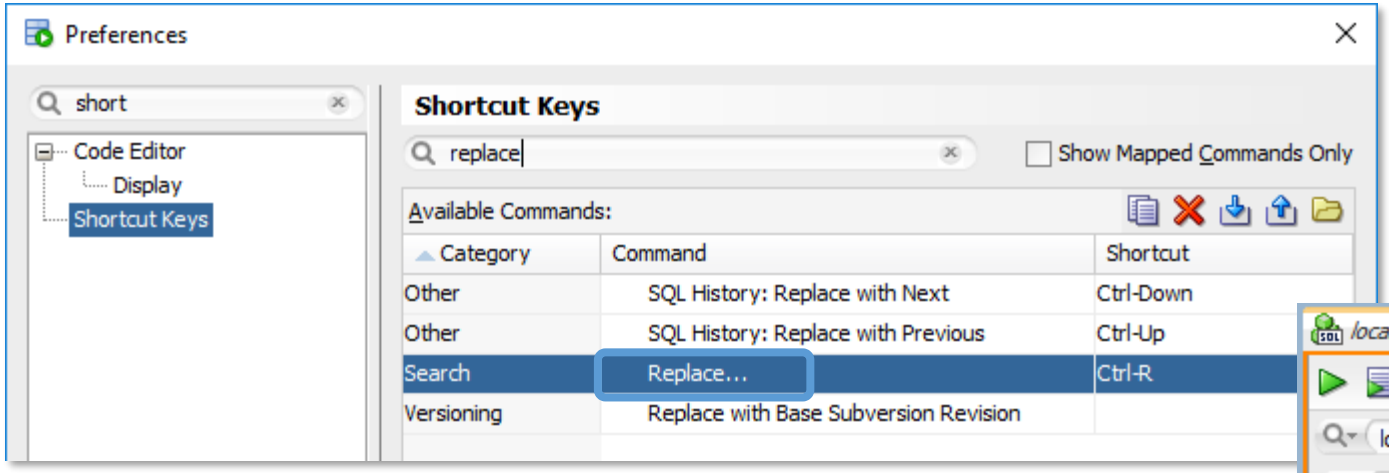
Saved versions of your file

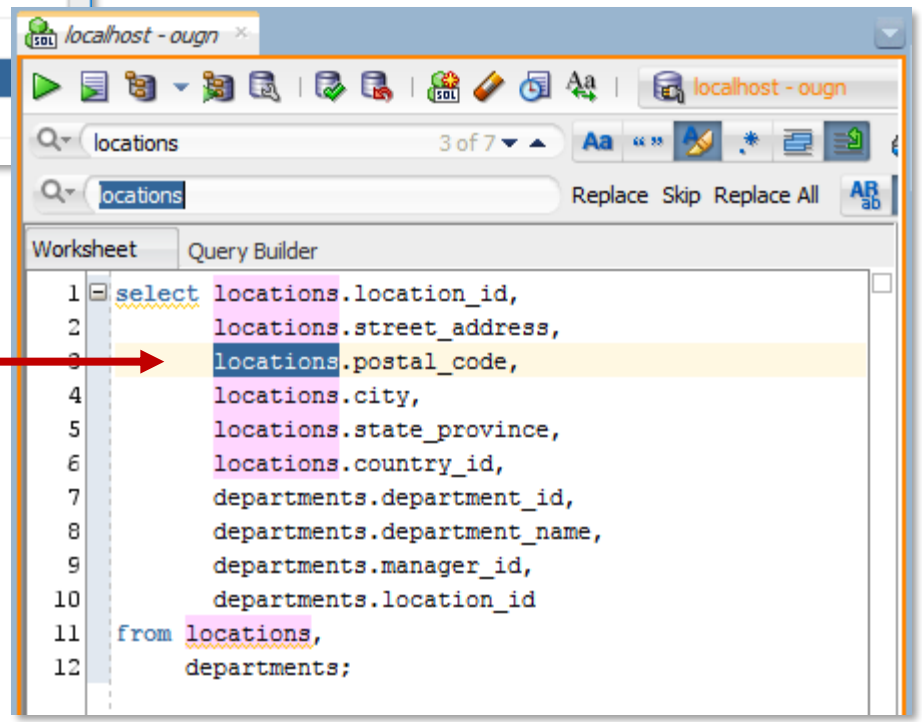
Diff with current version

Choose which changes you want to apply to your file

Replacing text

Shortcut CTRL-R





Mark the string you want to replace and press Ctrl-R

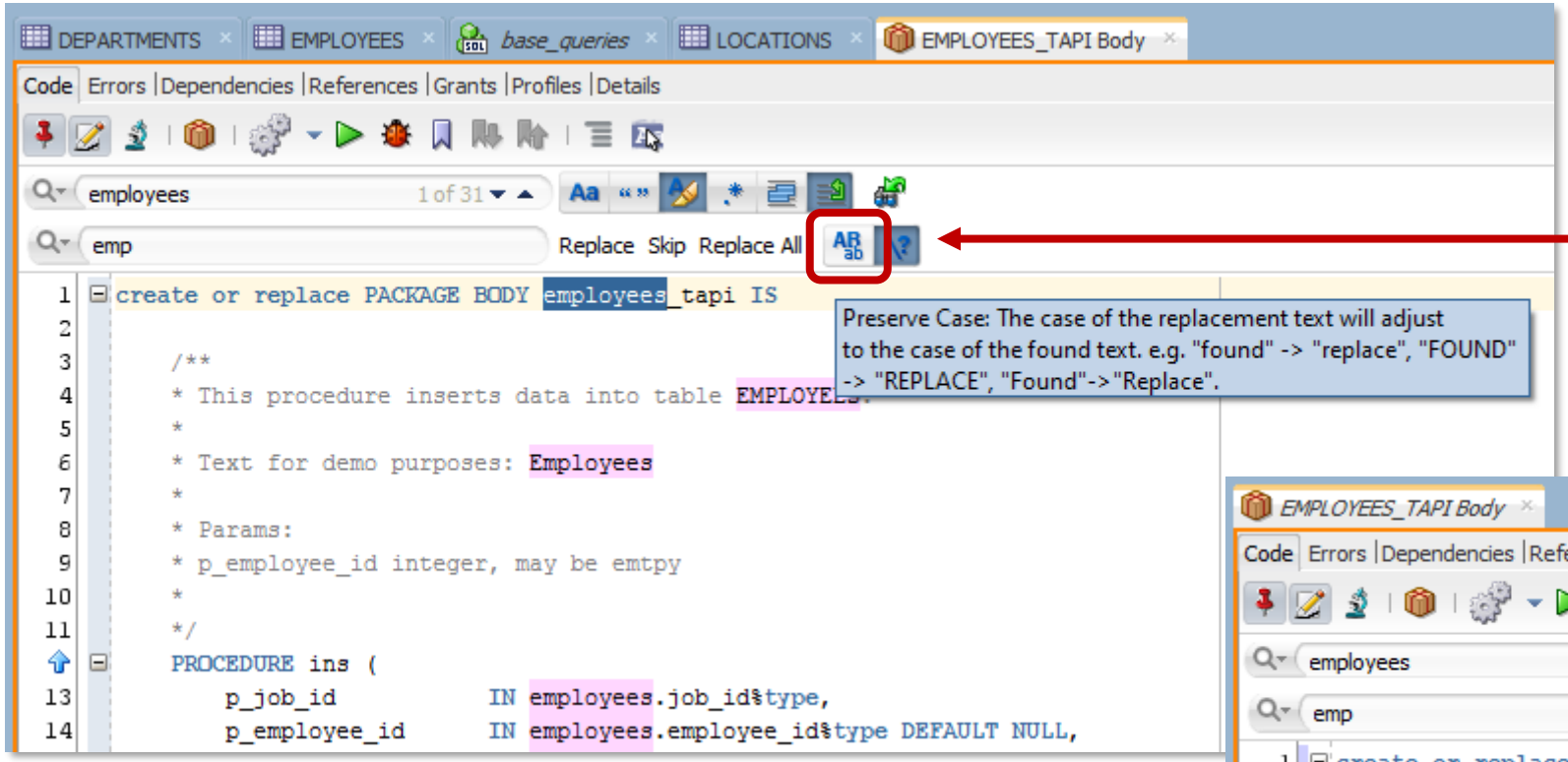
→ All occurences are highlighted

→ The focus is in the ‚Replace' field

→ You can start replacing right ahead ☺

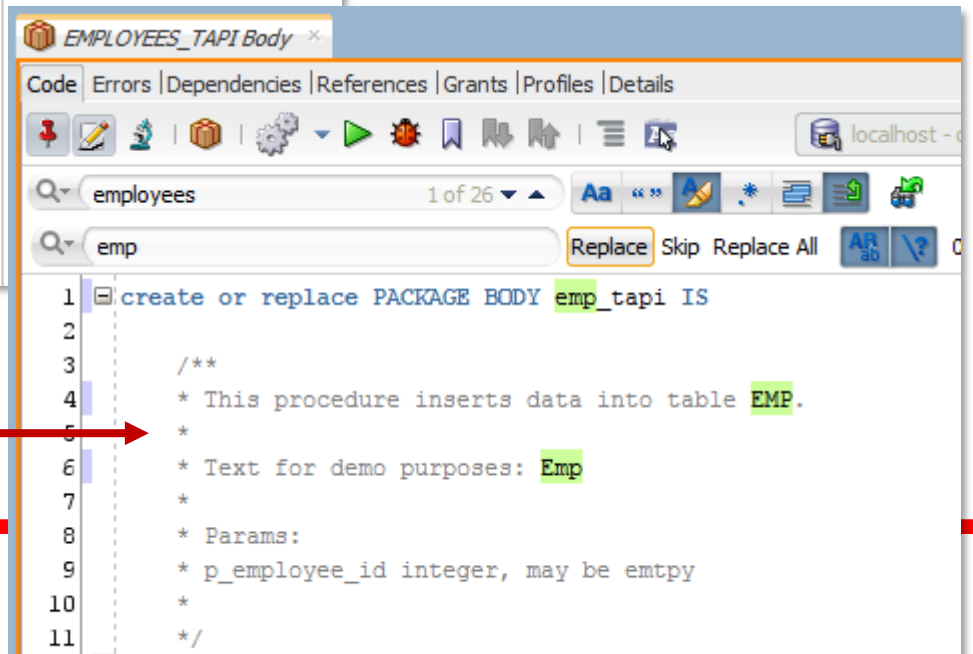
Replacing text

Challenge:
Keep upper case/lower case/init cap



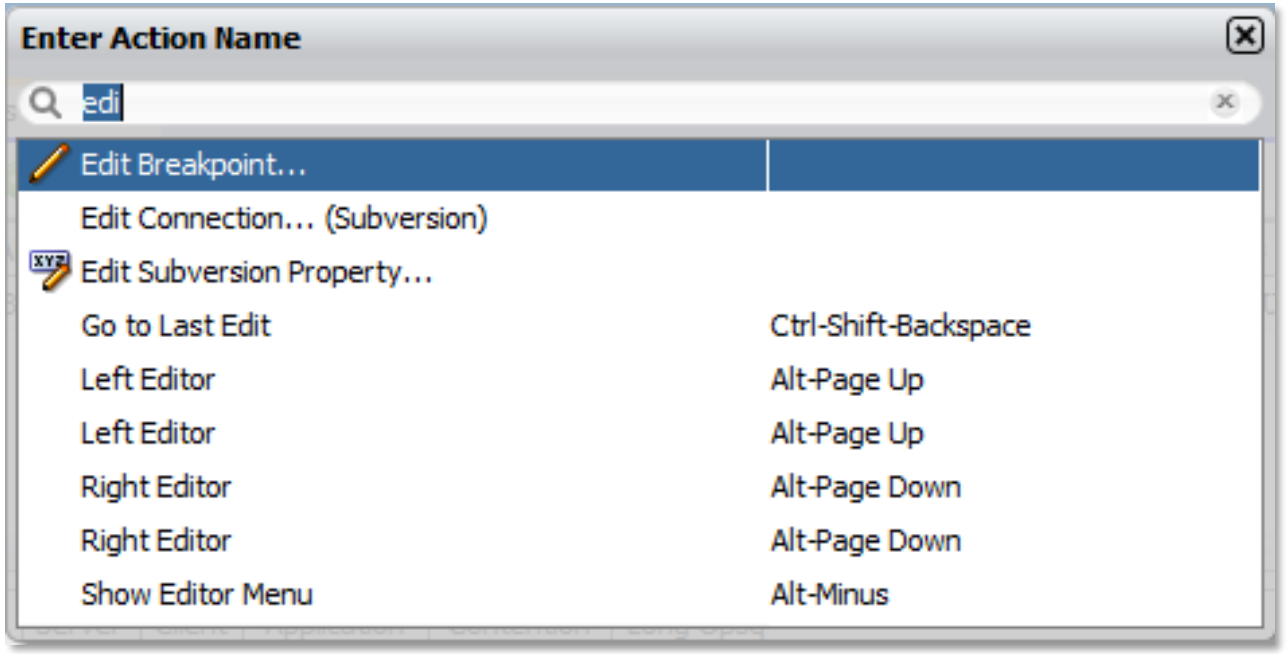
Solution:
Press this button

Result



Shortcuts

- Change or create your own:
  Menu: Tools → Preferences → Shortcut Keys
- Forgot Shortcut?
  Ctrl-Alt-A reminds you:

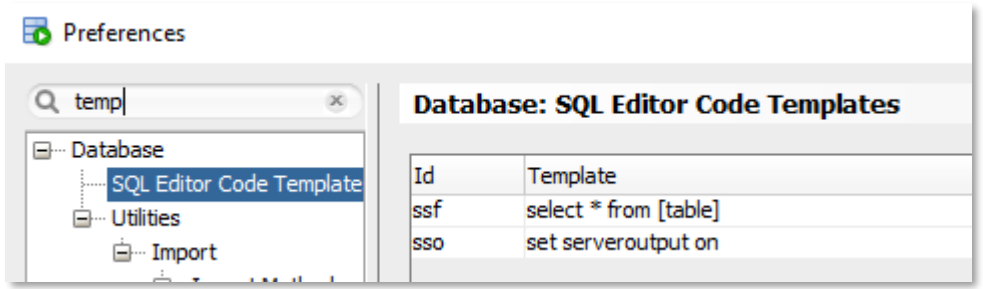


Define your own Shortcuts

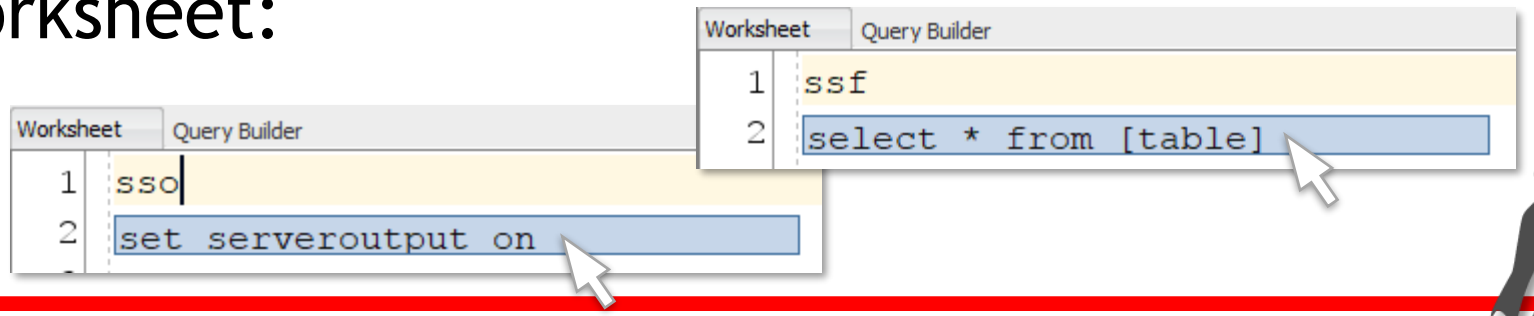
- Depending on your keyboard layout you can't use all predefined shortcuts, so just make your own
- Some ideas…
  - Upper case/Lower case: Ctrl-U, Ctrl-L
  - Multiple cursors on/off: Alt-.
  - Toggle Line Comments: Ctrl- -
  - Open Preferences Window Ctrl-P
  - Open New SQL Worksheet Ctrl-T

SQL Editor Code Templates

- Go to Preferences
- Navigate to tree entry 'Database' (not 'Code Editor') (alternatively type 'temp' into search field)
- Define your Templates



- After that, you can use them in the worksheet:



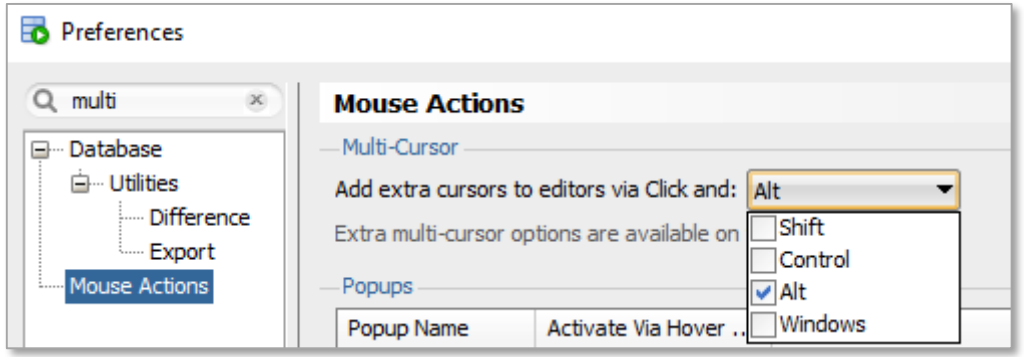
SQL Editor Code Templates

- For some reason, the templates don't work if there's no connection open ¯_(ツ)_/¯

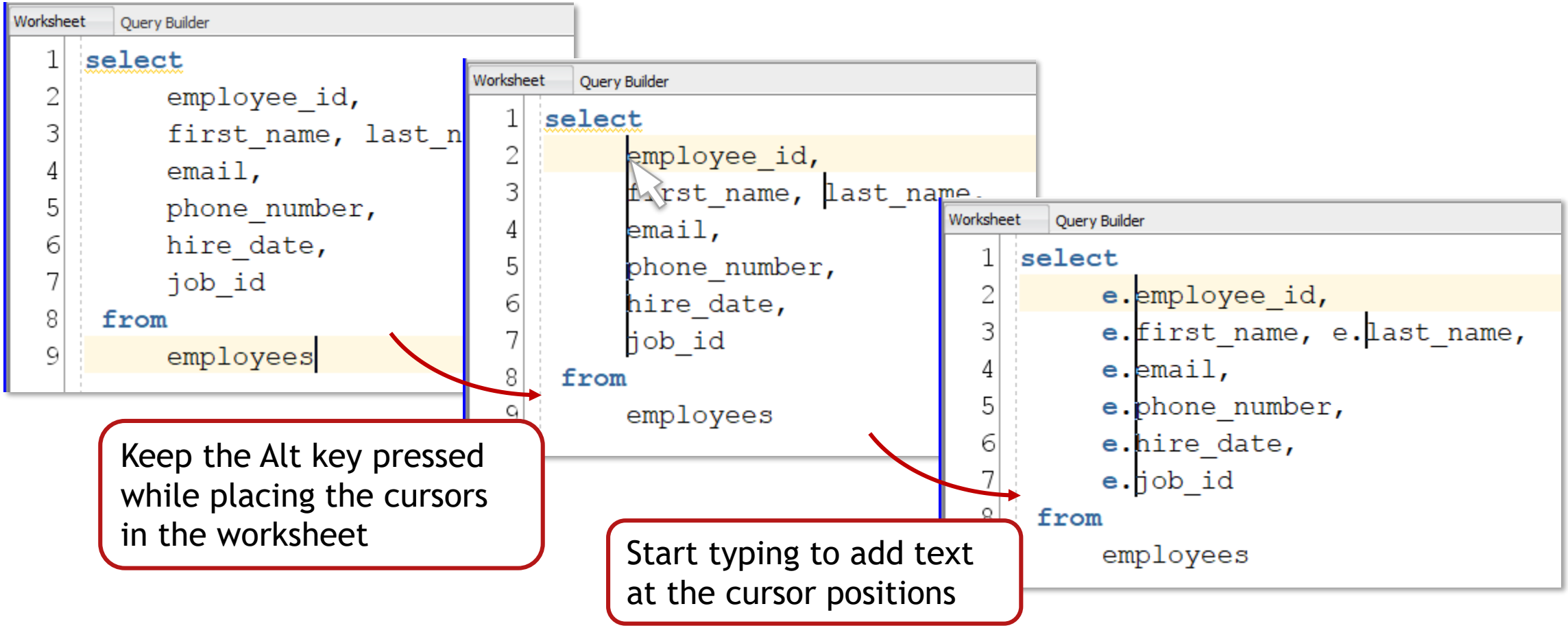
- Location:
  C:\Users\<User>\AppData\Roaming\SQL Developer
  \CodeTemplate.xml

Multi-Cursor Editing

- Preparation:
  Choose your favourite key/key combination for adding extra cursors:



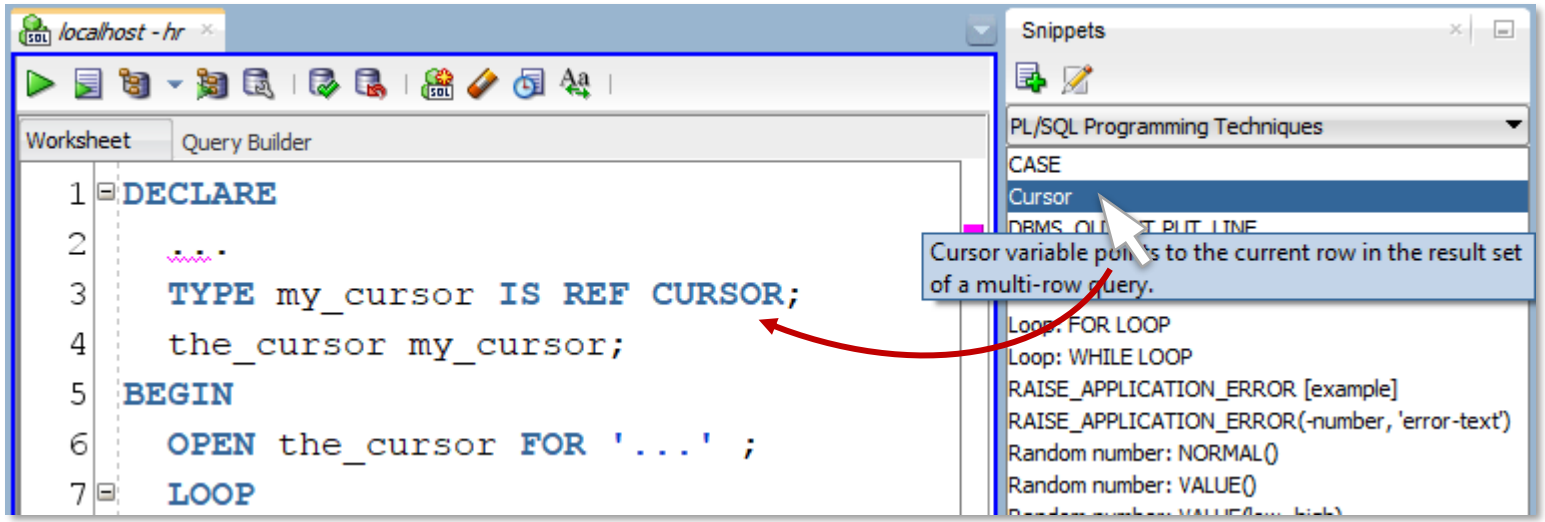
Multi-Cursor Editing



Snippets

- Menu: View → Snippets
- You can add your own!

Usage:
Drag (from Snippets window) and
Drop (into your worksheet)

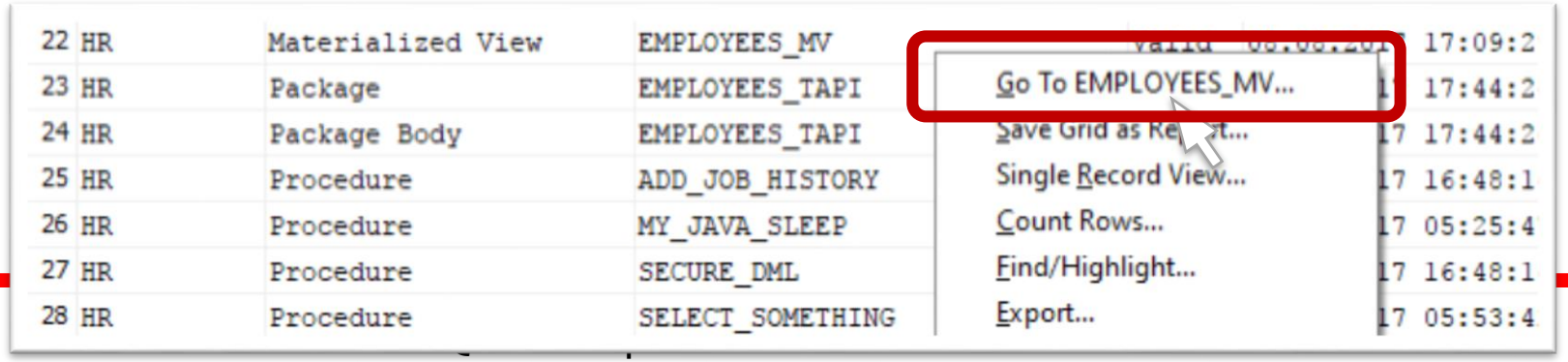


Reports with 'Go To'

- If you use column aliases

  `sdev_link_owner, sdev_link_name, sdev_link_type`

  the columns will not be shown in your report,
  but you get an extra context menu entry 'Go To <Object>'
  which opens the corresponding Object Viewer
- Location:
  C:\Users\<User>\AppData\Roaming\SQL Developer
  \UserReports.xml

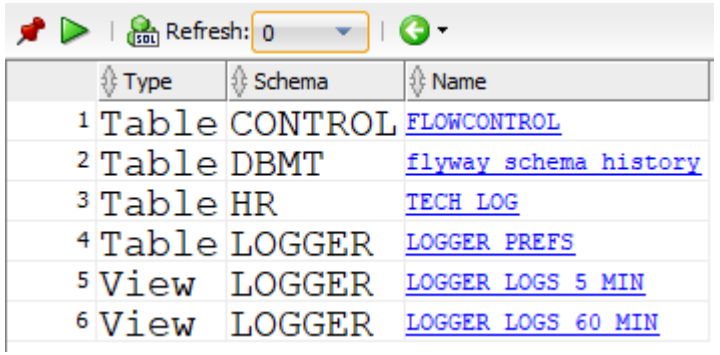


Reports with Hyperlinks

- A little more code is required when using hyperlinks, but it's mainly copy, paste, adjust
- Example:

```
select   initcap(object_type) "Type",
         owner                "Schema",
         'SQLDEV:LINK:'
         ||owner
         ||':'
         ||object_type
         ||':'
         ||object_name
         ||':oracle.dbtools.raptor.controls.grid.DefaultDrillLink' "Name"
from     all_objects
```

Just double click in the link to open the corresponding Object Viewer



	Type	Schema	Name
1	Table	CONTROL	FLOWCONTROL
2	Table	DBMT	flyway_schema_history
3	Table	HR	TECH_LOG
4	Table	LOGGER	LOGGER_PREFS
5	View	LOGGER	LOGGER_LOGS_5_MIN
6	View	LOGGER	LOGGER_LOGS_60_MIN

Deactivate Extensions

- Deactivate the features you don't need and
  … save a lot of time at SQL Dev startup!
  Menu: Tools → Features

- Location:
  C:\Users\User\AppData\Roaming\SQL Developer\system<Build number>\ide-extension-prefs.xml

Finding More Information

The most comprehensive Source: Jeff Smith's blog

http://www.thatjeffsmith.com/

Jeff´s Cheat Sheet

https://www.cheatography.com/thatjeffsmith/cheat-sheets/oracle-sql-developer/

SQL Developer Exchange - Enhancement Requests

http://sqldeveloper.oracle.com

Finding More Information

Community – ODC/OTN Forum

https://community.oracle.com/community/database/developer-tools/sql_developer/

Twitter – Users to follow

@thatjeffsmith @HeliFromFinland @krisrice
@OracleSQLDev, @OracleSQLcl

Twitter - Hashtags

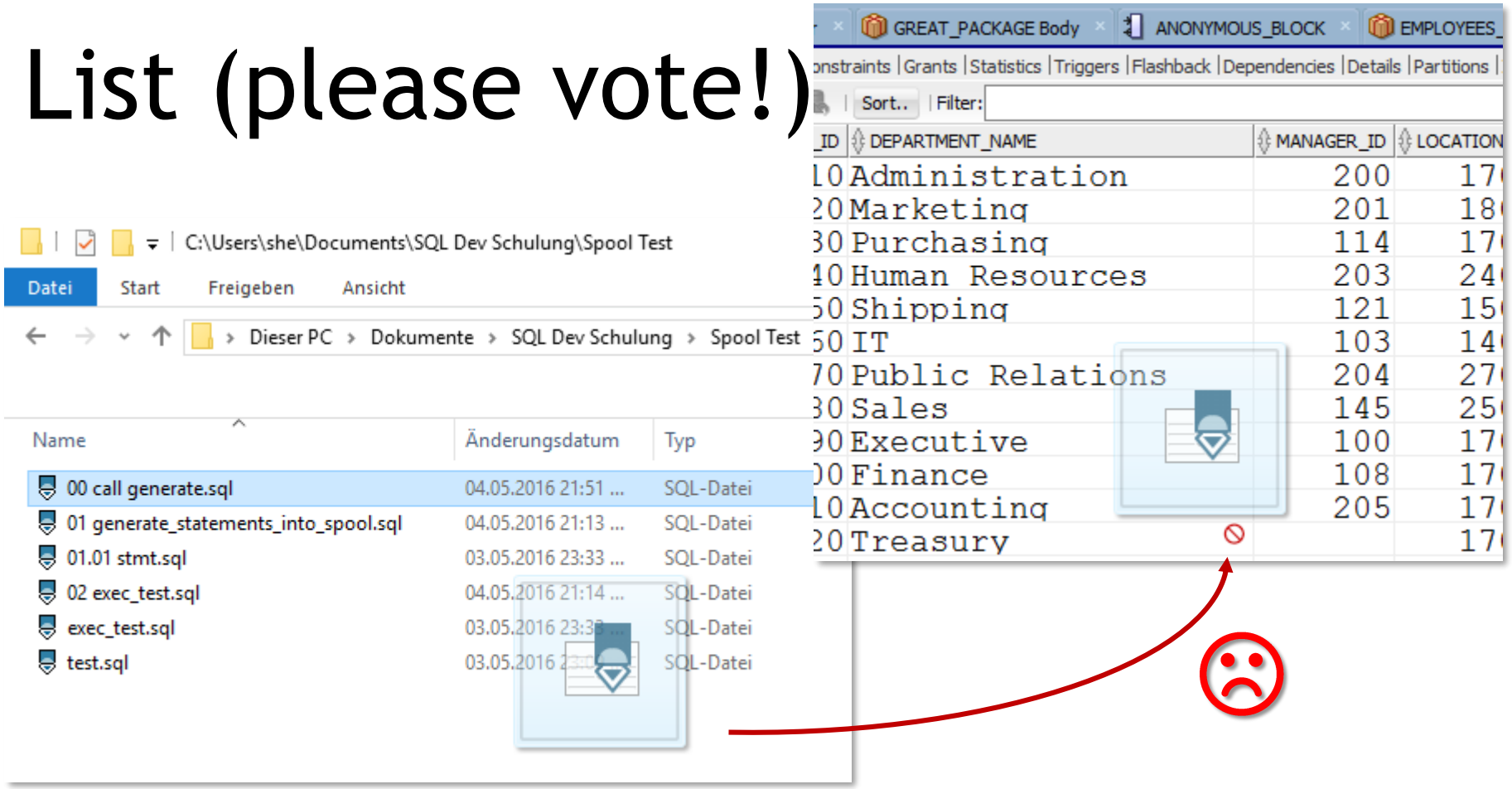
#SQLDev #SQLDeveloper #SQLcl

POUG

My Wish List (please vote for it!)

- Save/Restore Workspace:
  https://apex.oracle.com/pls/apex/f?p=43135:7:::NO:RP,7:P7_ID:361
- Open saved SQL file in an unshared connection worksheet
  https://apex.oracle.com/pls/apex/f?p=43135:7:::NO:RP,7:P7_ID:30523

My Wish List (please vote!)



- Drap & Drop everywhere (not restricted to worksheet!)
  https://apex.oracle.com/pls/apex/f?p=43135:7:::NO::P7_ID:42761

Any more Questions?

- Mail: sabine.heimsath@its-people.de
- Twitter: https://twitter.com/oraesque

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