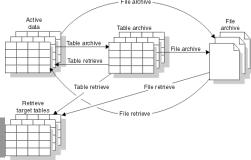


#### IBM Software Group

# IBM Developer for z Systems – for ISPF Developers

**Module 8** – Using the Data Source Explorer





Jon Sayles, IBM - jsayles@us.ibm.com

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# Learning DB2 and SQL

- Many (in the thousands of) books exist that do an excellent job teaching SQL.
- Additionally, sites exist on the Internet (GOOGLE: "SQL tutorials" or "Learn SQL") for online (and typically free) education.
- IBM Also supplies excellent SQL and DB2 documentation:
  - ▶ DB2 Documentation
  - SQL Getting Started
  - ▶ SQL Reference Manual
  - ▶ Message (error code) Reference. <u>Cached</u> pdf version of full guide.
  - ▶ <u>DB2 Application Development Guide</u> with example embedded SQL programs.
  - Triggers in DB2
  - ▶ Constraints in DB2
- And there are plenty of non-IBM sites to learn about SQL:

Slide Show (from current slide)

- Http://en.wikipedia.org/wiki/SQL
- Note: In order for you to get the above links to work, view the PowerPoint in Slide Show mode.
- Here is an example of COBOL database access:
  - http://publib.boulder.ibm.com/infocenter/dzichelp/v2r2/index.jsp?topic=/com.ibm.db29.doc.apsg/db2z\_samplecoboldrdathreepartnames.htm

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# **UNIT**

# The IDz Workbench



## Topics:

- The Data Perspective and connecting to DB2
- Understanding your DB2 objects
- Editing and managing DB2 table data
- Coding and testing SQL
- Extract/Load for Managing Test Data & Decision Support



#### **Unload** (Extract) Rows from a Table

You can unload (extract) test data rows before modifying a table's DDL, either for back-up purposes or to share among team members or re-load later.

#### From the Data Source Explorer:

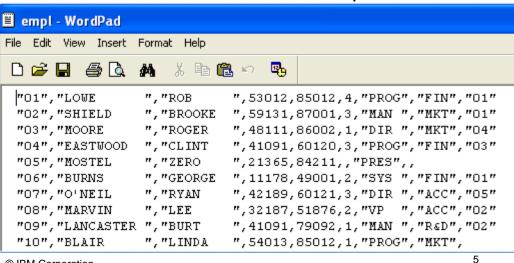
- Right-click over the table name
- Select: Data

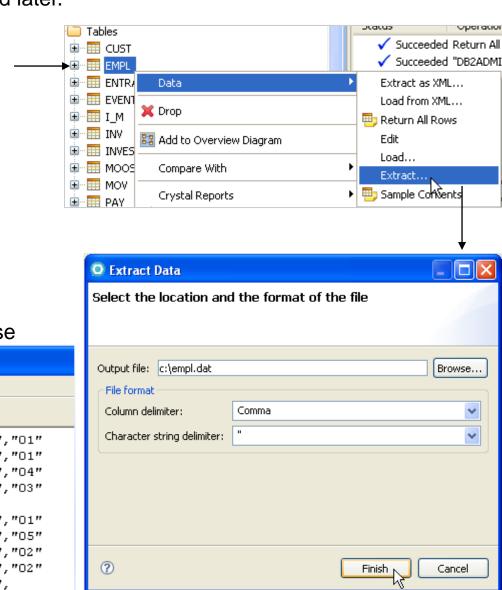
#### Extract...

- Specify data extract (unload) options:
  - Output file-spec
  - Column delimiter type
  - Char-string delimiter type

To re-insert the rows, select: **Load...** 

Select the same file, and follow script in reverse



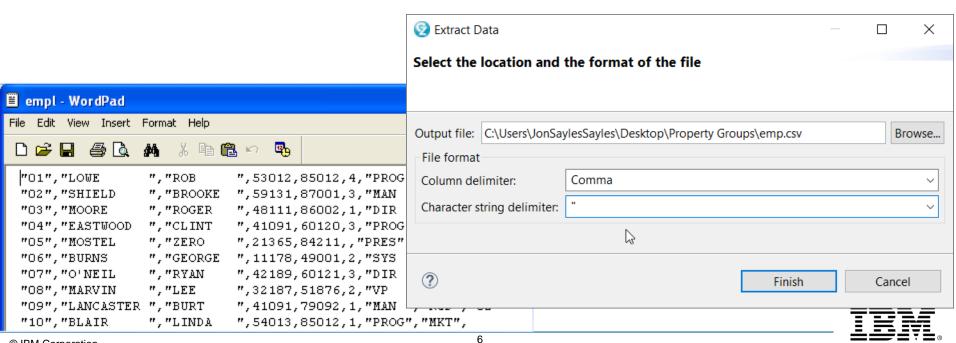


#### Extract – Data Format and Uses

The Extract process unloads row-values into "plain-text". This makes them available for use in standard MS-Windows technology.

Besides text (\*.txt) files – you can extract into:

- Excel
  - Extract to: \*.csv
- MS-Word
  - Extract to: \*.doc
- **PowerPoint** 
  - Also for Decision Support applications



### **Utilizing Extracted Data for Decision Support – Excel**

You can also open extract files into Excel by simply naming the output file as: <filename>.csv

Calibri

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10 CHRISTINE I

20 MICHAEL L

70 HORATIO D

100 THEODOR Q

110 VINCENZO G

130 DELORES J

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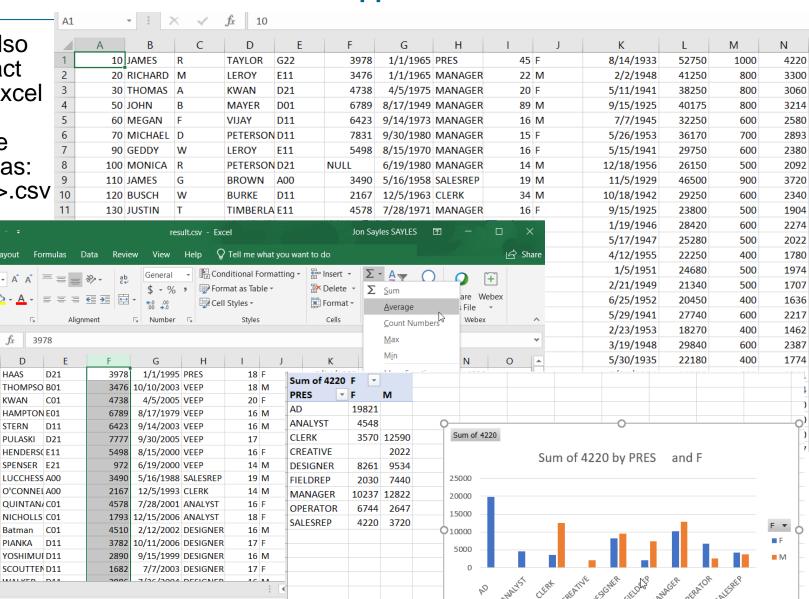
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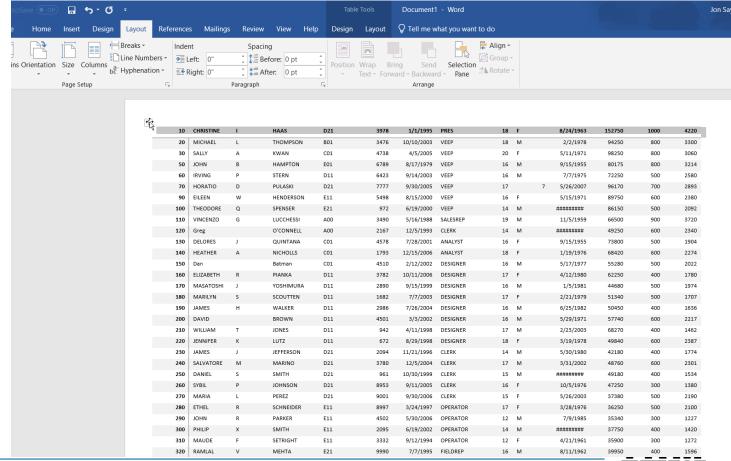
From there you have all the tools of Excel at your disposal

Average: 4060.952381 Count

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#### **Utilizing Extracted Data for Decision Support: MS-Word**

- You can create MS-Word and PowerPoint docs by:
  - Extracting into Excel \*.csv
  - Opening the extract file, selecting all values (Ctrl+A) then copying & pasting the values into MS-Word
  - Once inside the Word doc you can create well-formed tables by selecting the values and (from the Insert tab) creating a table – then formatting the cells

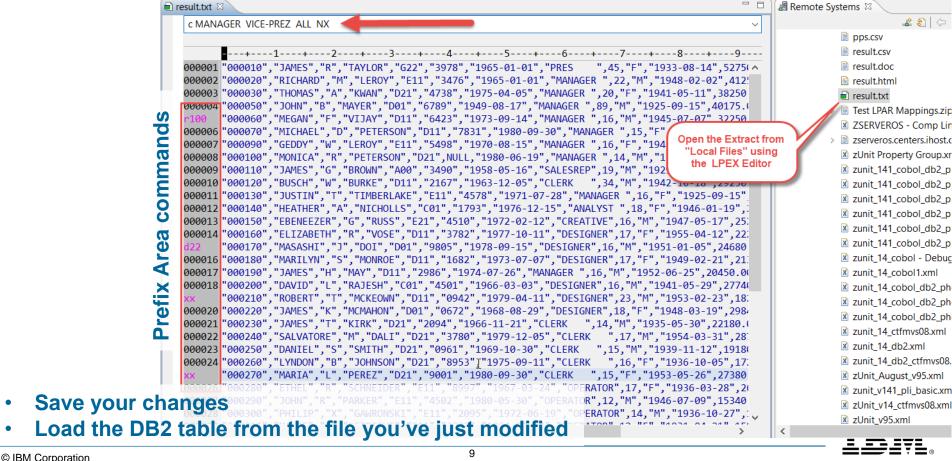


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# Modifying Extracted DB2 Table Values using ISPF Edit

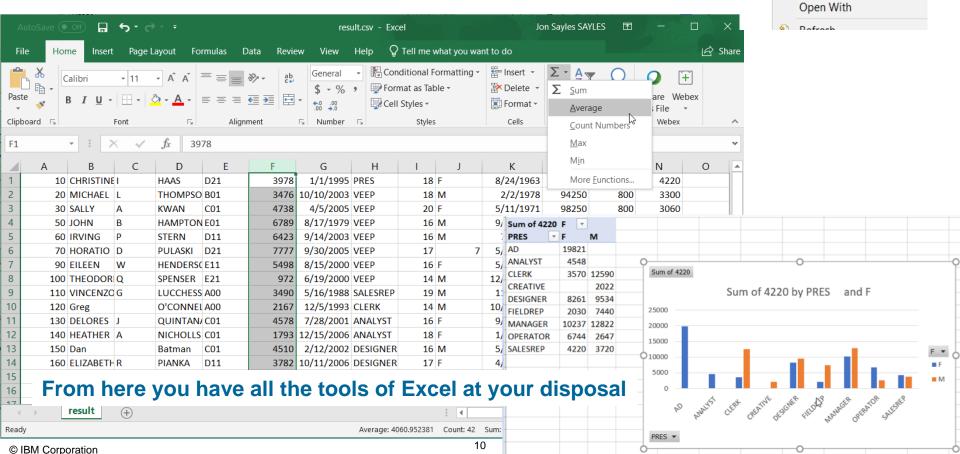
#### After you have successfully Extracted DB2 Table values to a \*.txt file:

- ▶ Find the file in Remote Systems → Local → Local Files
- Open With z Systems LPEX Editor
- ▶ Utilize ISPF techniques: Command Line commands (Find, Change, Picture String edit) Prefix Area Commands: Repeat (to create new test data rows) Delete, eXclude, etc.
  - Note that you can create new rows by duplicating existing rows, etc.



# Workshop - Extracted Data for Decision Support Applications

- Extract a DB2 table into a file named with an extension of .csv
- From Remote Systems → Local → Local Files
  - ▶ Find and Open the .csv extract file
- This should open Excel. If it doesn't you'll need to use Preferences → General → Editors → File Associations to add a new File Association for \*.csv and Associated editor



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COB-DB2-95.xml

### Modifying Extracted DB2 Table Values using Excel – 1 of 2

You can also open DB2 extract files using Excel – and modify row values with Excel

Extract Data

Select the location and the format of the file

- Extract to a file named: \*.csv
- ▶ Find the file in Remote Systems:
  - Local

Page Layout

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**TAYLOR** 

LEROY

**KWAN** 

MAYER

PETERSON D11

PETERSON D21

TIMBERLA E11

NICHOLLS C01

MONROE D11

VIJAY

LEROY

BROWN

**BURKE** 

RUSS

VOSE

DOI

Local Files

Formulas

G22

E11

D21

D01

D11

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A00

D11

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D11

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NULL

▶ Double-Click to open the file

Data

This should open the file into MS-Excel

Review

View

General

Number

3978 1/1/1965 PRES

3476 1/1/1965 MANAGER

4738 4/5/1975 MANAGER

6789 ####### MANAGER

6423 ####### MANAGER

7831 ####### MANAGER

5498 ####### MANAGER

3490 ####### SALESREP

4578 ####### MANAGER

1793 ####### ANALYST

4510 ####### CREATIVE

3782 ####### DESIGNER

9805 ####### DESIGNER

1682 7/7/1973 DESIGNER

JOOC HHHHHHHH MANNACED

2167 ####### CLERK

####### MANAGER

Format as Table •

Styles

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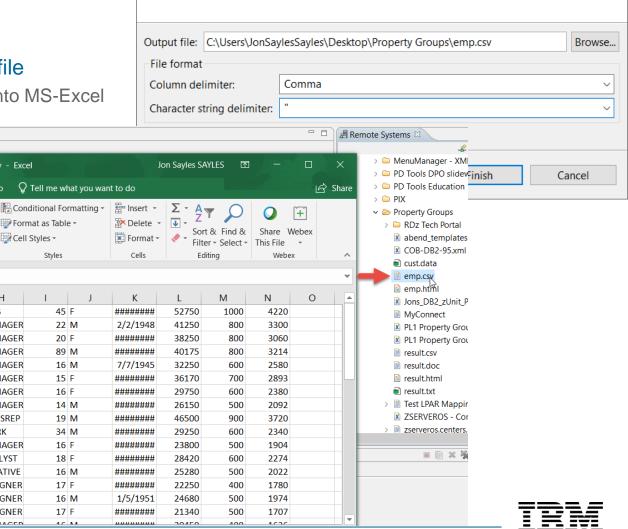
16 M

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Cell Styles -



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Calibri

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90 GEDDY

110 JAMES

120 BUSCH

130 JUSTIN

20 RICHARD M

30 THOMAS A

70 MICHAEL D

100 MONICA R

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150 EBENEEZE G

160 ELIZABETH R

170 MASASHI J

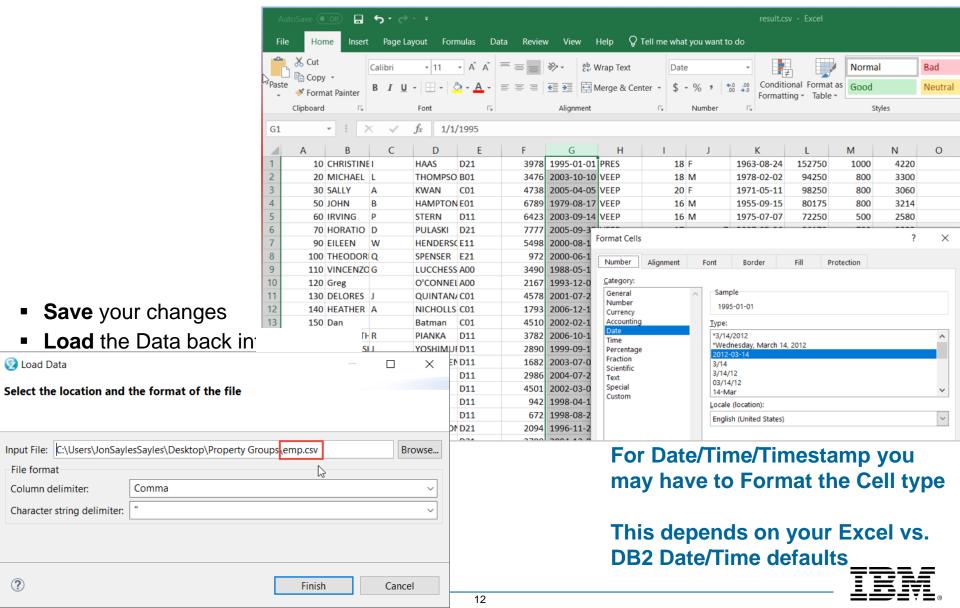
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### **Modifying Extracted DB2 Table Values using Excel – 2 of 2**

#### Modify the table values using Excel editing techniques



### Using Update-able Views to Edit Subsets of Large Tables – 1 of 2

- One of the current limitations of the IDz table editor is that for very large tables (100's of columns, 100's of 1,000's of rows) you cannot filter table data
- One solution for this is to create a view that renders the rows you want to modify, and edit through the view (note that this is limited to version 8.0 and later)
- Considerations:
  - ▶ You must have CREATE VIEW privileges
    - Or optionally, you can ask your DBA or the table "owner" to run a CREATE VIEW for you, if you don't
  - ▶ You must create an update-able view.
    - An update-able view is a row-column subset of one table. The statement must not:
      - Reference more than one table in the FROM clause, in a sub-select or UNION with other tables
      - Contain GROUP BY or HAVING clause or DISTINCT in the selection list.
      - Reference a non-updateable view
      - Contain an SQL "expression" (functions, computations, etc.)
- Here's a sample Create View statement that creates a row/column subset of the DDS0001.CUST table:

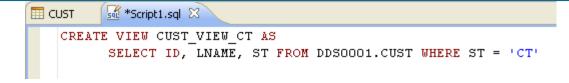
```
Create View Cust_View_CT as

Select ID, LNAME, ST From DDS0001.Cust Where ST = 'CT'
```



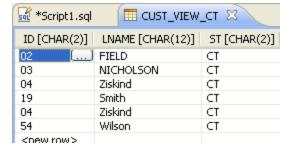
### Using Update-able Views to Edit Subsets of Large Tables – 2 of 2

- Steps including screen captures:
  - 1. Create an updatable view

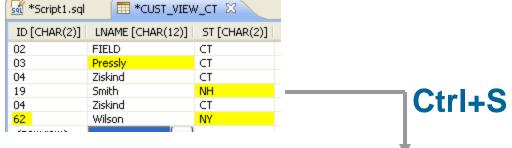


2. Edit (through) the view:

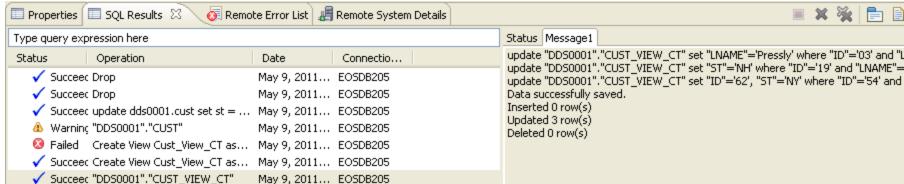




3. Make changes



4. Save your edits





#### **Support for "Current SQLID"**

You can **SET** the **CURRENT SQLID** (just as you do on QMF/SPUFI) in order to run SQL statements with unqualified table/view names.

