



PUBLISH

Data Sources and Tableau Server »

Creating, Maintaining and Publishing Data Sources on Tableau Server

11/14/2017

Agenda

- Tableau File Extensions
- Data Sources & Extracts
- Data Sources & Security
- Refreshing Data Sources
- Best Practices

Tableau File Extensions (1)

Workbook (.twb)

- ▶ Tableau workbook files have the .twb file extension. Saves all the sheets and their connection information in a workbook file. The data is not included.

Packaged Workbook (.twbx)

- ▶ Tableau packaged workbooks have the .twbx file extension. Saves all the sheets, their connection information and any local resources (e.g., local file data sources, background images, custom geocoding, etc).

Data Extract (.tde)

- ▶ Tableau data extract files have the .tde file extension. Extract files are a local copy of a subset or entire data source that you can use to share data, work offline, and improve database performance.

Tableau File Extensions (2)

Data Source (.tds)

- ▶ Tableau data source files have the .tds file extension. Data source files are shortcuts for quickly connecting to data sources that you use often. Data source files do not contain the actual data but rather the information necessary to connect to the data source.

Packaged Data Source (.tdsx)

- ▶ Tableau packaged data source files have the .tdsx file extension. A packaged data source is a zip file that contains the data source file (.tds) described above as well as any local file data sources such as Extract files (.tde), text files, Excel files, Access files, and local cube files.

Data Sources & Extracts

- »»>
 - ▶ How to create data source
 - ▶ Creating a custom SQL Query
 - ▶ Editing a custom SQL query
 - ▶ Storing data sources in a project on the server
 - ▶ How to create a extract
 - ▶ Connecting to a Tableau data extract
 - ▶ Duplicating a Tableau data extract

Data Sources

What is a Data source?

- ▶ A connection to a database or other place where data is stored, with information about what data in that database to use.
- ▶ Users can create workbooks that point to a data source.
- ▶ A data source that is shared on Tableau Server might contain an extract, or it might contain configuration information that describes how to access a live connection.

Creating a Data Source (1)

The screenshot shows the Tableau 'Connect' interface for creating a new data source. A red box highlights the 'To a Server' button under 'To a File' (step 1). A red circle labeled '1' is placed over the 'To a Server' button. A red box highlights the 'More...' button under 'To a Server' (step 2). A red circle labeled '2' is placed over the 'More...' button. A red box highlights the 'IBM DB2' option in the list of servers (step 3). A red circle labeled '3' is placed over the 'IBM DB2' option. A red box highlights the 'Sign In' button on the IBM DB2 connection dialog (step 5). A red circle labeled '5' is placed over the 'Sign In' button. The connection dialog for 'IBM DB2' shows fields for 'Server' (dwp2.ucop.edu), 'Port' (50001), 'Database' (uc_dss), 'Username' (opopoola), and 'Password' (redacted). A red circle labeled '4' is placed over the 'Enter information to sign in to the database:' label.

Connect

To a File

- Excel
- Text file
- Access
- JSON file
- PDF file
- Spatial file
- Statistical file
- More...

To a Server

- Tableau Server
- Microsoft SQL Server
- MySQL
- Oracle
- Amazon Redshift
- More... >

Search

Tableau Server
Actian Matrix
Actian Vector
Amazon Athena
Amazon Aurora
Amazon EMR
Amazon Redshift
Anaplan
Apache Drill
Aster Database
Cisco Information Server
Cloudera Hadoop
DataStax Enterprise
Dropbox
EXASOL
Firebolt
Google Analytics
Google BigQuery
Hortonworks Hadoop Hive
HP Vertica
IBM BigInsights
IBM DB2 3
IBM PDA (Netezza)
Kognitio
MapR Hadoop Hive
Marketo
MarkLogic
MemSQL
Microsoft Analysis Se
Microsoft PowerPivot
Microsoft SQL Server
MonetDB
MongoDB BI Connect
MySQL
OData
OneDrive
Oracle Essbase
Pivotal Greenplum Database
PostgreSQL
Fireship
Progress OpenEdge

Other Databases (ODBC)

IBM DB2

Server: dwp2.ucop.edu Port: 50001

Database: uc_dss

Enter information to sign in to the database:

Username: opopoola

Password: *****

Initial SQL... 5

Sign In

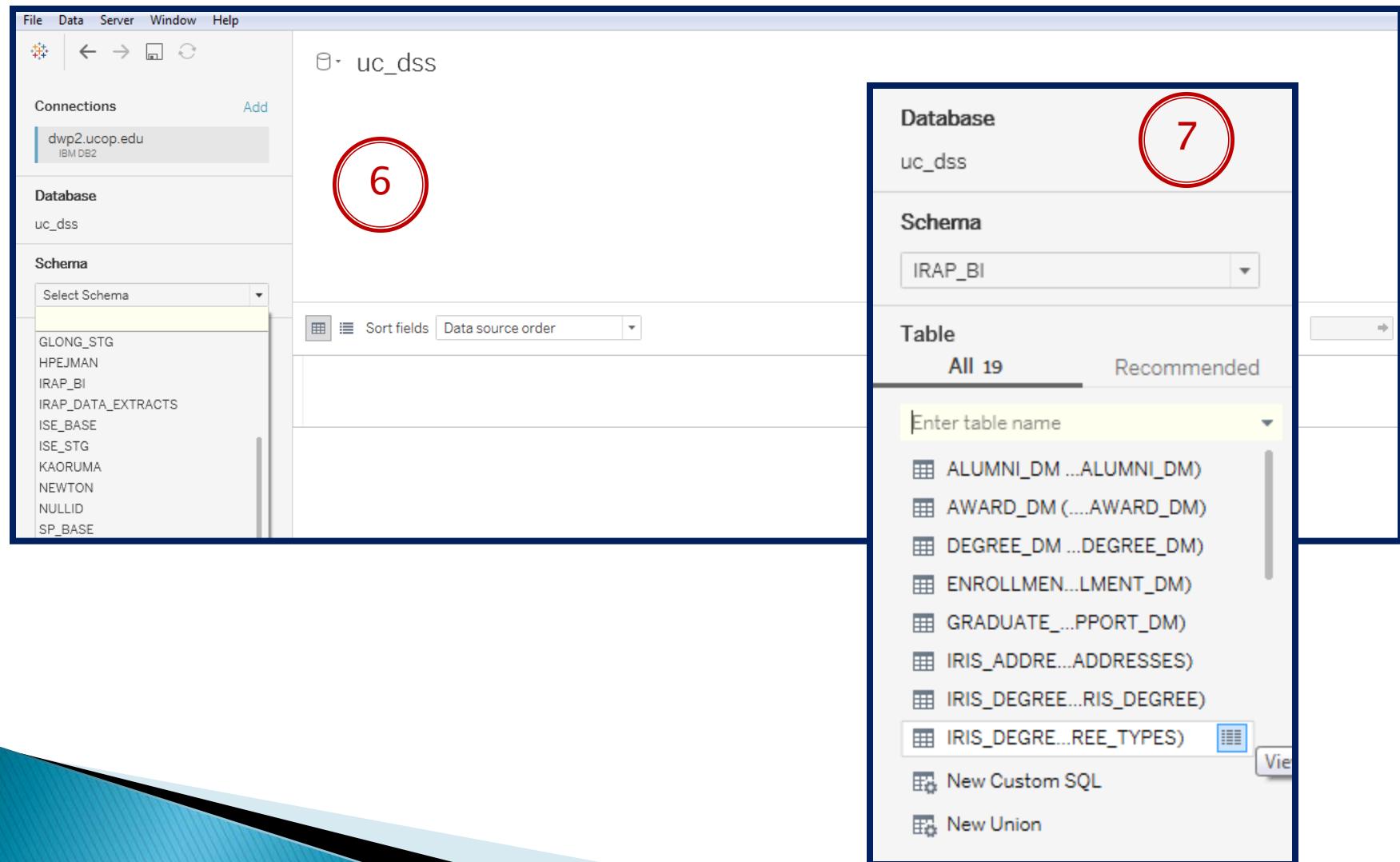
Data Source Connection Types



This refers to a data source that Tableau accesses to provide real-time or near real-time data. With a live data source, Tableau makes queries directly against the database or other source, and returns the results of the query for use in a workbook.

This is a snapshot of data. An extract (.tde file) might be created from a static source of data, like an Excel spreadsheet. Or the extract might contain data from a relational database or from cloud-based data.

Creating a Data Source (2)



Creating a Data Source (3)

DEGREE_DM (IRAP_BI.DEGREE_DM) (IRAP_BI)

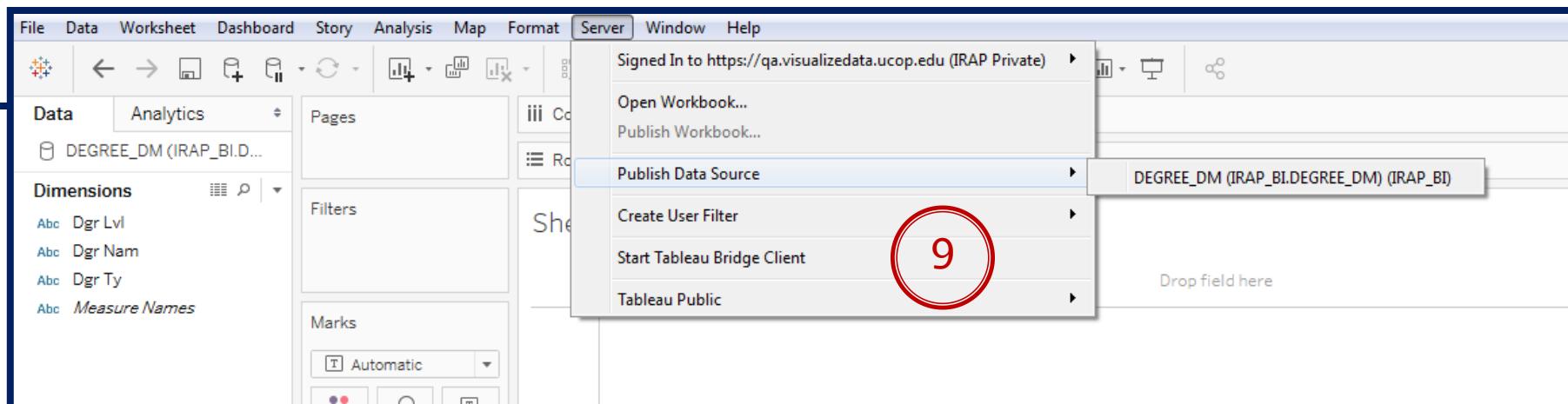
Connection

Live

Extract

8

IRIS_DEGREE_TYPES



9

Creating a Data Source (4)

Publish Data Source to Tableau Server X

Project Default

Name Degree Types DS

Description Degree types data source

Tags Add

Permissions Permissions are locked by the site admini... View

Authentication Prompt user Edit

More Options

Update workbook to use the published data source

Tableau Server will temporarily access the credentials provided for '[dwp2.ucop.edu]' to confirm it can maintain a live data connection.

10 Publish

Authentication

Prompt user Edit

Data Source	Connection	Authentication	Extract	Username
DEGREE_DM (IRAP_BI.DEGREE_DM) (IRAP_BI)	dwp2.ucop.edu	Prompt user	No	opopoola

11 maintain a live data connection.

12 Data source 'Degree Types DS' successfully published to the Tableau Server. OK

11

12

Creating a Data Source (5)

The screenshot shows the Power BI Data Sources interface and an 'Edit Connection' dialog.

Data Sources Screen: The top section shows a list of data sources. A red circle labeled '13' highlights the context menu for the selected 'Degree Types DS' data source. The menu options include: New Workbook, Download, Tag..., Permissions..., Move..., Change Owner..., Edit Connection..., Revision History..., and Delete... . The 'Edit Connection...' option is highlighted with a red box.

Edit Connection Dialog: The bottom section shows the 'Edit Connection' dialog for the selected data source. A red circle labeled '14' highlights the 'Server name' field containing 'dwp2.ucop.edu'. Below it, the 'Server port' is set to '50001', 'Username' is 'dss', and 'Password' is set to 'Embedded password in connection' (radio button selected). A red box highlights this radio button. The dialog also includes a 'Test Connection' button and 'Cancel'/'Save' buttons at the bottom.

Degree Types DS Data Source Detail: The bottom-most section shows the details for the 'Degree Types DS' data source. It includes a thumbnail, the name 'Degree Types DS', the owner 'Ola Popoola', views (0), and likes (0). It has tabs for 'Connections' (1), 'Connected Workbooks' (0), 'Permissions', and 'Details'. Under 'Connections', it shows 'Connects to' 'dwp2.ucop.edu' using 'IBM DB2' with 'Authentication' as 'Embedded in connection' and 'Username' as 'dss'. A red circle labeled '15' highlights the 'Connections' tab.

Prompt or Embed Credentials?

The screenshot shows a software interface for managing data sources. At the top, there's a navigation bar with 'Authentication' and 'Prompt user' (which is selected and highlighted in blue). Below this, there are tabs for 'Data Source', 'Connection', 'Authentication', 'Extract', and 'Username'. Under 'Data Source', it lists 'DEGREE_DM (IRAP_BI.DEGREE_DM) (IRAP_BI)' and 'dwp2.ucop.edu'. Under 'Authentication', a dropdown menu is open, showing three options: 'Prompt user' (selected), 'Prompt user', and 'Embedded password'. A red box highlights the dropdown menu, and two red arrows point from the text descriptions below to this highlighted area.

Prompt User: To maintain data security, especially if data source contains sensitive information, it is advisable to ask user to supply their own credentials every time the data source is to be used.

Embed Credentials: If data in data source is not sensitive and seamless automated refresh is required, embedding your personal credentials may be appropriate. There is an option to use the system generic ID but this can only be done by the System Administrator

Connecting to a Data Source (1)

The image shows two windows from the Tableau desktop application. The left window is a 'Connect' dialog with a sidebar containing options like 'To a File' (Excel, Text file, Access, JSON file, PDF file, Spatial file, Statistical file), 'More...', 'To a Server' (Tableau Server), and a red-circled '1'. The right window shows a list of connected servers with 'qa.visualizedata.ucop.edu' selected, indicated by a red circle labeled '2'. A red arrow points from the 'Degree Types DS' entry in the server list to the 'Degree Types DS' entry in the 'Data Sources' table below it.

Connected to Tableau Server as Ola Popoola https://qa.visualizedata.ucop.edu

Data Source	Live/Last Extra	Project	Owner	Modified
Degree Types DS	(i) Live	Default	Ola Popoola	6 minutes ago

Connecting a Data Source (2)

The screenshot shows the Tableau Data Sources page. At the top, it displays the connection information: "Connected to Tableau Server as Ola Popoola" and the URL "http://qa.visualizedata.ucop.edu". To the right, there are "Connection" and "Filters" options. The "Connection" section has a radio button for "Live" selected, while "Extract" is unselected. The "Filters" section shows "0" filters and a "Add" link.

A red circle labeled "3" highlights the "Degree Types DS" entry in the list of data sources. This entry is highlighted with a blue background. It includes columns for "Data Source", "Last Extra", "Project", "Owner", and "Modified".

Data Source	Last Extra	Project	Owner	Modified
Degree Types DS	Live	Default	Ola Popoola	6 minutes ago
EAP Aggregated for Dashboard (local copy)	Sep 25, 2:22 ...	Default	Krishna Malipatel	Sep 25, 2:22 PM
EAP Dashboard Data Aggregated by Term (local copy)	Sep 25, 2:23 ...	Default	Krishna Malipatel	Sep 25, 2:23 PM
eap_wage (BMOORETR)	Sep 25, 2:23 ...	Default	Krishna Malipatel	Sep 25, 2:23 PM

A red circle labeled "4" highlights the first row of the detailed view for "Degree Types DS". This view shows columns for "Dgr Ty", "Dgr Nam", and "Dgr Lvl".

Abc IRIS_DEGREE_TYP...	Abc IRIS_DEGREE_TYP...	Abc IRIS_DEGREE_TYP...
Dgr Ty	Dgr Nam	Dgr Lvl
AU. D.	DOCTORATE IN AUDIO...	2
B.ARCH.	BACHELOR OF ARCHI...	1
B.L.A.	BACHELOR OF LANDS...	1
B.S.	BACHELOR OF SCIENCE	1
D.D.S.	DOCTOR OF DENTAL S...	2

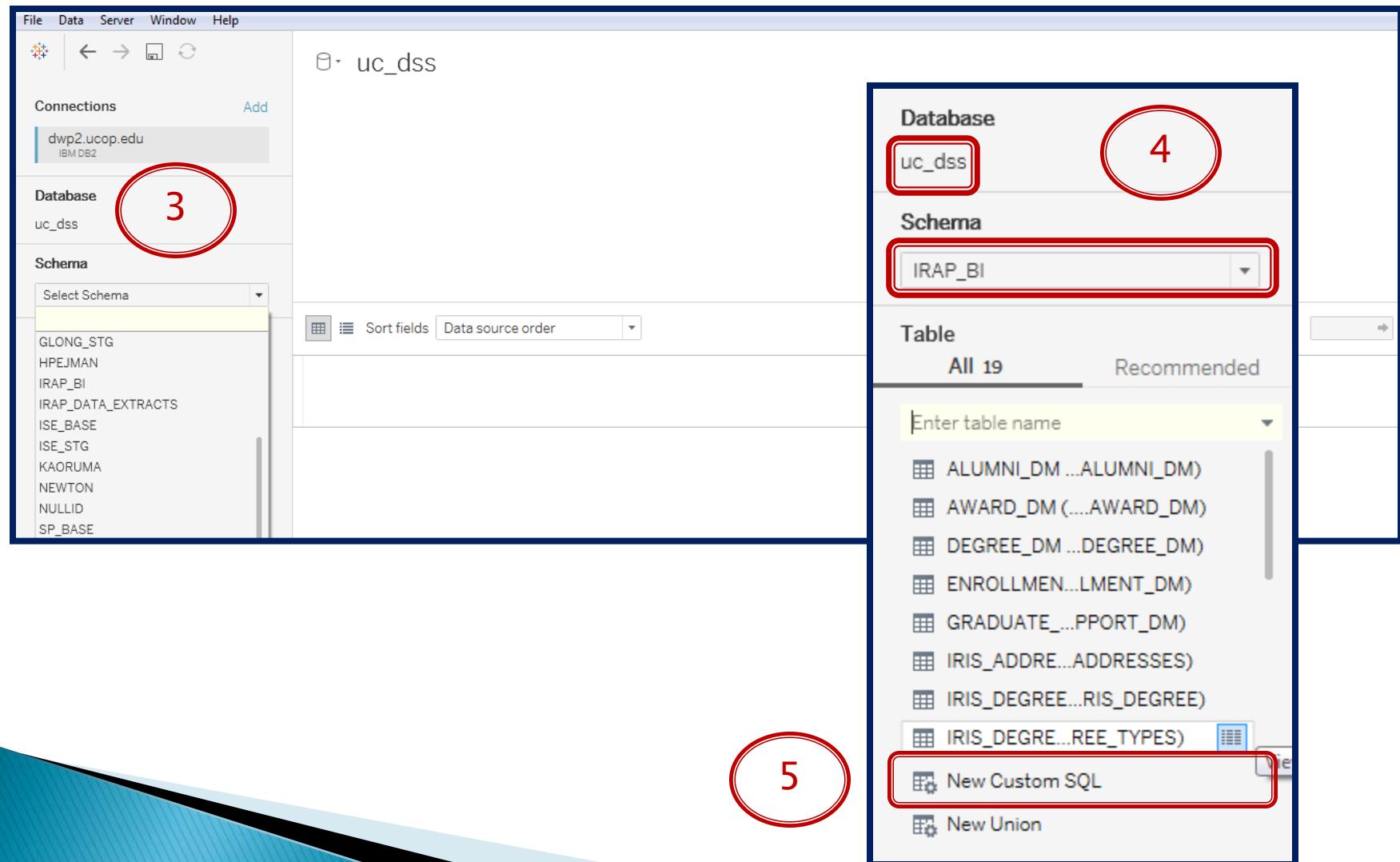
Creating a Custom SQL (1)

The screenshot shows the Tableau 'Connect' dialog. On the left, under 'To a File', options like Excel, Text file, Access, JSON file, PDF file, Spatial file, Statistical file, and More... are listed. Under 'To a Server', options like Tableau Server, Microsoft SQL Server, MySQL, Oracle, Amazon Redshift, and More... are listed. The 'More...' button is circled with a red number 1.

In the center, a search bar is at the top, followed by a grid of database connection options. The 'IBM DB2' option is highlighted with a red circle and circled with a red number 1. Other options include Tableau Server, Actian Matrix, Actian Vector, Hortonworks Hadoop Hive, HP Vertica, IBM BigInsights, Oracle Essbase, Pivotal Greenplum Database, PostgreSQL, Presto, Progress OpenEdge, Amazon Athena, Amazon Aurora, Amazon EMR, Amazon Redshift, Anaplan, Apache Drill, Aster Database, Cisco Information Server, Cloudera Hadoop, DataStax Enterprise, Dropbox, EXASOL, Firebird, Google Analytics, Google BigQuery, MapR Hadoop Hive, Kognitio, Marketo, MarkLogic, MemSQL, Microsoft Analysis Se, Microsoft PowerPivot, Microsoft SQL Server, MonetDB, MongoDB BI Connect, MySQL, OData, OneDrive, and Other Databases (ODBC).

A modal dialog for 'IBM DB2' is open on the right, circled with a red number 2. It contains fields for 'Server:' (dwp2.ucop.edu), 'Port:' (50001), 'Database:' (uc_dss), and a password field. A red box highlights the 'Enter information to sign in to the database:' section, which includes 'Username:' (opopoola) and 'Password:' (redacted). At the bottom are 'Initial SQL...' and 'Sign In' buttons.

Creating a Custom SQL (2)



Creating a Custom SQL (3)

Edit Custom SQL

```
SELECT COUNT (DISTINCT STUD_ID) AS STUDENT_COUNT,  
       ACADEMIC_YR,  
       TERM_NAME,  
       DEG_AWARD_CAT_DESC,  
       CAMPUS_LOCATION  
  FROM IRAP_BI.DEGREE_DM  
 GROUP BY ACADEMIC_YR,  
          TERM_NAME,  
          DEG_AWARD_CAT_DESC,  
          CAMPUS_LOCATION  
 ORDER BY ACADEMIC_YR,  
         CAMPUS_LOCATION,  
         TERM_NAME,  
         DEG_AWARD_CAT_DESC
```

6

7

Preview Results... Insert Parameter ▾

View Data: IRAP_BI

CAMPUS_LOCATION	DEG_AWARD_CAT_DESC	TERM_NAME	ACADEMIC_YR	STUDENT_COUNT
Berkeley	Bachelor	Fall	1,999	1,567
Berkeley	Candidate In Philosophy	Fall	1,999	33
Berkeley	Credentials and Certificates	Fall	1,999	64
Berkeley	Doctorate	Fall	1,999	368
Berkeley	Juris Doctor	Fall	1,999	2
Berkeley	Master	Fall	1,999	420
Berkeley	Bachelor	Spring	1,999	3,833
Berkeley	Candidate In Philosophy	Spring	1,999	18
Berkeley	Credentials and Certificates	Spring	1,999	52
Berkeley	Doctor of Optometry	Spring	1,999	55
Berkeley	Doctorate	Spring	1,999	388
Berkeley	Juris Doctor	Spring	1,999	281
Berkeley	Master	Spring	1,999	1,192
Berkeley	Bachelor	Summer	1,999	702
Berkeley	Doctor of Optometry	Summer	1,999	2
Davis	Bachelor	Fall	1,999	744
Davis	Doctor of Medicine	Fall	1,999	1
Davis	Doctor of Veterinary Medicine	Fall	1,999	1

8

Creating a Custom SQL (4)

Custom SQL Query (IRAP_BI)

Connection Live Extract

Filters 0 | Add

Custom SQL Query

9

#	#	Abc	Abc	Abc	
Custom SQL Query	Custom SQL Query	Custom SQL Query	Custom SQL Query	Custom SQL Query	
STUDENT_COUNT	ACADEMIC_YR	TERM_NAME	DEG_AWARD_CA...	CAMPUS_LOCATI...	
1,567	1,999	Fall	Bachelor	Berkeley	
33	1,999	Fall	Candidate In Philosop...	Berkeley	
64	1,999	Fall	Credentials and Certi...	Berkeley	
368	1,999	Fall	Doctorate	Berkeley	
2	1,999	Fall	Juris Doctor	Berkeley	

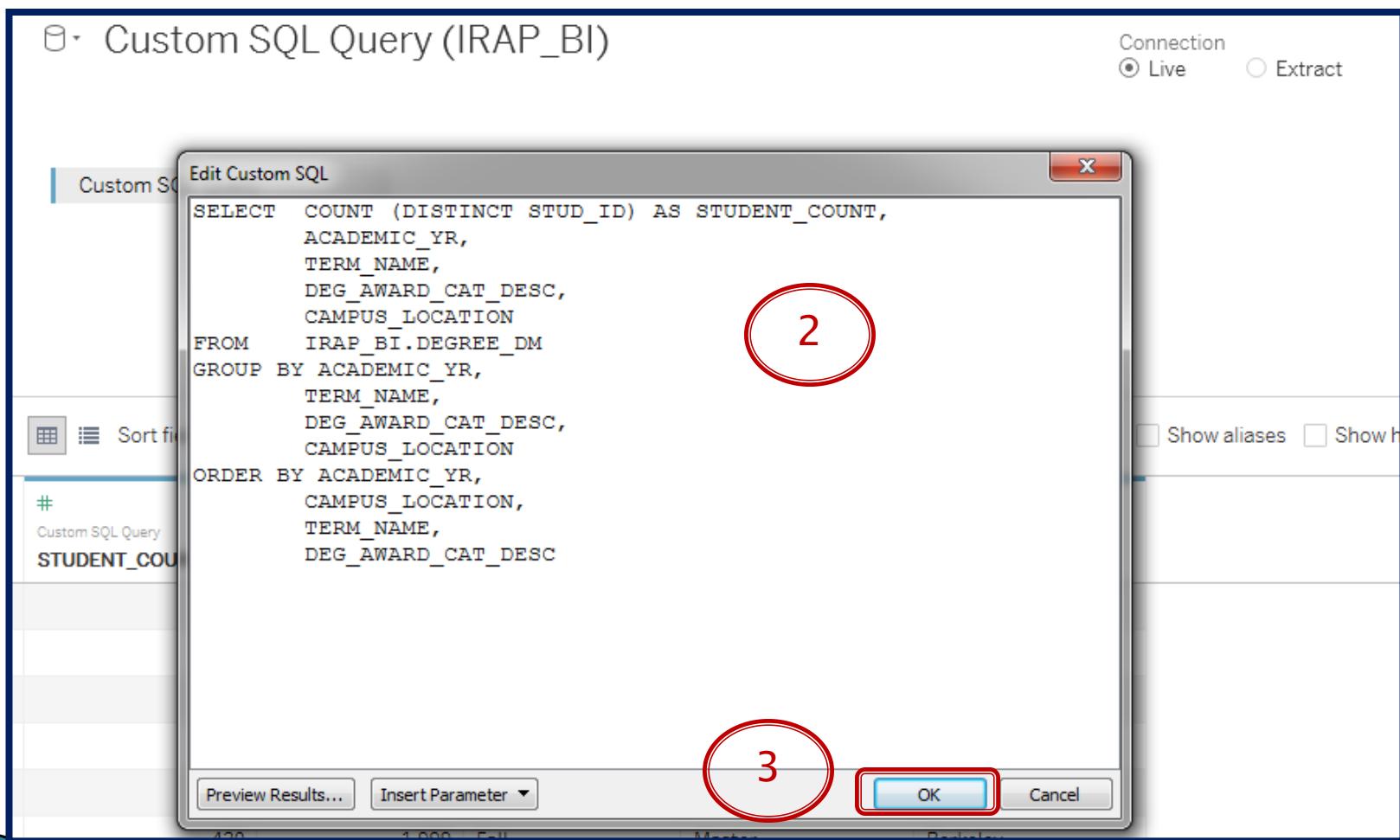
Editing a Custom SQL (1)

The screenshot shows a BI tool interface with the following details:

- Connections:** dwp2.ucop.edu (IBM DB2) is selected.
- Database:** uc_dss
- Schema:** IRAP_BI
- Table:** All 19 tables are listed, including ALUMNI_DM, AWARD_DM, DEGREE_DM, ENROLLMENT_DM, GRADUATE_DM, IRIS_ADDRESSES, and IRIS_DEGREE.
- Custom SQL Query (IRAP_BI):** A context menu is open over a table row, with the "Edit Custom SQL Query" option highlighted by a red box and circled with a red number 1.
- Data:** The table displays the following data:

#	STUDENT_COUNT	ACADEMIC_YR	TERM_NAME	DEG_AWARD_CA...	CAMPUS_LOCATI...
1,567	1,999	Fall	Bachelor	Berkeley	
33	1,999	Fall	Candidate In Philosoph...	Berkeley	
64	1,999	Fall	Credentials and Certi...	Berkeley	
368	1,999	Fall	Doctorate	Berkeley	
2	1,999	Fall	Juris Doctor	Berkeley	

Editing a Custom SQL (2)



Publishing a Custom SQL

The screenshot shows the Tableau desktop application. The menu bar at the top includes File, Data, Server, Window, and Help. The 'Server' menu is open, showing options: Signed In to https://qa.visualizedata.ucop.edu (IRAP Private), Open Workbook..., Publish Data Source, Start Tableau Bridge Client, and Tableau Public. The 'Publish Data Source' option is highlighted with a red circle labeled '1'. Below the menu, the 'Database' section shows 'uc_dss' and the 'Schema' dropdown is set to 'IRAP_BI'. The 'Table' section shows 'All 19' tables, with 'Recommended' selected. A table preview is visible with columns STUDENT_COUNT, ACADEMIC_YR, and TERM_NAME, and rows showing values like 1,567, 1,999, Fall, and 33, 1,999, Fall.

Tableau

Data source 'Degree Count by Degree Category and Location' successfully published to the Tableau Server.

3

The dialog box is titled 'Publish Data Source to Tableau Server'. It contains the following fields:

- Project: Default (circled with red '2')
- Name: Degree Count by Degree Category and Location
- Description: This is a custom SQL that provides a count of degrees by campus, academic year, term and campus location.
- Tags: Add
- Permissions: Permissions are locked by the site admini... View
- Authentication: Prompt user Edit
- More Options: Update workbook to use the published data source
- Note: Tableau Server will temporarily access the credentials provided for '[dwp2.ucop.edu]' to confirm it can maintain a live data connection.

OK

2

Publish

Creating an Extract (1)

The screenshot shows the Tableau 'Connect' interface. On the left, under 'To a File', options like Excel, Text file, Access, JSON file, PDF file, Spatial file, Statistical file, and More... are listed. A red circle labeled '1' highlights the 'More...' option. Under 'To a Server', options like Tableau Server, Microsoft SQL Server, MySQL, Oracle, Amazon Redshift, and More... are listed. A red circle labeled '2' highlights the 'More...' option under 'To a Server'. The main area shows a grid of database connection options. The 'IBM DB2' option is selected, highlighted by a blue background. A modal dialog box for 'IBM DB2' is displayed on the right, containing fields for 'Server' (dwp2.ucop.edu), 'Port' (50001), 'Database' (uc_dss), and 'Username' (opopoola). The password field contains masked text. Below the dialog are 'Initial SQL...' and 'Sign In' buttons.

Search

Tableau Server Hortonworks Hadoop Hive Oracle Essbase Other Databases (ODBC)

Actian Matrix HP Vertica Pivotal Greenplum Database

Actian Vector IBM BigInsights PostgreSQL

Amazon Athena Amazon Aurora IBM DB2 (Netezza) Presto

Amazon EMR Kognitio Progress OpenEdge

Amazon Redshift MapR Hadoop Hive

Anaplan Marketo

Apache Drill MarkLogic

Aster Database MemSQL

Cisco Information Server Microsoft Analysis Se

Cloudera Hadoop Microsoft PowerPivot

DataStax Enterprise Microsoft SQL Server

Dropbox MonetDB

EXASOL MongoDB BI Connect

Firebird MySQL

Google Analytics OData

Google BigQuery OneDrive

Connect

To a File

Excel

Text file

Access

JSON file

PDF file

Spatial file

Statistical file

More...

To a Server

Tableau Server

Microsoft SQL Server

MySQL

Oracle

Amazon Redshift

More... >

IBM DB2

Server: dwp2.ucop.edu Port: 50001

Database: uc_dss

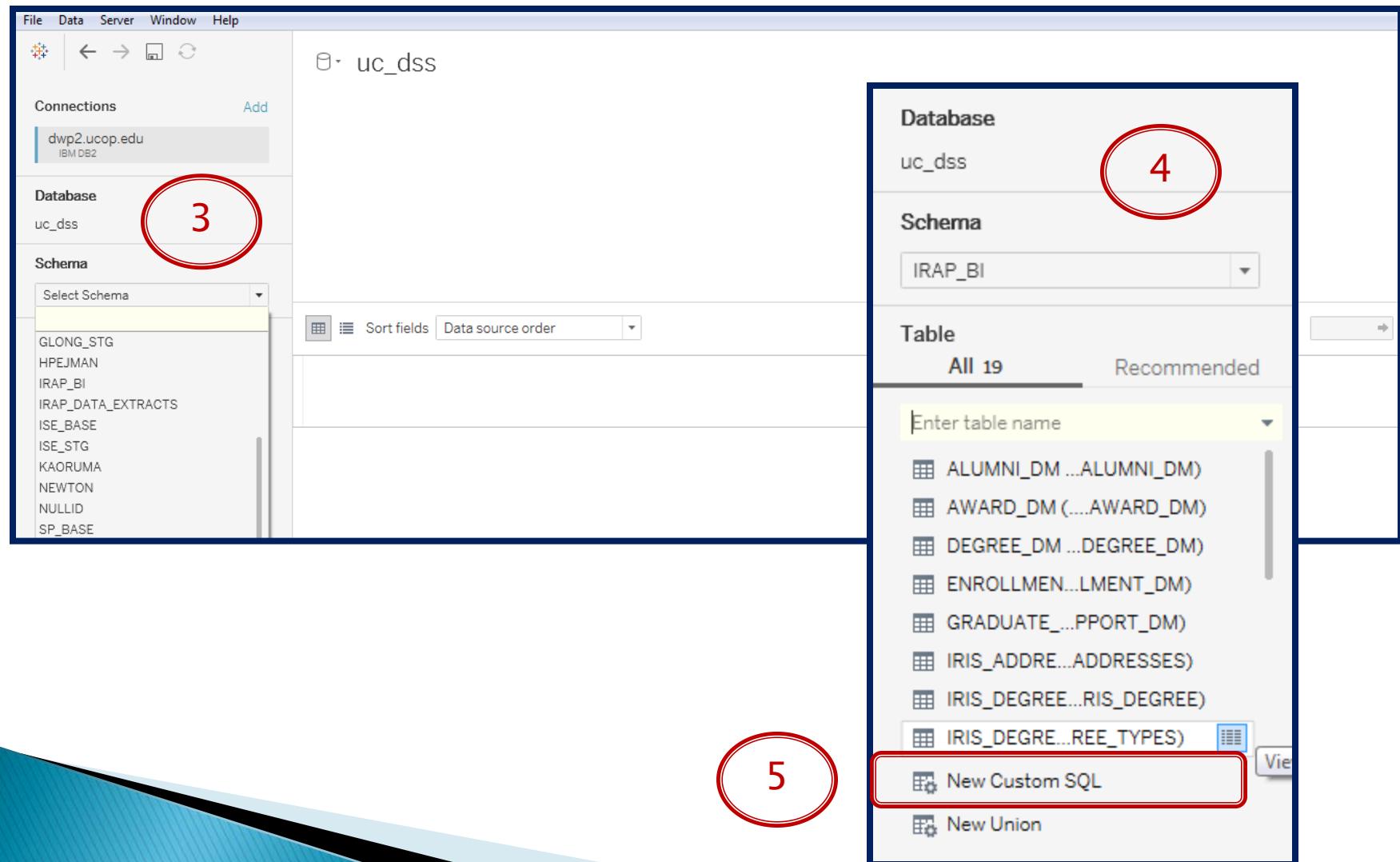
Enter information to sign in to the database:

Username: opopoola

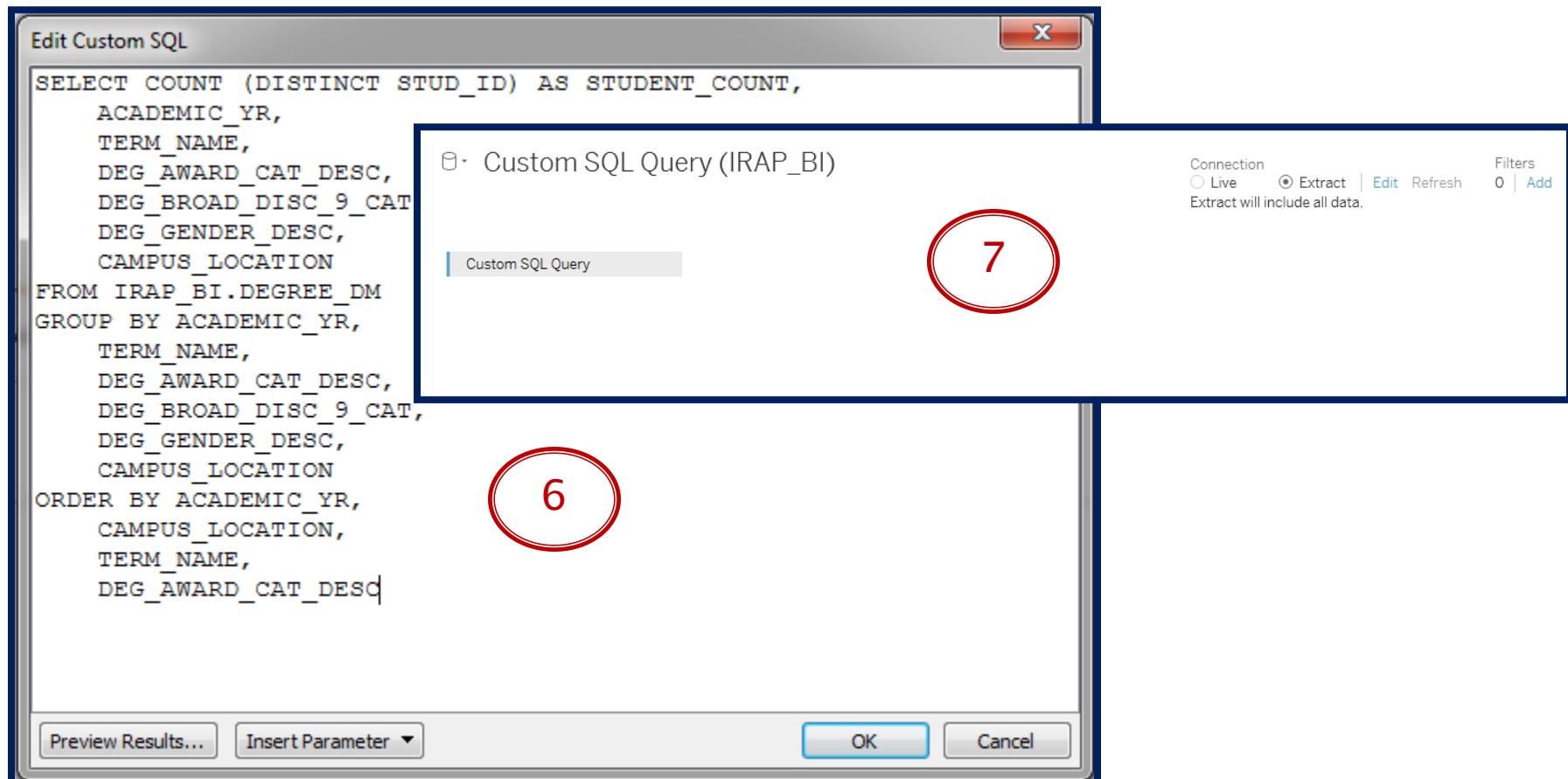
Password: [REDACTED]

Initial SQL... Sign In

Creating an Extract (2)



Creating an Extract (3)



Creating an Extract (4)

The screenshot shows the Tableau Server interface. The top navigation bar includes File, Data, Worksheet, Dashboard, Story, Analysis, Map, Format, Server, Window, and Help. The Server dropdown is open, showing options like Signed In to https://qa.visualizedata.ucop.edu (IRAP Private), Open Workbook..., Publish Workbook..., Publish Data Source, Create User Filter, Start Tableau Bridge Client, and Tableau Public. A red circle labeled '8' highlights the 'Custom SQL Query (IRAP_BI)' option under Publish Data Source.

The main workspace shows a sidebar with Data, Analytics, Dimensions, and Measures. The Dimensions section lists several fields: CAMPUS_LOCATION, DEG_AWARD_CAT_DESC, DEG_BROAD_DISC_9_CAT, DEG_GENDER_DESC, and TERM_NAME. The right pane displays a 'Documents library' titled 'Documents li...' with a list of items: TABLEAU DATA EXTRACTS, POWERPOINT PRESENTATIONS, MISCELLANEOUS WORD DOCS, MISCELLANEOUS EXCEL DOCS, MISCELLANEOUS VISIO DOCS, and TEXT FILES. A red circle labeled '9' highlights the 'Documents' folder in the sidebar.

At the bottom, there is a file dialog for saving the extract. The 'File name:' field contains 'Degree Data By Gender and Broad Discipline'. The 'Save as type:' dropdown is set to 'Tableau Data Extract (*.tde)'. The overall interface is light blue and white, typical of the Tableau software design.

Connecting to an Extract (1)

Extract on local PC

10

Degree Data By Gender and Broad Discipline.tde

All Tableau Files (*.twb *.twbx *)

Open Cancel

#	Custom SQL Query ACADEMIC_YR	Abc CAMPUS_LOCATI...	Abc Custom SQL Query DEG_AWARD_CA...	Abc Custom SQL Query DEG_BROAD_DIS...	Abc Custom SQL Query DEG_GENDER_DE...	#	Custom SQL Query STUDENT_COUNT	Abc Custom SQL Query TERM_NAME
1,999	Berkeley	Bachelor	Arts	Female		28	Fall	
2,000	Berkeley	Bachelor	Arts	Female		26	Fall	
2,001	Berkeley	Bachelor	Arts	Female		34	Fall	
2,002	Berkeley	Bachelor	Arts	Female		40	Fall	
2,003	Berkeley	Bachelor	Arts	Female		33	Fall	

Publishing Extract to Server (1)

The screenshot shows the Tableau Data Extract interface. At the top, there's a navigation bar with icons for back, forward, and refresh. Below it is a 'Connections' section with a 'Add' button. A red box highlights the 'Extract (Extract.Extract)' item in the 'Connections' list. In the main area, a title 'Degree Data By Gender and Broad Discipline Extract' is followed by an 'Extract' tab. To the right of the extract tab, a red circle labeled '1' contains a red box around the 'Connection' settings, which show 'Extract' selected. Another red box highlights the status message 'Extract will include all data.' at the bottom of the connection settings. On the far right, there are 'Filters' and 'Refresh' buttons.

The screenshot shows the Tableau Server interface. The top menu includes 'File', 'Data', 'Server', 'Window', and 'Help'. The 'Server' menu is open, showing 'Signed In to https://qa.visualizedata.ucop.edu (IRAP Private)'. Under the 'Server' menu, 'Publish Data Source' is selected, and its submenu 'Degree Data By Gender and Broad Discipline Extract' is highlighted with a red circle labeled '2'. Other options in the submenu include 'Start Tableau Bridge Client' and 'Tableau Public'. At the bottom left, there's a 'Table' section with a red box highlighting 'Extract (Extract.Extract)'. The main workspace shows the title 'By Gender and Broad Discipline Extract'.

Publishing Extract to Server (2)

The image shows three overlapping windows illustrating the process of publishing a data source to Tableau Server:

- Project Selection:** A "Publish Data Source to Tableau Server" dialog box is shown. The "Project" dropdown is set to "Default". A red circle labeled "3" highlights this selection.
- Success Confirmation:** A "Tableau" confirmation dialog box appears, stating "Data source 'Degree Data By Gender and Broad Discipline Extract' successfully published to the Tableau Server." A red circle labeled "4" highlights this message.
- Data Sources List:** A "Data Sources" page from the Tableau interface lists various data sources. One entry, "Degree Data By Gender and Broad Discipline Extract", is highlighted with a red box. A red circle labeled "5" highlights this entry.

Publish Data Source to Tableau Server Dialog (Left):

- Project: Default (circled 3)
- Name: Degree Data By Gender and Broad Discipline Extract
- Description: Extract of Degree Data by Gender and Broad Discipline
- Tags: Add
- Permissions: Permissions are locked by the site administrator.
- More Options:
 - Include external files
 - Update workbook to use the published data source
- Publish** button

Tableau Data Sources Page (Bottom):

Name	Views: All	Workbooks	Connects to	Project	Owner	Live / Last extract
Degree Count by Degree Category and Location	0	0	dwp2.uop.edu	Default	Ola Popoola	LIVE
Degree Data By Gender and Broad Discipline Extract (circled 5)	0	0	Degree Data By Gender and Broad Discipline.tde	Default	Ola Popoola	LIVE
Degree Types DS	0	0	dwp2.uop.edu	Default	Ola Popoola	LIVE
EAP Aggregated for Dashboard (local copy)	0	0	dwp2.uop.edu	Default	Krishna Malipati	EXTRACT Sep 25, 2017, 2:22 PM
EAP Dashboard Data Aggregated by Term (local copy)	0	0	dwp2.uop.edu	Default	Krishna Malipati	EXTRACT Sep 25, 2017, 2:23 PM
eap_wage (BMOORETR)	0	0	dwp3.uop.edu	Default	Krishna Malipati	EXTRACT Sep 25, 2017, 2:23 PM

Connecting to Published Extract

The screenshot shows the Tableau Server interface. At the top, there's a navigation bar with File, Data, Server, Window, and Help. Below it is a toolbar with icons for back, forward, search, and refresh. The main area displays a list of data sources under the heading "Degree Data By Gender and Broad Discipline Extract". A red box highlights the "Extract" radio button in the top right corner of the interface. A red arrow points from this highlighted area down to the text "Extract on Tableau Server" which is overlaid on the data grid.

Connected to Tableau Server as Ola Popoola <https://qa.visualizedata.ucop.edu>

Connection Live Extract Filters 0 | Add

Search

Data Source	Live/Last Extra	Project	Owner	Modified
Degree Count by Degree Category and Location	Live	Default	Ola Popoola	Today, 11:45 AM
Degree Data By Gender and Broad Discipline Extract	Live	Default	Ola Popoola	7 minutes ago
Degree Types DS	Live	Default	Ola Popoola	29 minutes ago
EAP Aggregated for Dashboard (local copy)	Sep 25, 2:22 ...	Default	Krishna Malipatil	Sep 25, 2:22 PM

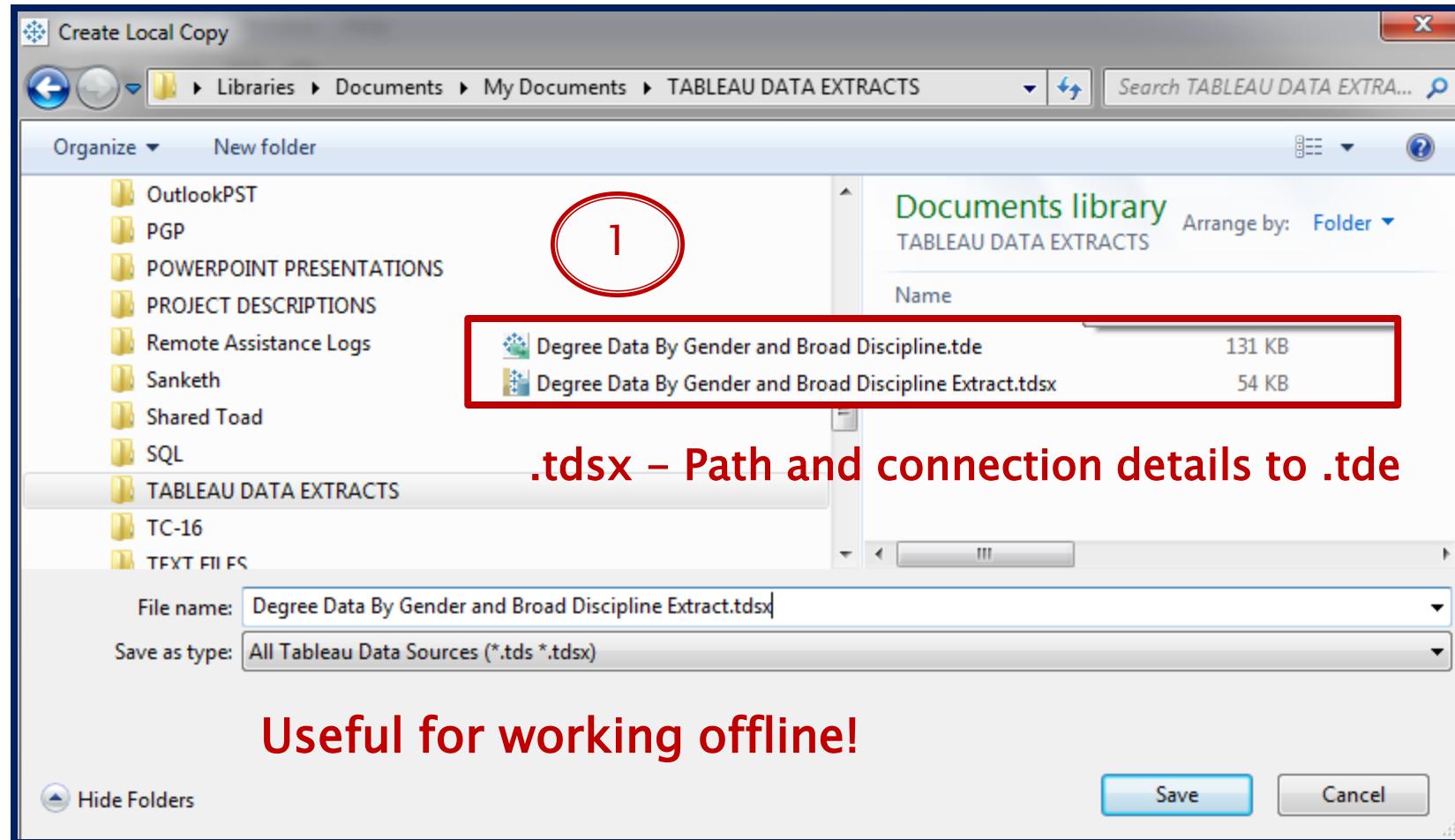
Sort fields Data source order ▾

Extract on Tableau Server

#	Abc	Abc	Abc	Abc	#	Abc
Custom SQL Query						
ACADEMIC_YR	CAMPUS_LOCATI...	DEG_AWARD_CA...	DEG_BROAD_DIS...	DEG_GENDER_DE...	STUDENT_COUNT	TERM_NAME
1,999	Berkeley	Bachelor	Arts	Female	28	Fall
2,000	Berkeley	Bachelor	Arts	Female	26	Fall
2,001	Berkeley	Bachelor	Arts	Female	34	Fall
2,002	Berkeley	Bachelor	Arts	Female	40	Fall

It may be beneficial to create an extract based on an extract...

Create Local Copy of an Extract (1)



Create Local Copy of an Extract (2)

The screenshot shows the Tableau interface with the 'Data' menu open. A red circle highlights the 'Extract Data...' option in the context menu that appears when right-clicking on a data source.

Data menu options:

- New Data Source
- Paste
- Refresh All Extracts...
- Edit Relationships...
- Replace Data Source...
- Tableau Data Server
- Degree Data By Gender and Broad Discipline Extract (local copy) **(selected)**

Marks shelf:

- Automatic
- Color
- Size
- Text
- Detail
- Tooltip

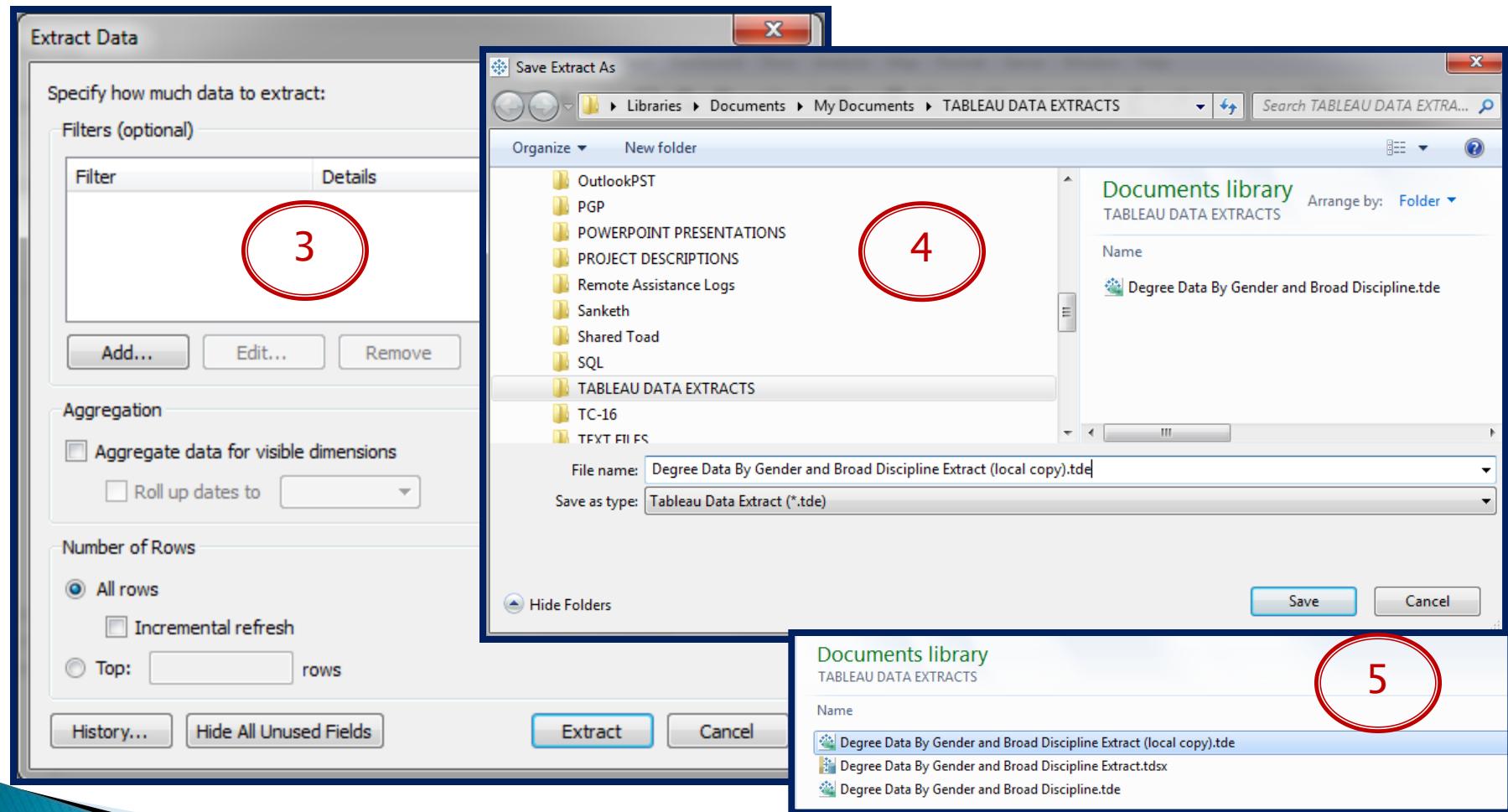
Measures shelf:

- # ACADEMIC_YR
- # STUDENT_COUNT
- =# Number of Records
- # Measure Values

Context menu for the selected data source:

- Edit Data Source...
- Refresh F5
- View Data...
- Rename...
- Duplicate
- Close
- Extract Data...** **(highlighted with a red circle)**
- Use Extract
- Extract
- Edit Data Source Filters...
- Replace Data Source...
- Date Properties...
- Edit Aliases...
- Publish to Server...

Create Local Copy of an Extract (3)



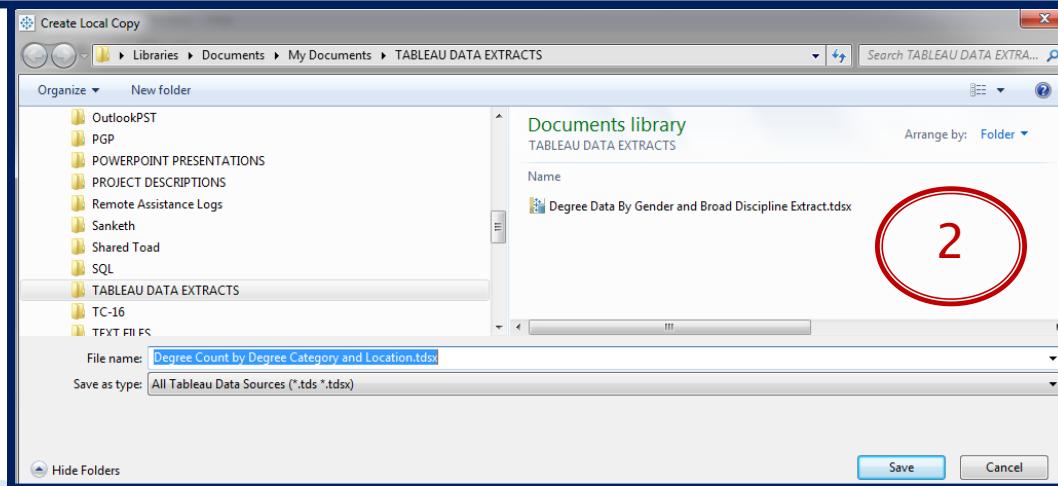
Create Local Copy of Live Data Source (1)

File Data Server Window Help

qa.visualizedata.ucop.edu

Connected to Tableau Server as Ola Popoola <https://qa.visualizedata.ucop.edu>

Data Source	Live/Last Extra	Project	Owner	Modified
Degree Count by Degree Category and Location	Live	Default	Ola Popoola	Today, 11:45 AM
Degree Data By Gender and Broad Discipline Extract	Download a copy	Default	Ola Popoola	48 minutes ago
Degree Types DS	Live	Default	Ola Popoola	Today, 1:03 PM
EAP Aggregated for Dashboard (local copy)	Sep 25, 2:22 ...	Default	Krishna Malipatel	Sep 25, 2:22 PM



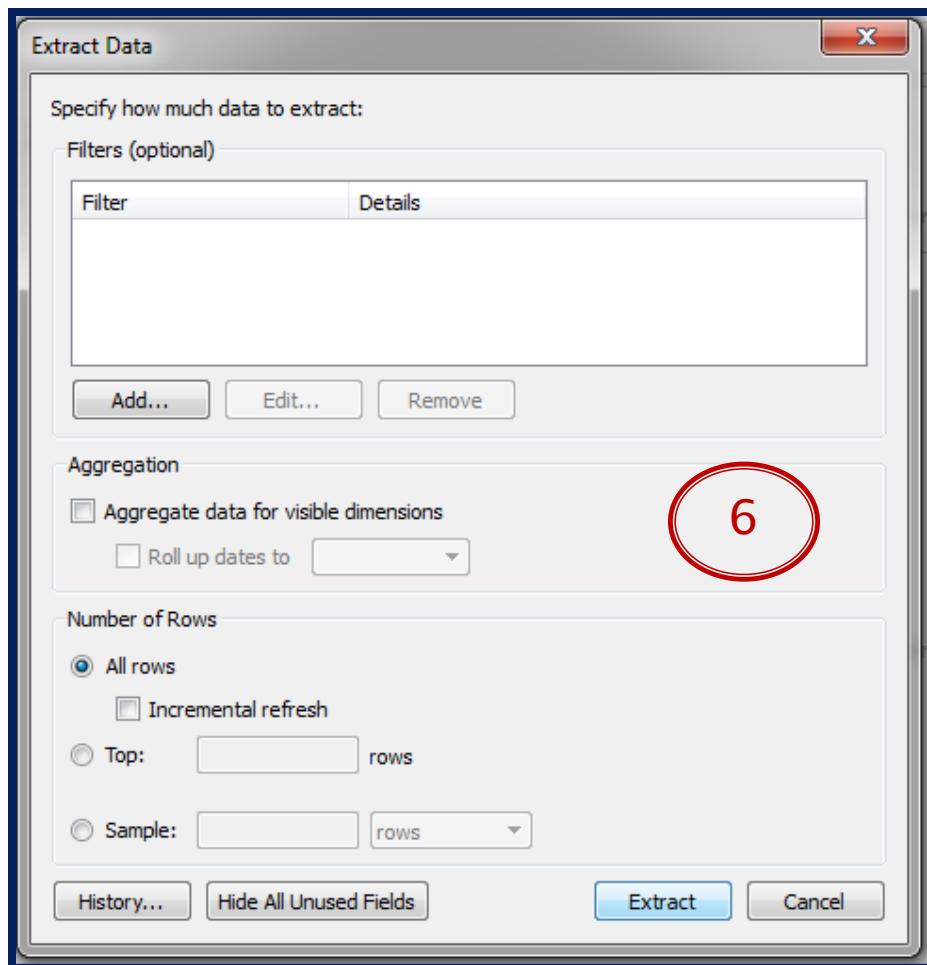
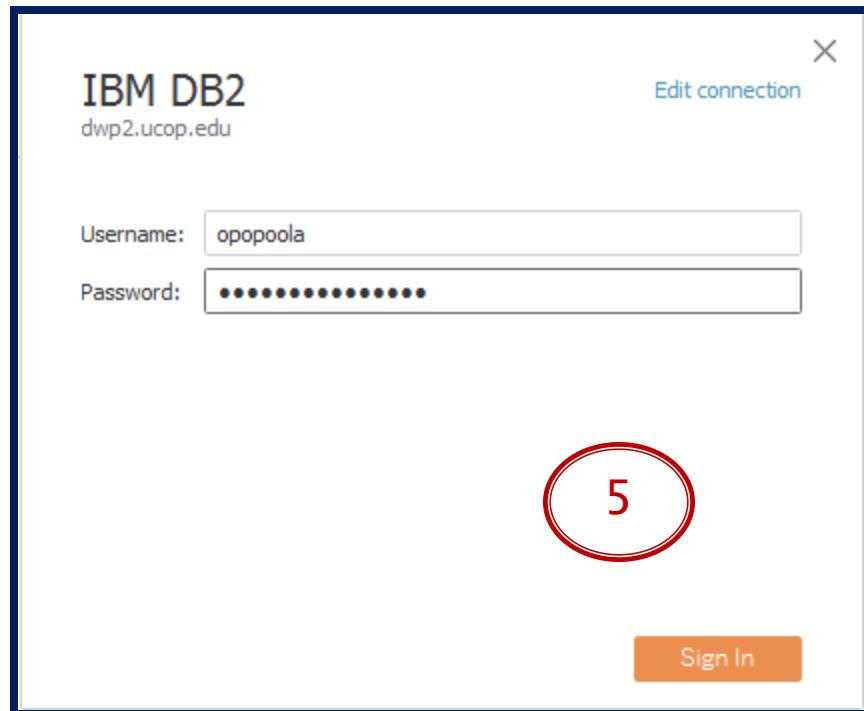
Create Local Copy of Live Data Source (2)

The screenshot shows the Tableau desktop interface. A 'Custom SQL Warning' dialog box is open in the foreground, asking if the user wants to connect to custom SQL functions. The SQL statement is:

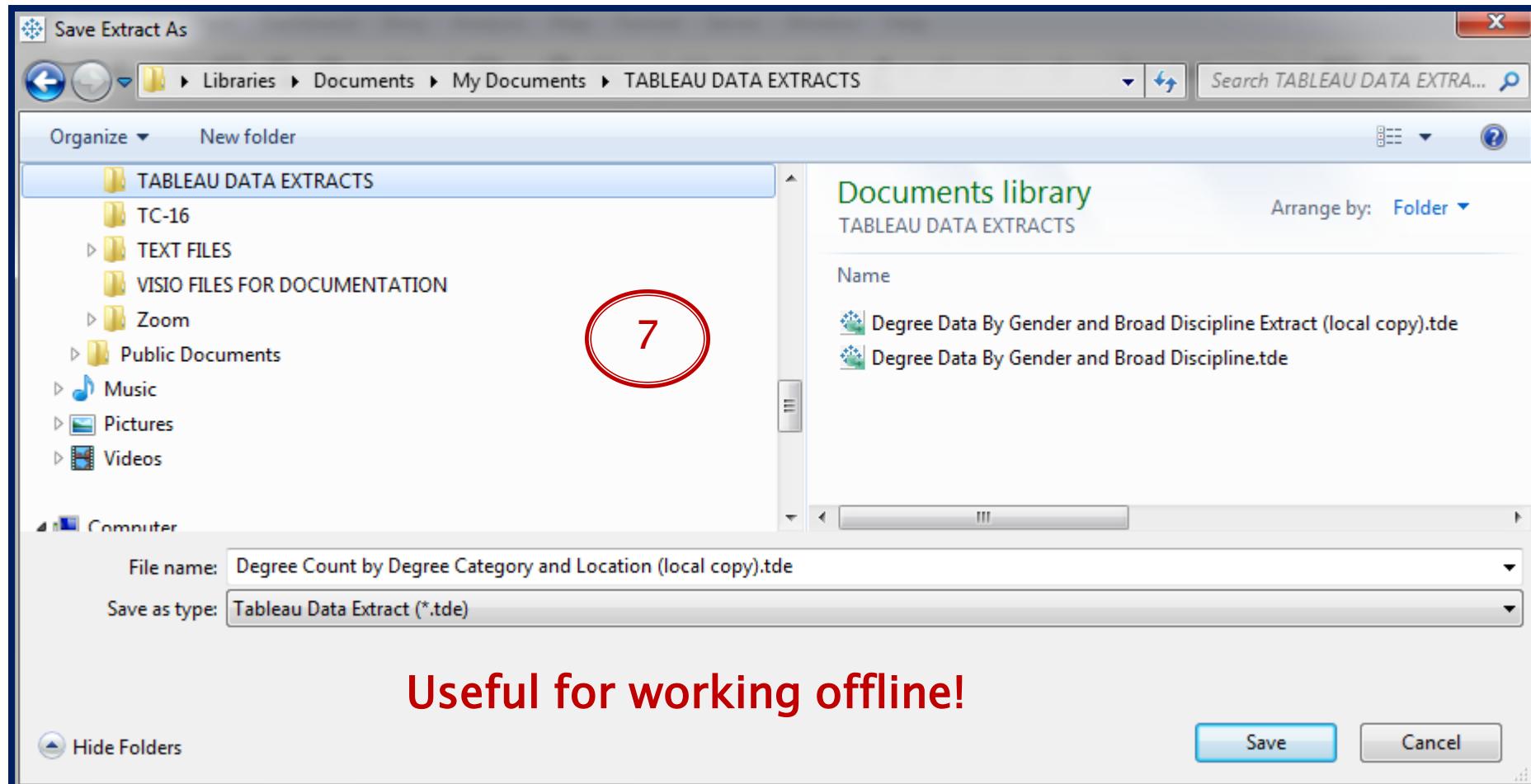
```
SELECT COUNT(DISTINCT STUD_ID) AS STUDENT_COUNT,  
       ACADEMIC_YR,  
       TERM_NAME,  
       DEG_AWARD_CAT_DESC,  
       CAMPUS_LOCATION  
FROM IRAP_BI.DEGREE_DM  
GROUP BY ACADEMIC_YR,  
        TERM_NAME,  
        DEG_AWARD_CAT_DESC,  
        CAMPUS_LOCATION  
ORDER BY ACADEMIC_YR,  
        CAMPUS_LOCATION,  
        TERM_NAME,  
        DEG_AWARD_CAT_DESC
```

Below the dialog, the Tableau interface shows the 'Data' menu open, with the option 'Degree Count by Degree Category and Location (local copy)' selected. A red circle labeled '3' highlights the 'Yes' button in the dialog. A red circle labeled '4' highlights the 'Extract Data...' option in the 'Data' menu.

Create Local Copy of Live Data Source (3)



Create Local Copy of Live Data Source (4)



Data Sources & Security

- »» ▶ Data source security
- ▶ Data source certification

Data Source Security

- ▶ Data Source Security can be implemented at the project level
- ▶ User who publishes a data source/extract will have complete access to edit or delete the data source
- ▶ Site Administrator and System Administrator will have access to publish, modify all data sources.

Data Source Certification

Available in 10.4 – Read more at

<https://www.tableau.com/about/blog/2017/7/certification-and-data-source-recommendations-boost-data-discovery-and-governance>

- ▶ Data source certification enables your data stewards to promote specific data sources in your Tableau deployment as trusted and ready for use.
- ▶ Project leaders, site admins, and Tableau Server administrators have permission to certify data sources.
- ▶ After receiving certification, certified data sources receive preferential treatment in search results and stand out in data source lists in Tableau Server and Tableau Desktop

Refreshing Data Sources

- »» ▶ Refreshing extracts
- ▶ Full refresh
- ▶ Incremental refresh

Refreshing Extracts – Desktop

Refreshing extracts from Tableau Desktop

- ▶ Tableau Desktop users can refresh extracts they publish and own. They can do this the following ways:
- ▶ At publish time: When an author publishes a workbook or data source that uses an extract, that author can add it to server refresh schedule. The refresh can be a full or an incremental refresh.

Refreshing - Desktop

Credentials will need to be embedded for refresh!

Options are set on server

Project Default

Name Degree Custom SQL Data Source Test

Description This is just a test!

Tags Add

Refresh Schedule (Full Extract)

First business day of the month 9am (The 1st day of...)

Permissions Permissions are locked by the site admini... View

Authentication Refresh not enabled Edit

More Options Update workbook to use the published data source

Drop field here

Marks Automatic

Color Size Text

Detail Tooltip

Drop field here

None

- End of the month (The last day of every month at 11:00PM)
- Every 5th Day of Month (The 5th day of every month at 02:0...)
- Every Day at 6 am (Every day at 06:00AM)
- Every Hour from 6am to 6pm Everyday (Every 1 hour from 06...)
- First business day of the month 9am (The 1st day of every m...)
- Last business day of the month 9am (The last day of every m...)
- Saturday night (Every Sat at 11:00PM)
- Weekday early mornings (Every weekday at 04:00AM)
- Weekdays 6am PST (Every weekday at 06:00AM)

Select or drag data
Use the Shift or Ctrl key to select multiple fields

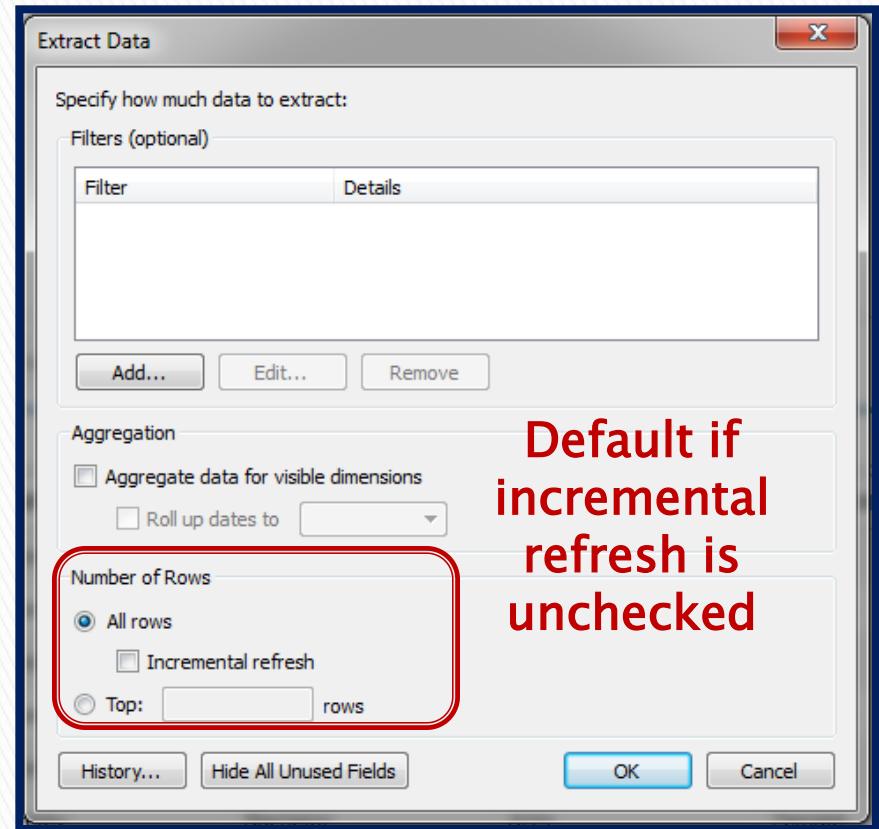
Tableau

Data source 'Degree Custom SQL Data Source Test' successfully published to the Tableau Server.

OK

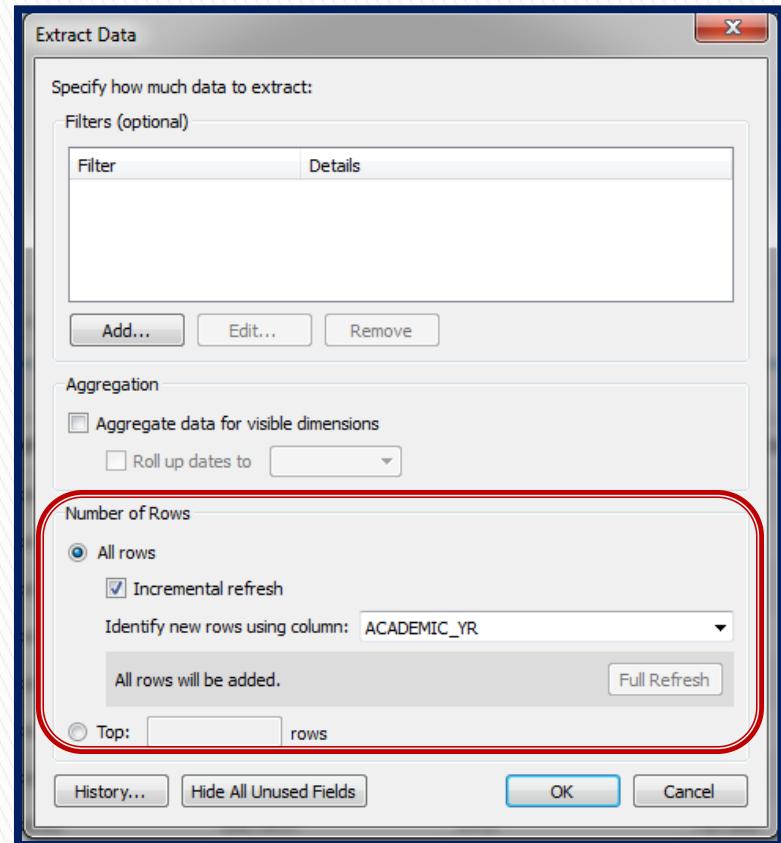
Full Refresh – Desktop

- ▶ By default, extracts are fully refreshed. That means that every time you refresh the extract, all of the rows are replaced with the data in the underlying data source.
- ▶ If the extract is not set up for incremental extract, selecting to refresh the extract will fully refresh the extract.



Incremental Refresh – Desktop

- ▶ Rather than refreshing the entire extract, you can set it up to only add the rows that are new since the last time you extracted data.
- ▶ For example, fall student enrollment is updated in the data mart in the fall of every academic year. Rather than rebuild the entire extract frequently, you can just the data for fall of the new year.



Refreshing Extracts – Server

- ▶ In the Tableau Server web environment, both server and site administrators can run extract refreshes on-demand on the Schedules page.

Refreshing - Server

The screenshot shows the Tableau Data Sources interface. The main area displays a list of data sources with columns for Name, Views, Workbooks, Connects to, Project, Owner, and Live / Last extract. A context menu is open over the data source named "EAP Aggregated for Dashboard (local copy)". The menu options are: New Workbook, Download, Tag..., Permissions..., Move..., Change Owner, Refresh Extracts..., Edit Connection..., Revision History..., and Delete... . The "Refresh Extracts..." option is highlighted with a red box.

Name	Views: All	Workbooks	Connects to	Project	Owner	Live / Last extract
Degree Count by Degree Category and Location	0	0	dwp2.ucop.edu	Default	Ola Popoola	LIVE
Degree Data By Gender and Broad Discipline Extract	0	0	Degree Data By Gender and Broad Discipline.tde	Default	Ola Popoola	LIVE
Degree Types DS	0	0	dwp2.ucop.edu	Default	Ola Popoola	LIVE
EAP Aggregated for Dashboard (local copy)	0	0	dwp2.ucop.edu	Default	Krishna Malipatel	EXTRACT Sep 25, 2017, 2:22 PM
EAP Dashboard Data Aggregated by Term (local copy)	0	0	dwp2.ucop.edu	Default	Krishna Malipatel	EXTRACT Sep 25, 2017, 2:23 PM
eap_wage (BMOORETR)	0	0	dwp3.ucop.edu	Default	Krishna Malipatel	EXTRACT Sep 25, 2017, 2:23 PM

Refreshing - Server

The screenshot shows the Tableau Data Sources interface. On the left, there are filters for General Filters, Project, Owner, Tag, and Data Source Filters. The main area displays a table of data sources with columns: Name, Views: All, Workbooks, Connects to, Project, Owner, Live / Last extract, and an alert icon. A red box highlights a modal dialog titled "Refresh Extracts" with the sub-section "Refresh Now". The dialog contains the text "Schedule a Refresh" and "Execute a full refresh right now on the data source "EAP Aggregated for Dashboard (local copy)". It features two buttons: "Cancel" and "Full Refresh".

Name	Views: All	Workbooks	Connects to	Project	Owner	Live / Last extract	
Degree Count by Degree Category and Location	0	0	dwp2.ucop.edu	Default	Ola Popola	LIVE	
Degree Data By Gender and Broad Discipline E	0	0	dwp2.ucop.edu	Default	Ola Popola	LIVE	
Degree Types DS	0	0	dwp2.ucop.edu	Default	Ola Popola	LIVE	
<input checked="" type="checkbox"/> EAP Aggregated for Dashboard (local copy)	0	0	dwp2.ucop.edu	Default	Krishna Malipatel	EXTRACT Sep 25, 2017, 2:22 PM	
EAP Dashboard Data Aggregated by Term (local co	0	0	dwp2.ucop.edu	Default	Krishna Malipatel	EXTRACT Sep 25, 2017, 2:23 PM	
eap_wage (BMOORETR)	0	0	dwp2.ucop.edu	Default	Krishna Malipatel	EXTRACT Sep 25, 2017, 2:23 PM	

Refreshing Server – Schedule

The screenshot shows the Tableau Data Sources interface. A modal window is open, titled "Refresh Extracts" for the data source "EAP Aggregated for Dashboard (local copy)". The modal contains two buttons: "Refresh Now" and "Schedule a Refresh". Below these buttons is a list of refresh frequency options, including "End of the month", "Every 5th Day of Month", "Every Day at 6 am", "Every Hour from 6am to 6pm Everyday", "First business day of the month 9am", "Last business day of the month 9am", "Saturday night", "Weekday early mornings", and "Weekdays 6am PST". At the bottom right of the modal is a green "Schedule Refreshes" button. Red annotations are present: a large red box labeled "Manual schedule" surrounds the modal; a red arrow points from the "Schedule a Refresh" button to the word "Frequency"; and a red box highlights the "Schedule Refreshes" button.

Best Practices

- »» ▶ **Published data source best practices**
- ▶ **Helpful links**

Published Data Source Best Practices

- ▶ Remove PII data to reduce risk of exposing sensitive information
- ▶ Remove fields that are unlikely to be used for visualization or analysis
- ▶ Use a consistent naming standards for your data sources
- ▶ Minimize the use of custom SQL in data sources – harder to maintain and not viewable without downloading locally and opening without Tableau desktop

More Best Practices...

- ▶ Use extracts for data that is refreshed on a daily or longer cycle – performance is much better than with live connections
- ▶ Schedule extract refreshes during non-business hours
- ▶ Consider designating the following roles among Tableau users:
 - A **data steward** (or team) who creates and publishes data sources for the Tableau community
 - A **site administrator** who manages published content, extract refreshes and permissions on the server you publish to

Helpful Links

More Details can be found on the link

<https://www.tableau.com/about/blog/2014/7/understanding-tableau-data-extracts-part1>

Why Use Tableau Data Extract

<https://www.tableau.com/about/blog/2014/7/why-use-tableau-data-extracts-32187>

Tableau Data Extracts – Tips, Tricks and Best Practices

<https://www.tableau.com/tableau-data-extracts-part3#zvjcKX9oUWxY8SPE.99>

Tableau Data Extracts – Tips, Tricks and Best Practices

<https://www.tableau.com/tableau-data-extracts-part3>

Publish a Data Source

http://onlinehelp.tableau.com/current/pro/desktop/en-us/help.htm#publish_datasources.html%3FTocPath%3DPublish%2520Data%2520Sources%2520and%2520Workbooks%7C_____4

Best Practices for Published Data Sources

https://onlinehelp.tableau.com/current/pro/desktop/en-us/publish_datasources_about.html

Connect to a Custom SQL Query

<http://onlinehelp.tableau.com/current/pro/desktop/en-us/customsql.html>