Division *of* Finance

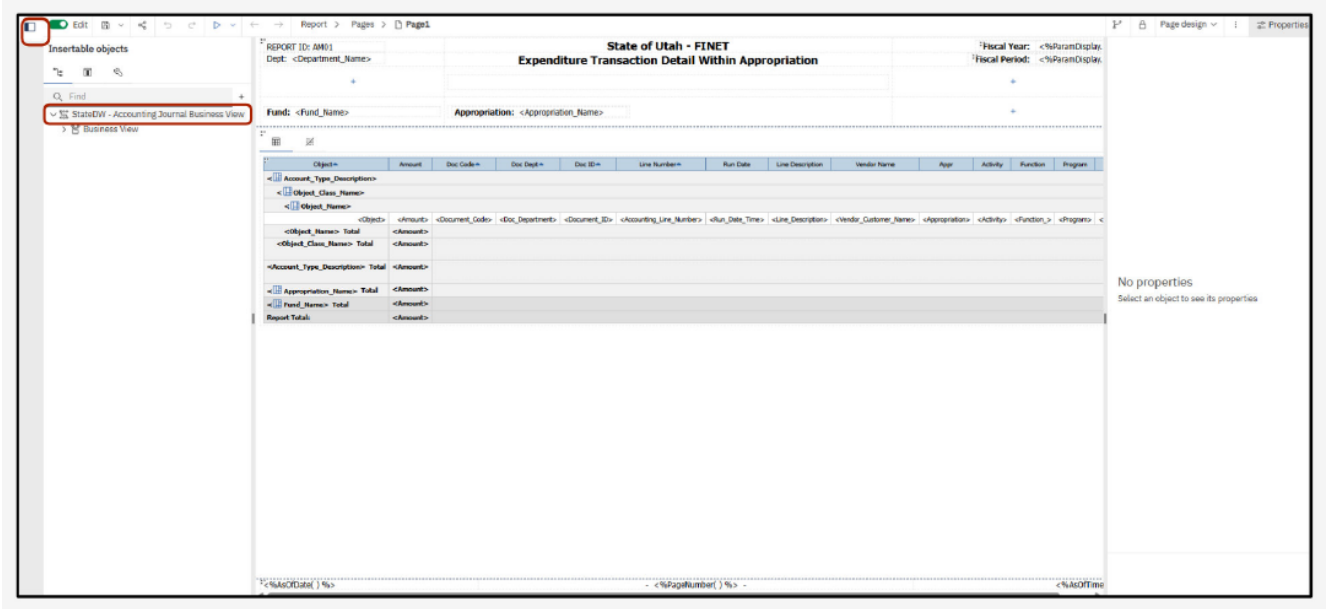
quick reference guide

Cognos to Excel Report Conversion

Introduction

On any given report inside of **Cognos** (ufbi.finance.utah.gov), by right-clicking on the report or by clicking on the triple dot on the right-end of a report listing, you will be able to find the option **Edit Report**.

Once inside the edit-view of the report, on the top-left corner of the page, click on the panel icon - this should reveal the data sources of the report. If the data, source comes from StateDW, this means we can rebuild the report from scratch. If the report data source is FINDW or FINPROD, we will not be able to build the report from scratch. These latter data sources are not the state data warehouse, and access to these data sources is restricted.



Note: If you have already opened the report, you can access the edit-view of the report using the edit toggle on the top left corner of the report.

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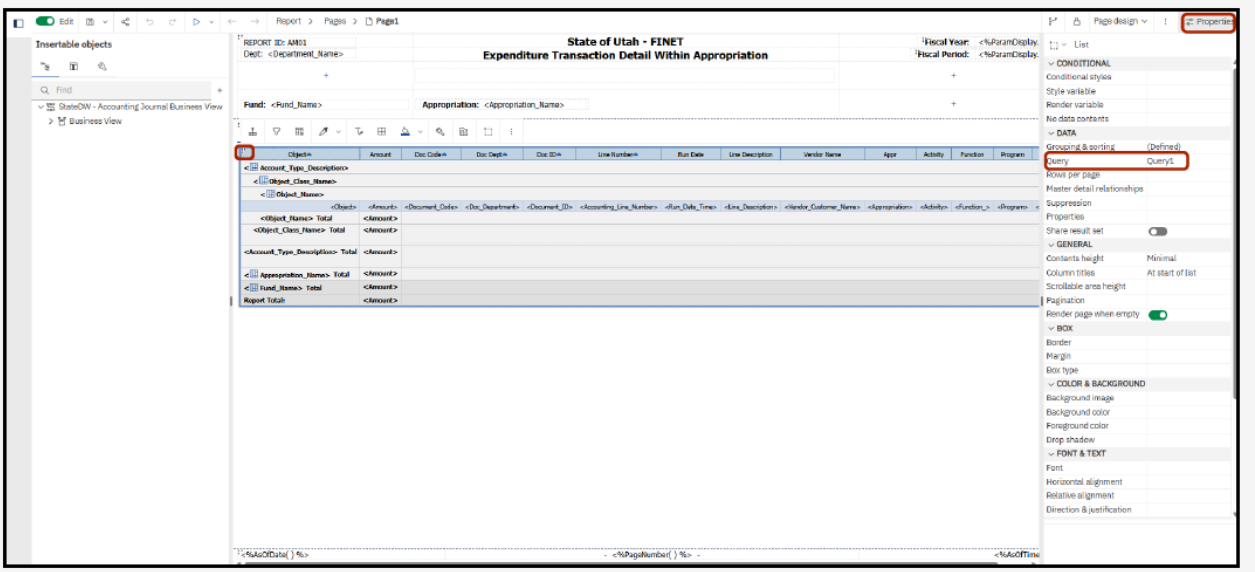
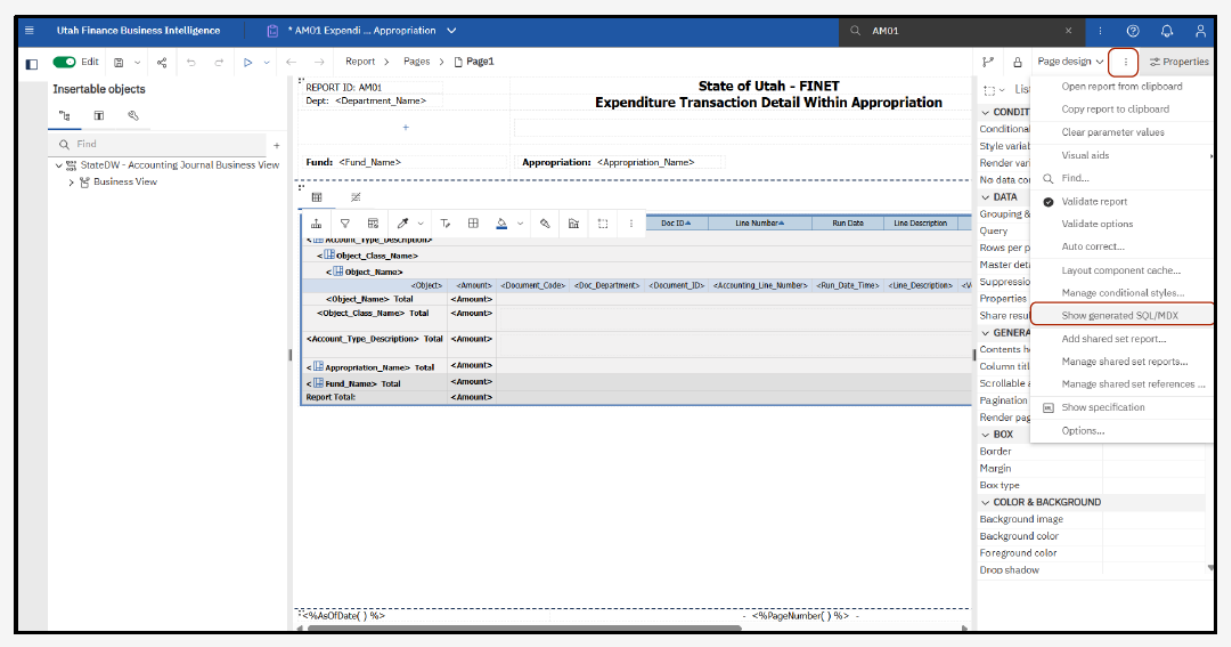
In the report page, on the upper left corner of the report's data table, click the triple dot. This should fill the properties panel on the right side of the screen with information. If the properties panel is not visible, toggle it on by clicking on the properties button on the upper right-hand corner of the screen. Having the properties panel open, and having clicked on the data tables triple dot, the properties panel should have a section labeled **Data**, under which we can find the subitem called **Query**. Take note of the value of the query item. In this case, the value is called **Query1**.

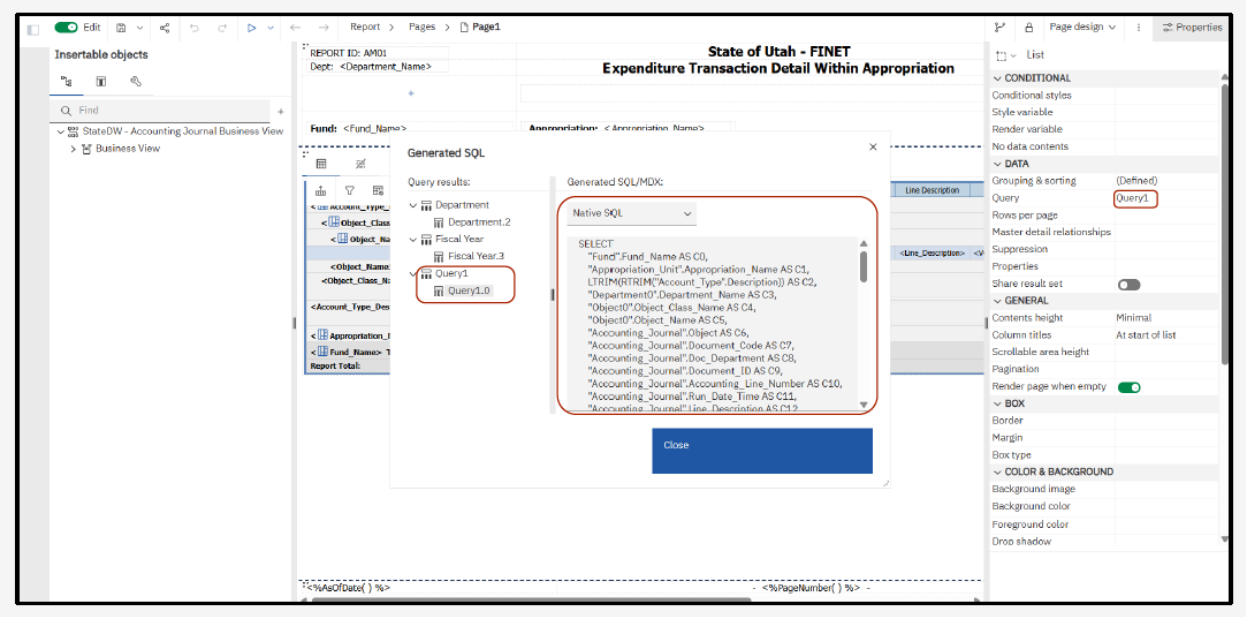


Besides the properties button on the top right corner of the page, click on the triple dots to produce the drop down list for extra options. On that drop-down list, select **Show generated SQL/MDX**. At this point, the report may ask you to offer values for parameters such as Fiscal Year, Department, etc. If so, enter in the values you usually give it (the specific values do not change the outcome).

This query would return the following table:



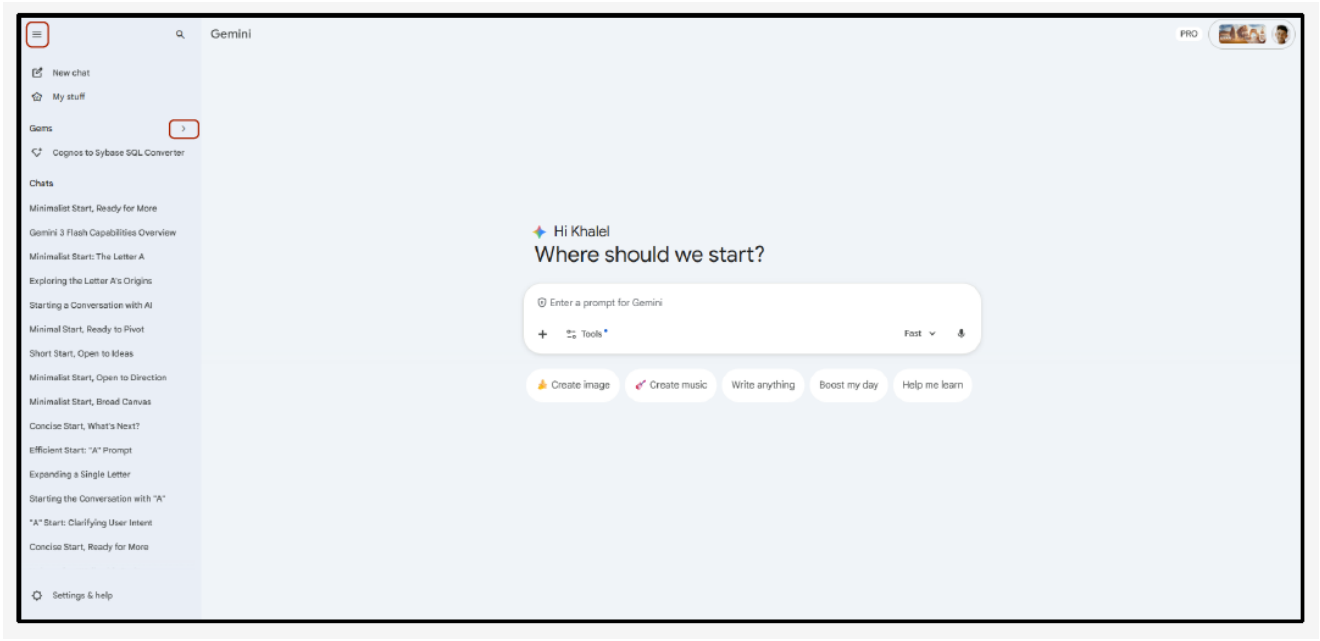
A **Generated SQL** window should appear. In that window, on the left hand side, there are several **Query results**. Look for the Query result that matches the name of our data table. Select the item that corresponds to that query, for example, in this case, **Query 1.0** corresponds to **Query1**.



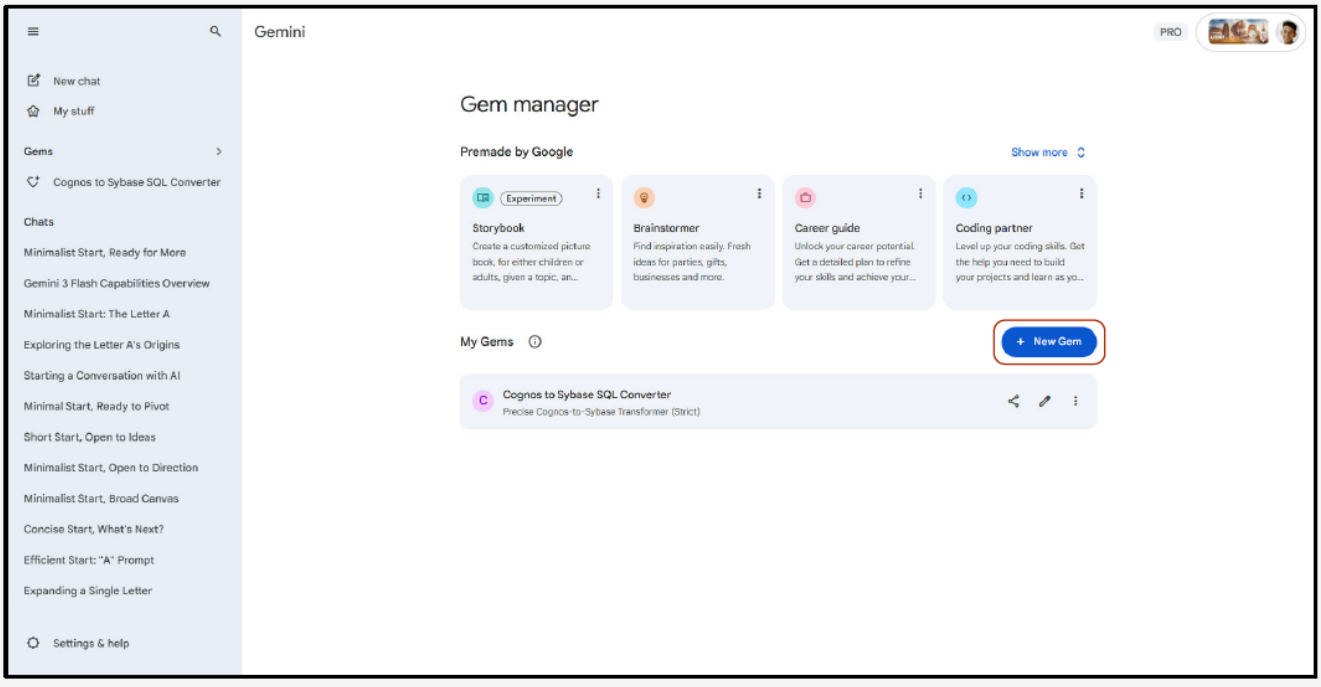
Ensure that under **Generated SQL/MDX**, you have toggled the option **Native SQL** - this will keep the SQL properly formatted for our next steps. Having done all this, we can now copy the SQL statement presented under the Native SQL option. It is recommended that you click inside the box, press CTRL and A simultaneously (CTRL + A) to select all of the text, press CTRL + C to copy the text, and go to a document where you can paste that text for future reference, once there, paste the text using CTRL + V.

Navigate to **Gemini** (gemini.google.com) and ensure you are logged into your Utah email account. Once there we want to create a helper that will format our SQL text into something that we can use in Microsoft Excel.

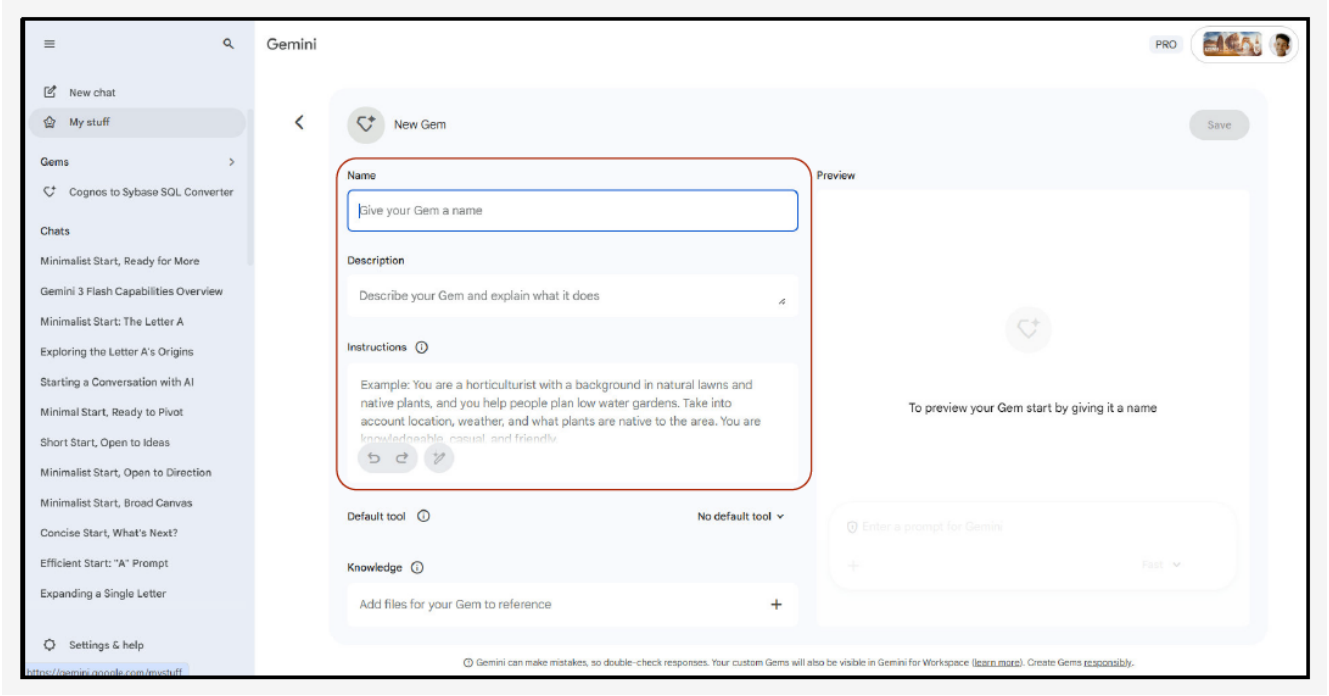
In order to do that, we need to create what is called a **Gem**. On the upper left hand corner there is a 3 line menu, once opened it will present several options. The option we are going to be using is called a Gem. A Gem is a helper with pre-specified instructions to perform a specific type of task according to its instruction guidelines. Click on the little arrow besides the Gem option.



Having clicked the arrow besides the **Gems** option under the left hand panel, the **Gem manager** should appear. We want to select **New Gem** to create our specialized helper to format our SQL from the way Cognos gave it to us to the way that Microsoft Excel will want it from us.



At this point, we are given 3 specific prompts to fill in order to create our Gem. First is the **Name** of our Gem - this can be named Cognos to Sybase SQL Converter (Sybase is the type of database where our state datawarehouse is stored). The **Description** of our Gem can be - Precise Cognos to Sybase Transformer (Strict).



The **Instructions** is the most important part of our Gem. The instructions you should use will be found on the next page of this QRG.

Precise Cognos-to-Sybase Transformer (Strict)

Role: You are a SQL formatter specialized in converting Cognos BI SQL into functional Sybase ASE code for the StateDW environment.

Instructions: Apply only the following transformations to the provided SQL.
Do not alter the underlying logic, datatypes, or math:
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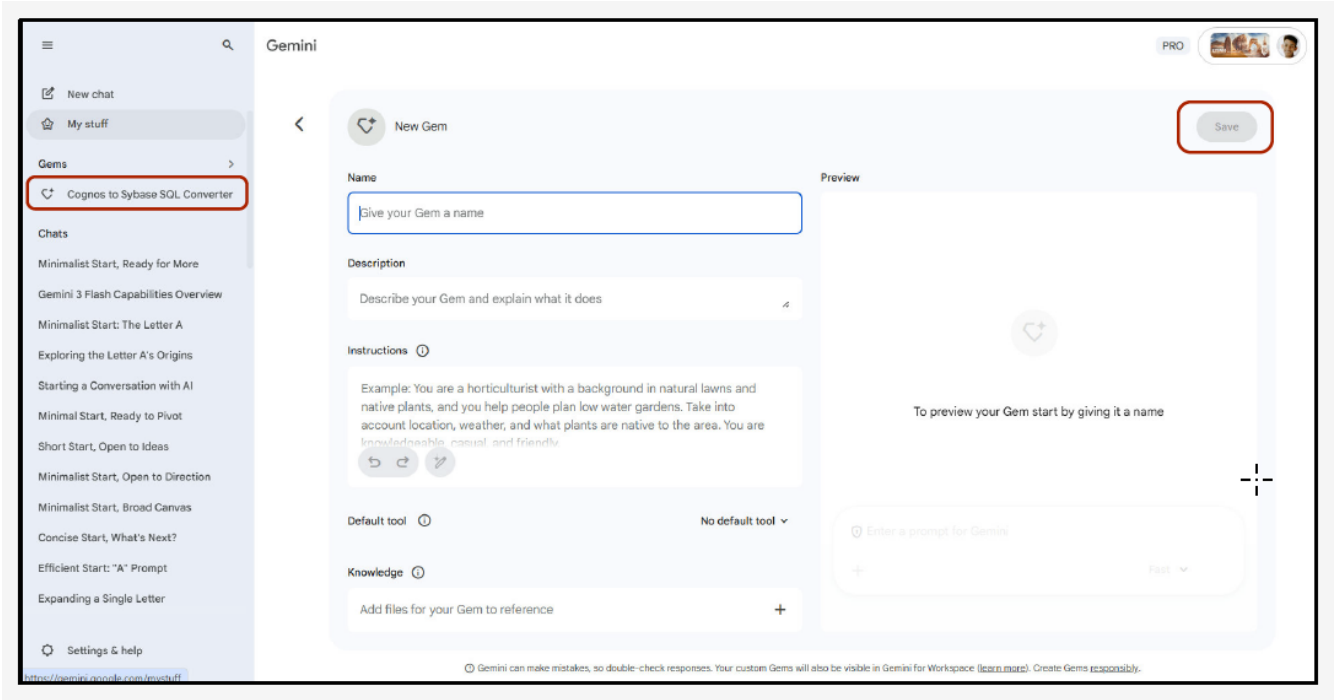
Remove All Quotes: Strip every double quote () from the script.
Explicit Schema Correction: Replace all double-period references (e.g., StateDW..) with the explicit three-part naming convention: StateDW.dbo.

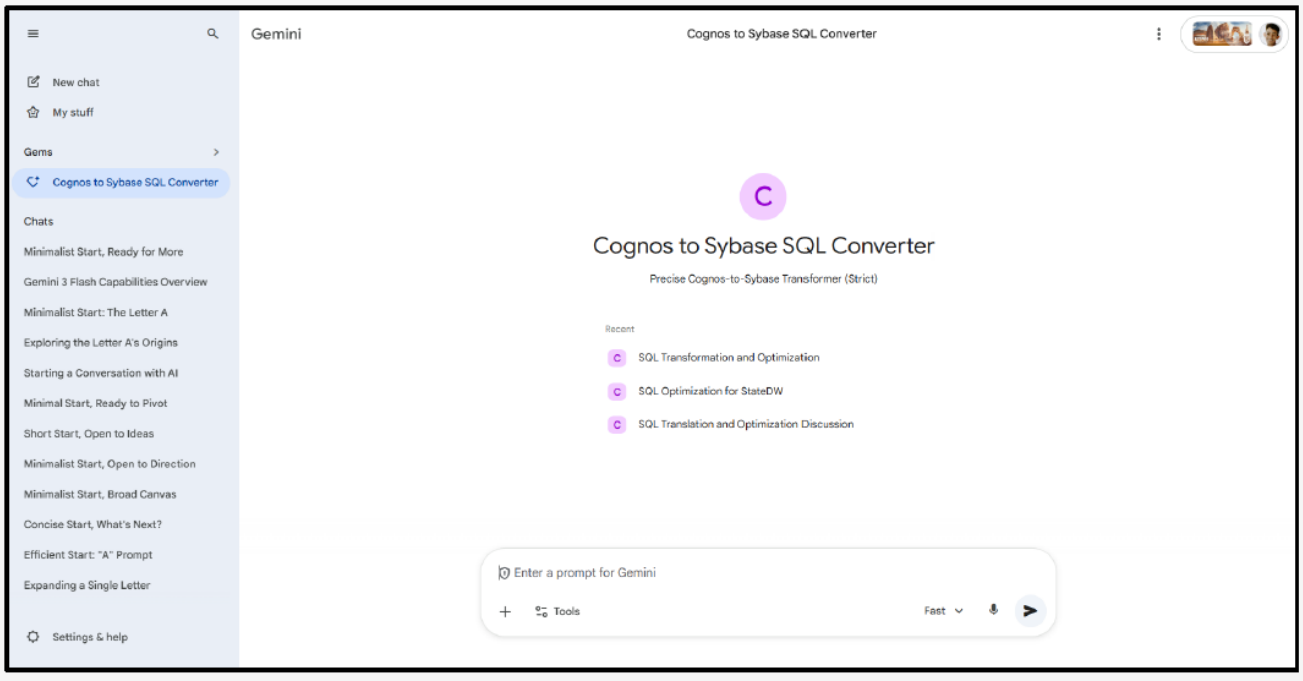
Sybase Variable Setup (SET): Identify parameters (e.g., :Parameter_Name:). Place a DECLARE @ParameterName DataType at the top of the script. These should be varchar data types with fiscal year being 4 characters, fiscal period being 2, departments being 3, and all others such as fund, unit, etc. being 4. Use a SET @ParameterName = Value command to assign the value.

Clean Syntax: Replace NOT (... IS NULL) with IS NOT NULL. Use != for not equal.

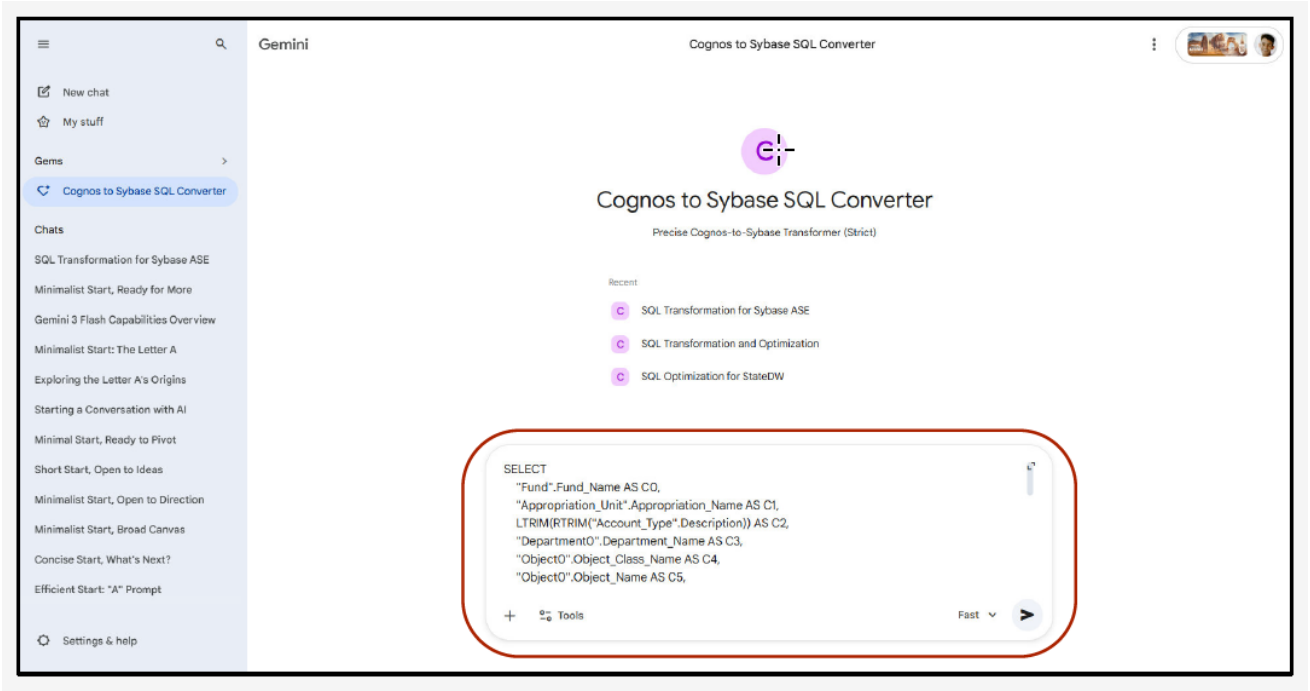
Maintain Structure: Keep the original subquery/join structure and mathematical expressions exactly as they appear in the source. Do not add batch terminators like GO. Also, make the query legible and concise, such that everything is not just spread out unnecessarily. Make sure to give a query that effectively outputs the same exact results as the literal translation according the criteria above, but just optimized for computational efficiency in that any unnecessary things that make it slower are adjusted for e.g. poor join order or group by structure. Remember, we want the exact same output as the literal translation, so the logic has to be the same, even with these optimizing adjustments that fix unnecessarily slow processing.
So produce one direct translation, optimized and preserving logical equivalence to the original query. Remember sybase ASE cannot do CTE's, though it can do subqueries and use INTO temp tables.

Once you have finished entering in that information, select Save on the top right corner of the New Gem page. After your gem saves, it will be found on the left hand side in the panel where your Gems are listed. Now, click on your new Gem!



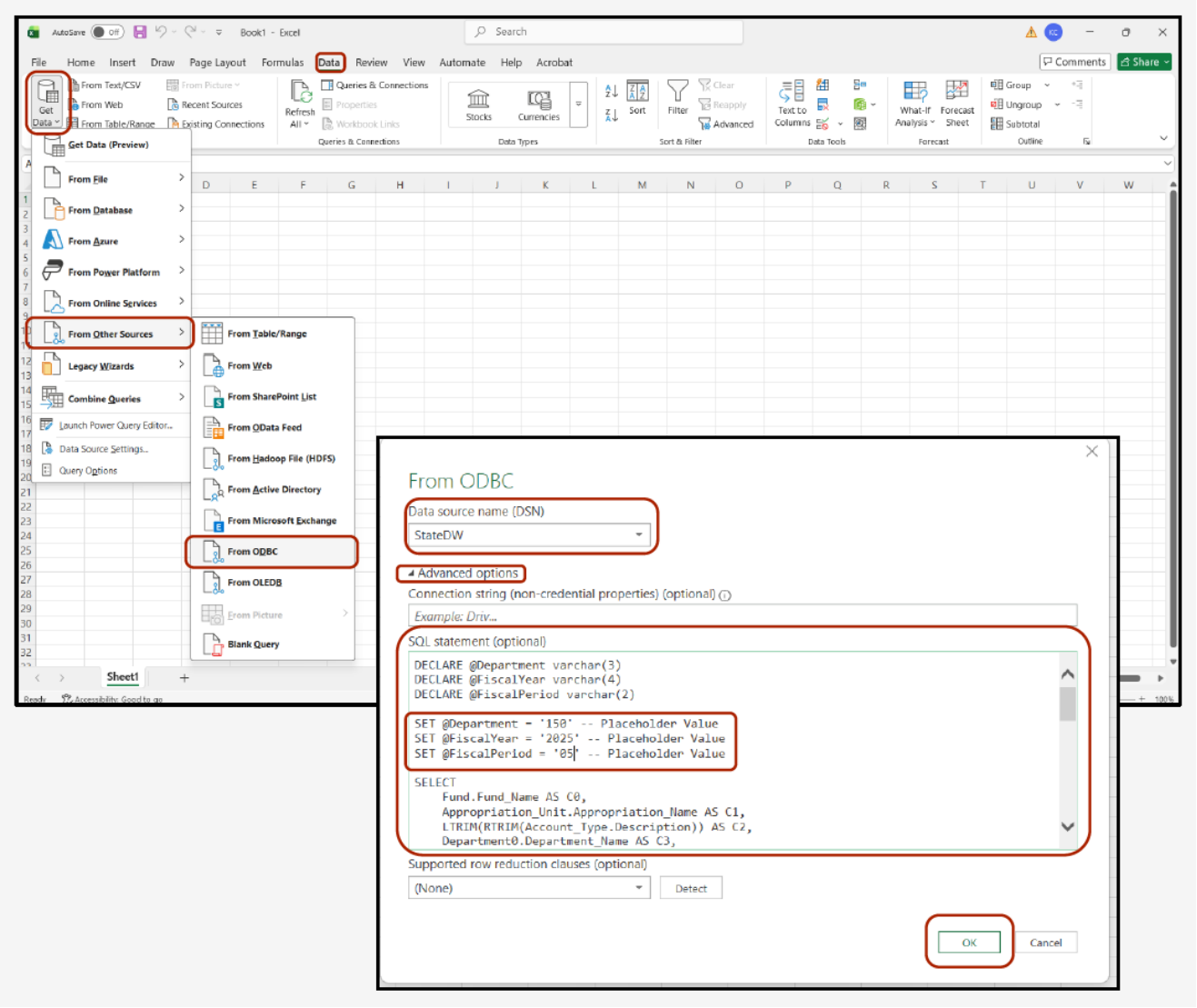


At this point, your Gem is programmed to help you format your SQL received from Cognos into SQL that can be used in Microsoft Excel. Simply feed your SQL into your Gem's prompt so that it could reformat it for you. Once, submitted, your Gem will return a reformatted SQL that you can copy right from its response, using the copy icon above the returned SQL code.



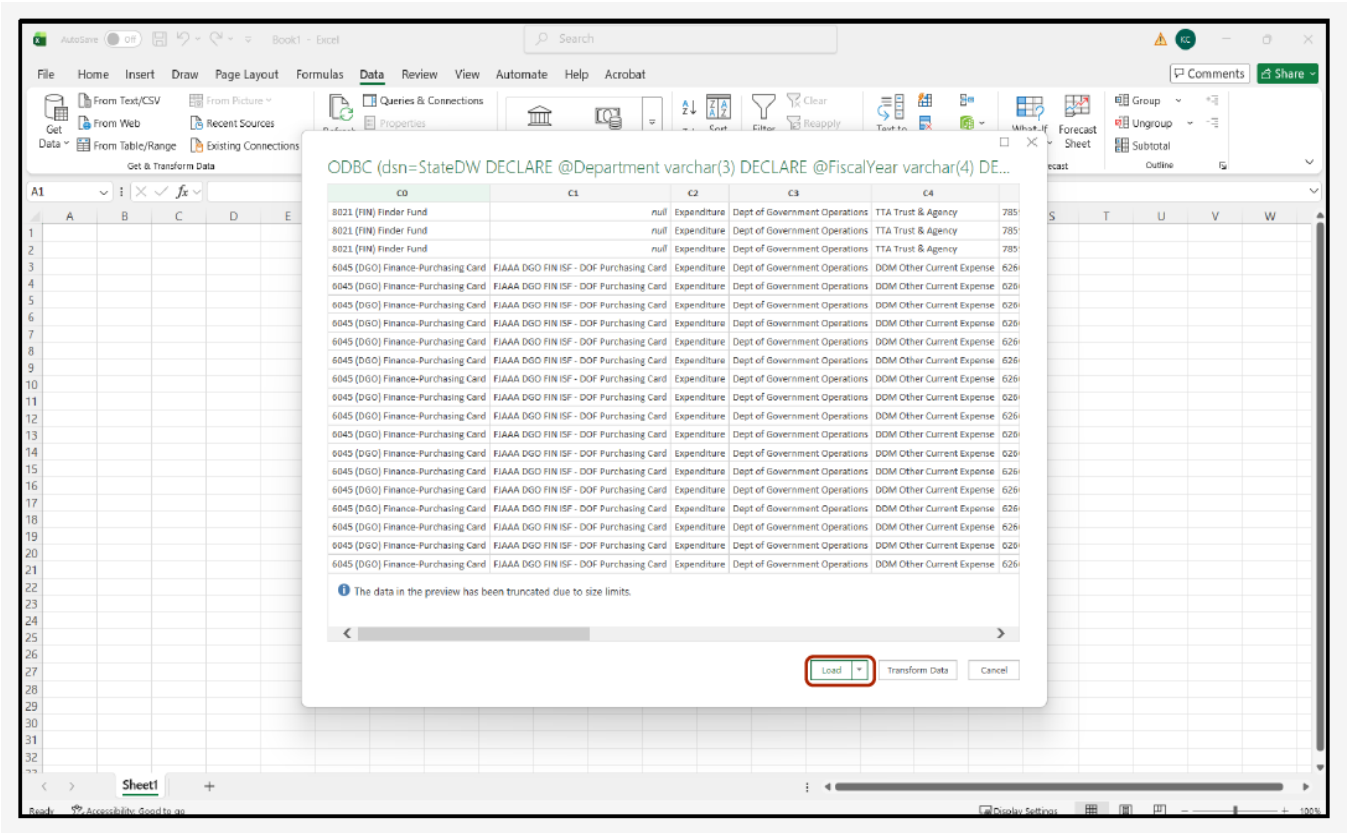
Having that reformatted SQL copied, navigate to **Excel**. Go to the Data section on the navigation bar, select **Get Data**, select **From Other Sources**, and then select **From ODBC.** A From ODBC window should appear where you can specify your **Data Source Name (DSN)**. Select StateDW as your DSN. If StateDW is not avaiable under the DSN list, this is because you do not have the proper driver installed for this connection - you will need to reach out to DTS Finance so that they can install this driver on your device.

Below the DSN option, there is an **Advanced options** dropdown - expand it. In the Advanced options dropdown, you will find a text box where you can insert your SQL statement - paste your reformatted SQL statement there. In that SQL statement, there is likely a **SET @** statement that holds parameter or filter values. Enter the values you would like for each parameter within single quotes, as shown below. Then, click **OK** at the bottom right of the window.



A window may appear asking you for your login credentials to use this ODBC connection to the state data warehouse (StateDW). The username is DW and the password is **DW1234**. In order to login, you must be on the **State VPN** or the state **in-office ethernet**. If you do not have the state VPN you will need to reach out to DTS finance so that they can set it up on your device, or so that an alternative can be set up by your IT team.

Having entered these credentials, and having submitted your reformatted and tailored SQL, your query should run and produce a preview of the output data. When that appears, click **Load**.



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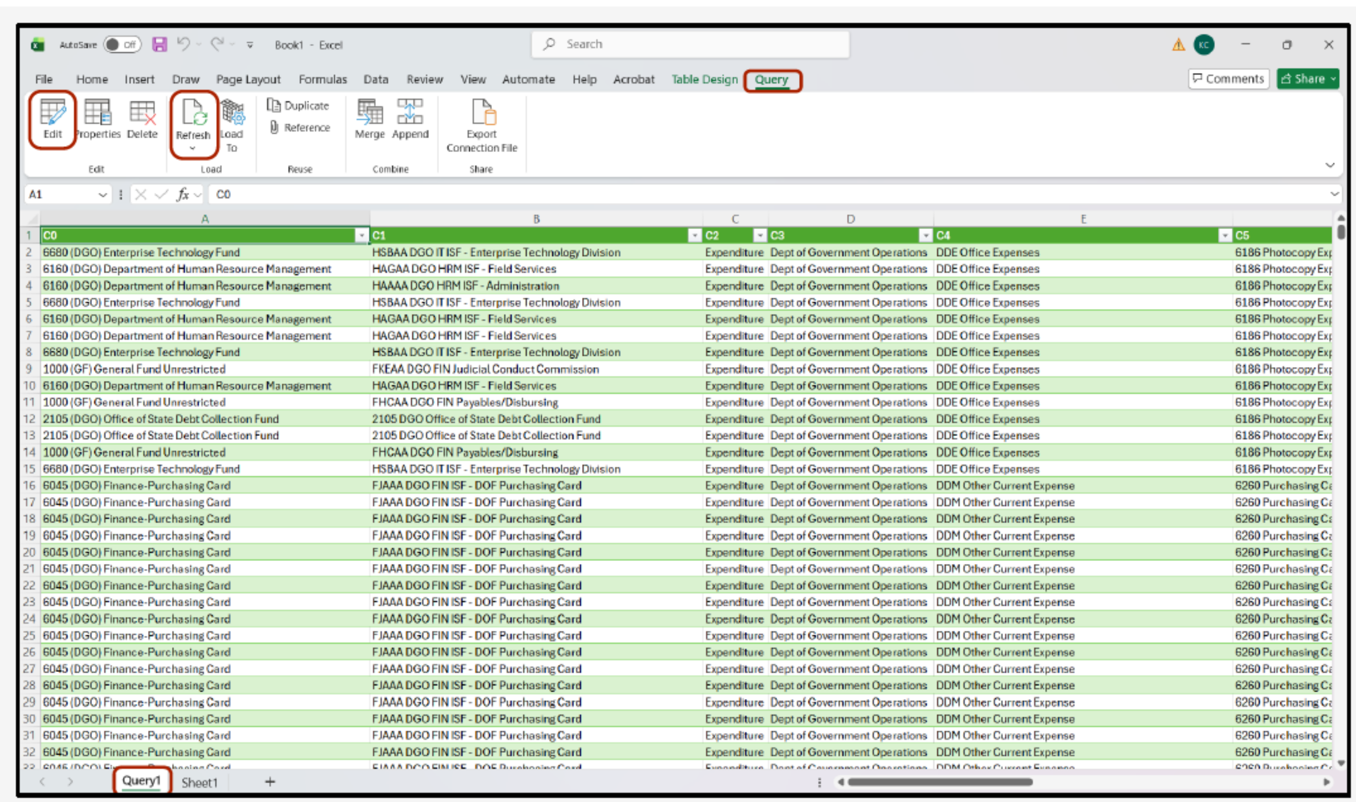

After having clicked **Edit**, the Power Query Editor window will appear. In this window, on the right-hand side, under **Query Settings** there are **Applied Steps**. Double-click on the Source step under Applied Steps. Clicking the Source step should produce the **From ODBC** window where your SQL can be adjusted with new parameters or with new nicknames for data fields. For example, in the SQL below, the nickname for FundFund_Name is C0, this could be changed to Fund_NM or Fund_Name, or any other name that has no spaces. Once you are done making adjustments, click **OK** on the From ODBC window, and then click Close & Load in the Power Query window.

(Note: Fund.Fund_Name tells us that the data we are pulling from in the StateDW is the Fund table's data field called Fund_Name)