Global Enablement & Learning

Build a SAS Studio Flow

Exercise Description

SAS Studio flows provide a visual, drag-and-drop interface within SAS Studio that allows users to build, manage and execute complex analytics workflows without writing code. In this hands-on workshop, you'll learn to build a flow using steps to access, prepare and analyze your data.

You will create a SAS Studio flow that uses SAS data and an imported text file. You will join the data sets and write the output to a SAS Library.

SAS Viya Logon Info

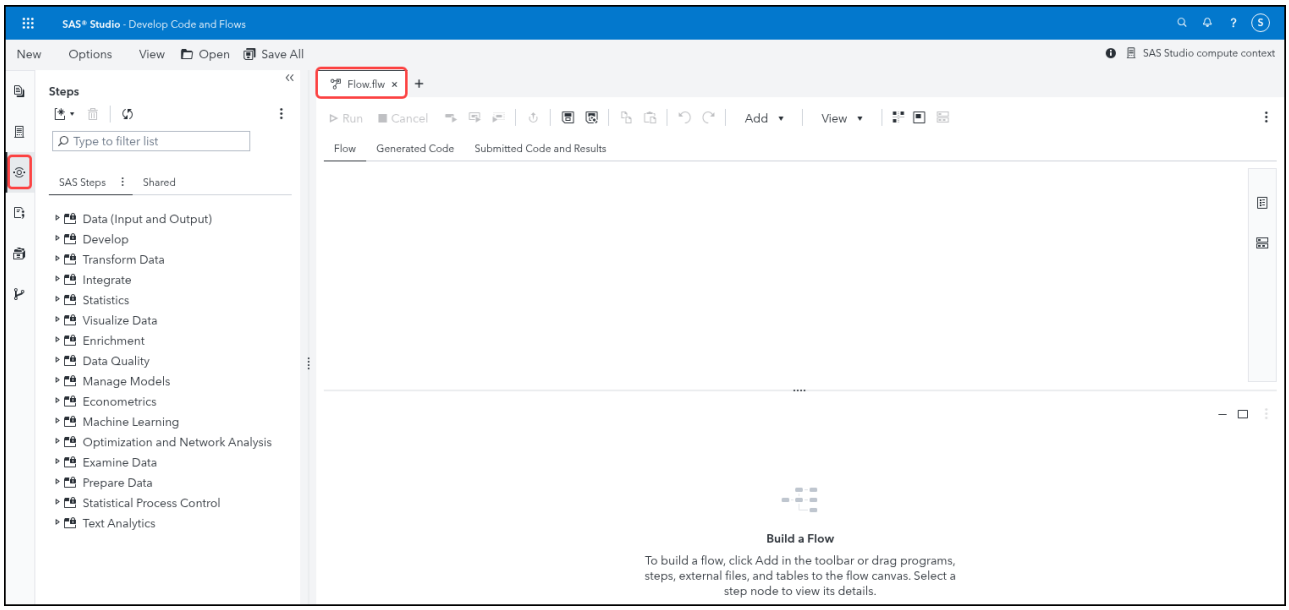
Use the *Google Chrome* browser and select the **SAS Drive** bookmark.

ID: **student** Password: **Metadata0**

Select **No** when prompted about accepting *Admin* privileges.

Create a SAS Studio Flow

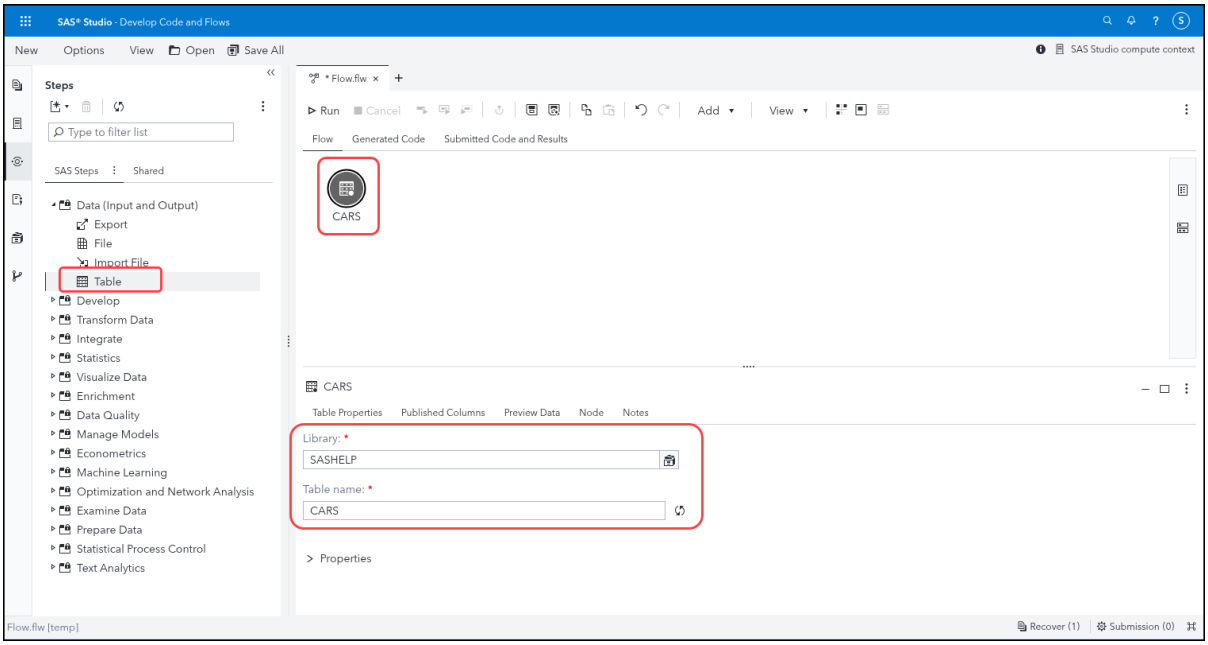
1. Select  ➔ **Develop Code and Flows** to open *SAS Studio*.
2. Select **New ➔ Flow**.
3. Select  to view the **Steps** pane.



4. Double-click the **Table** step in the *Data (Input and Output)* section of the *Steps* pane to add it to the flow canvas.

5. In the **Table Properties** section select the following:

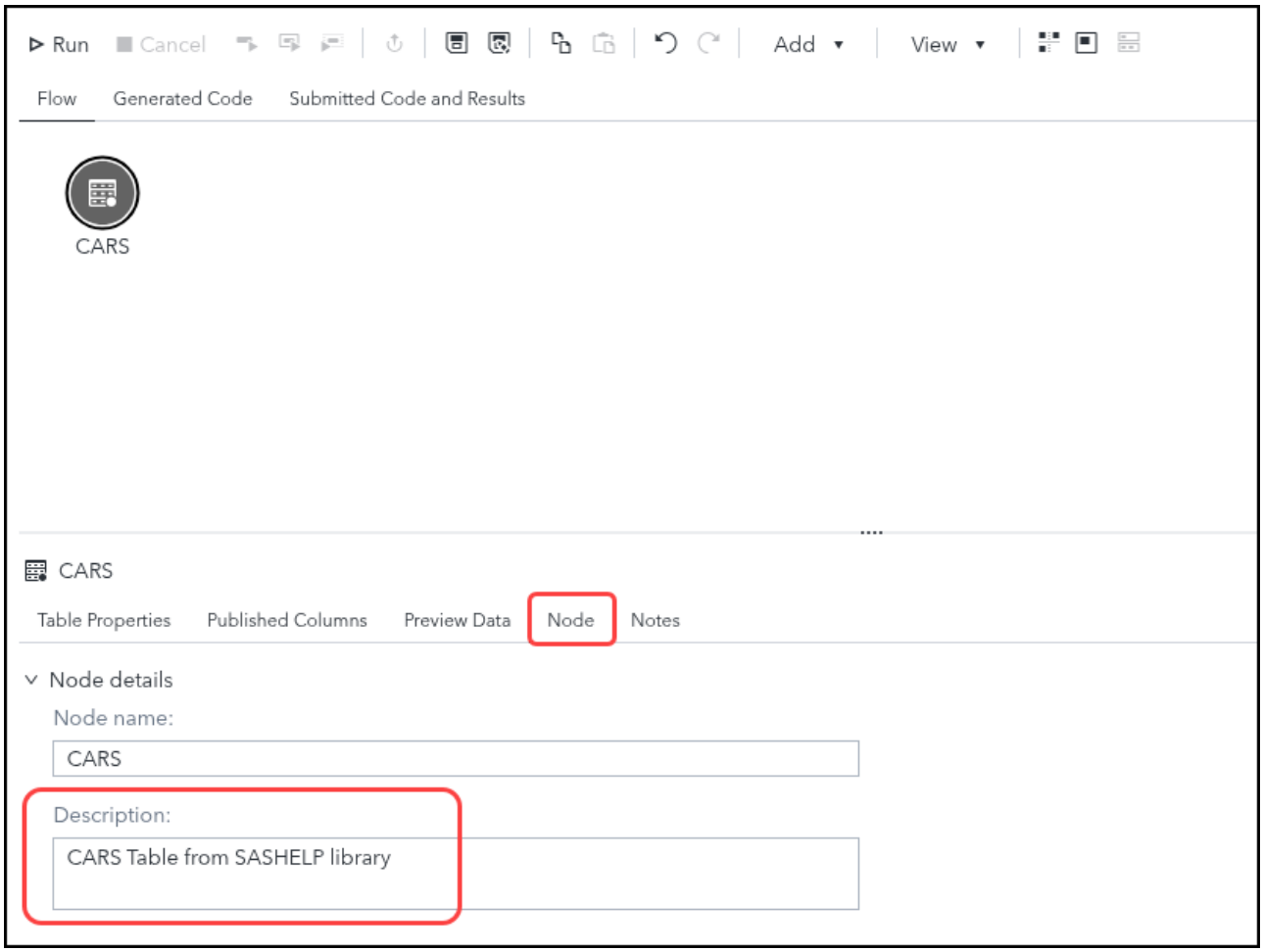
    - Library: **SASHELP**
    - Table name: **CARS**



6. Select **Preview Data** to view a subset of the rows from the table.

7. Select **Node** to name the step in the flow.

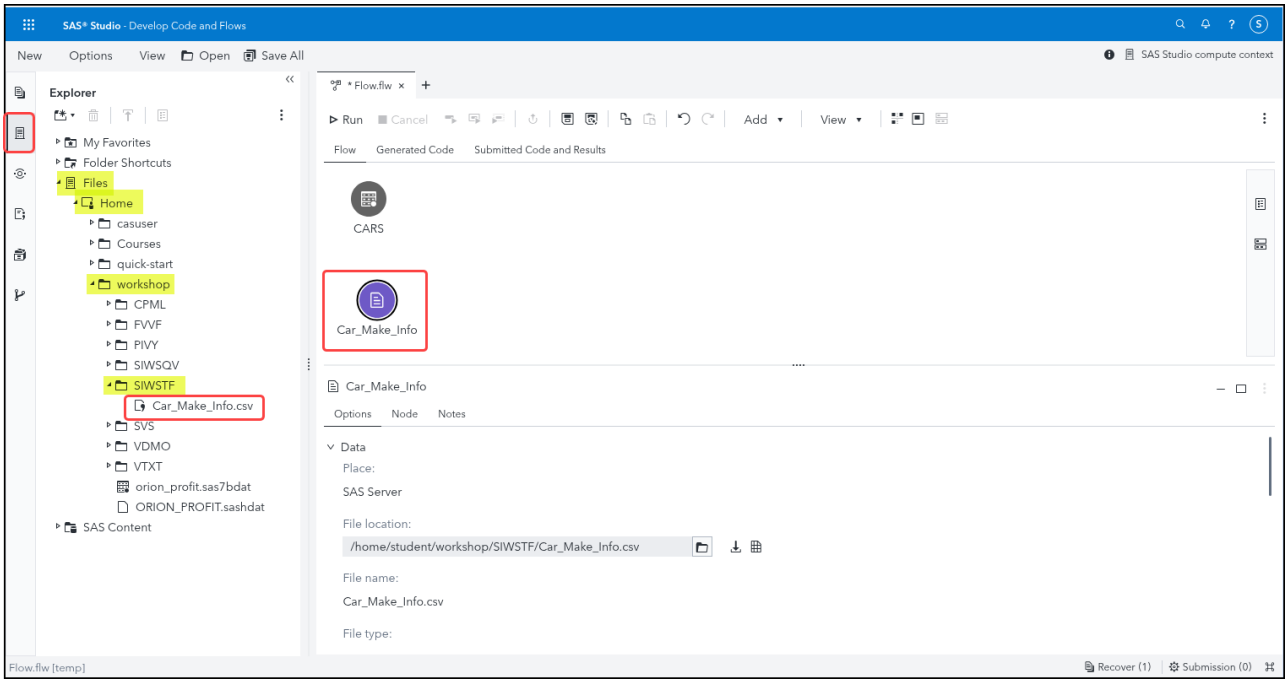
8. Add *Description* to **CARS Table from SASHELP library**.



9. Select  to open the **Explorer** pane.

10. Navigate to **Files ➔ Home ➔ workshop ➔ SIWSTF**.

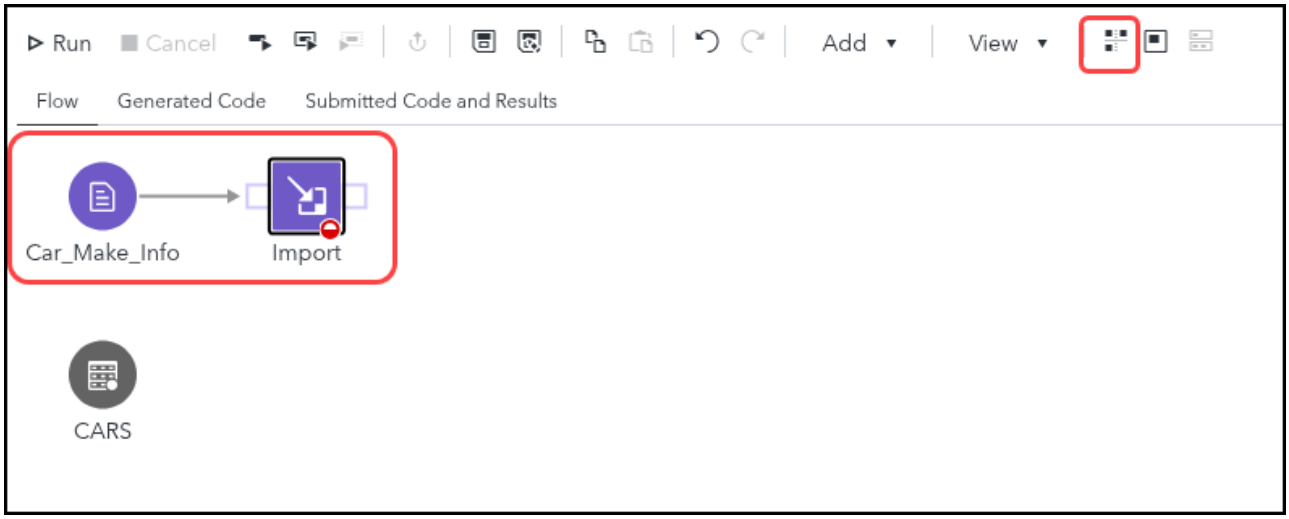
11. Drag the file **Car_Make_Info.csv** on to the flow canvas.



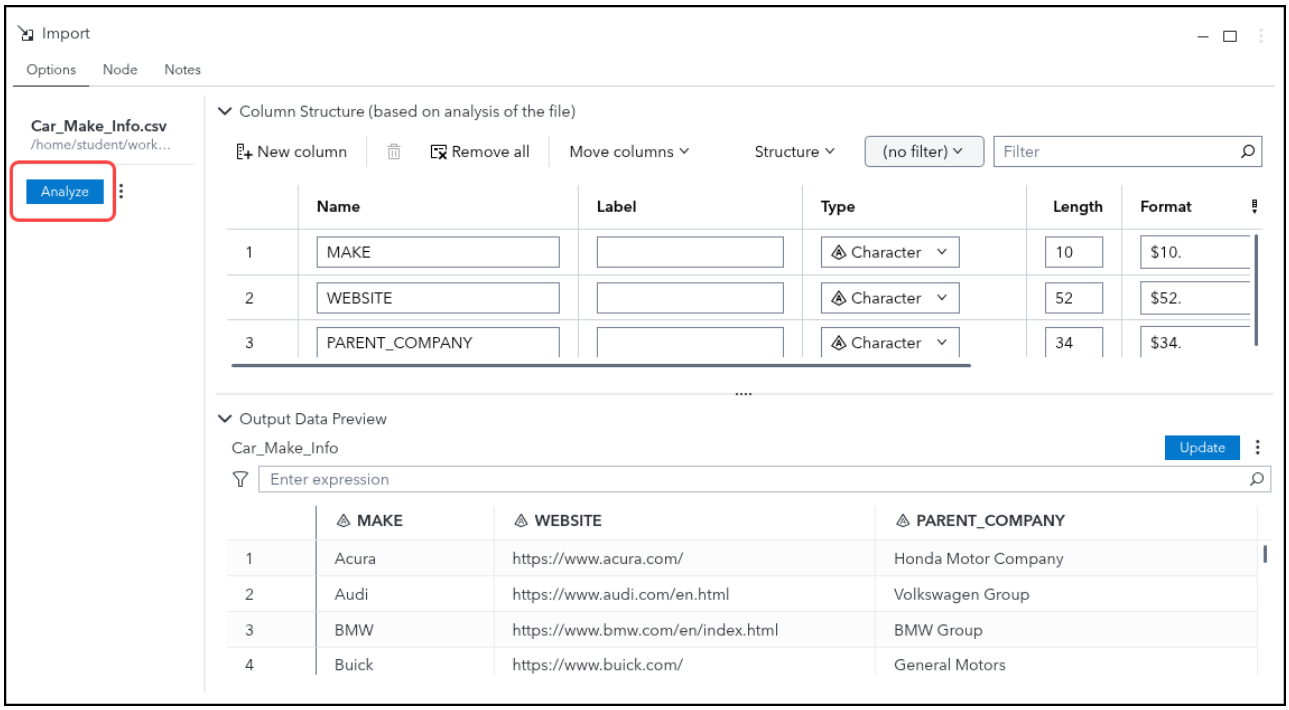
12. Select  ➔ **Import** to add the *Import* step to the flow canvas.

13. Use the mouse to connect the the *Car_Make_Info* file step to *Import* step.

14. Select  to rearrange the steps in the flow.



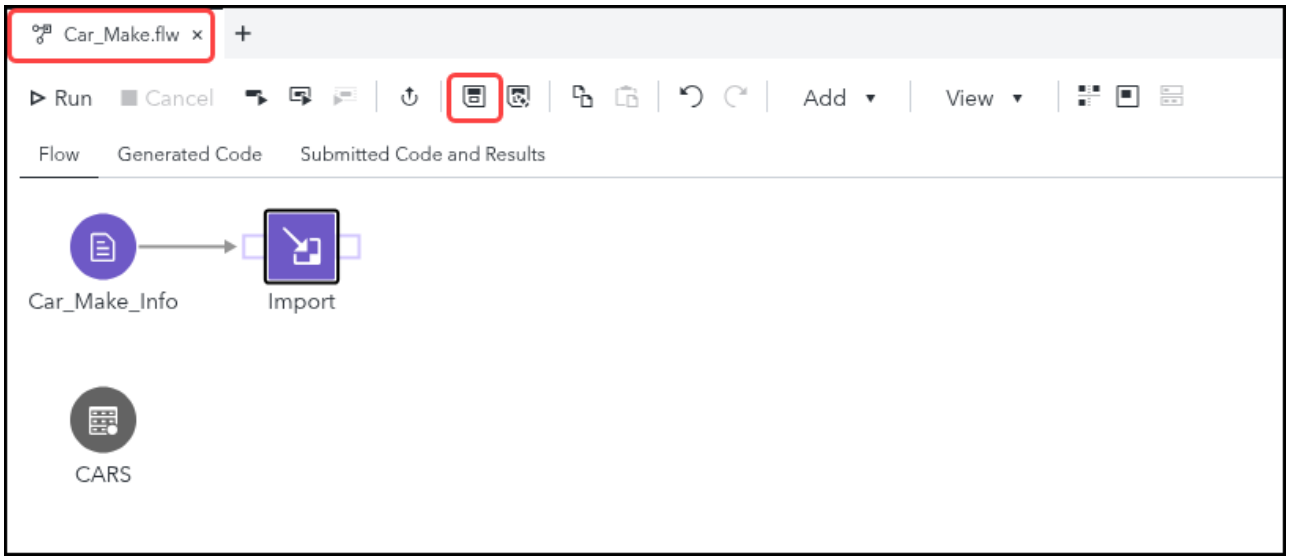
15. In the *Options* section for the *Import* step, select **Analyze** to generate the columns for the connected file.



16. Select  to save the flow.

17. Navigate to **SAS Content ➔ Public**.

18. Enter **Car_Make** for the *name* and click **Save**.

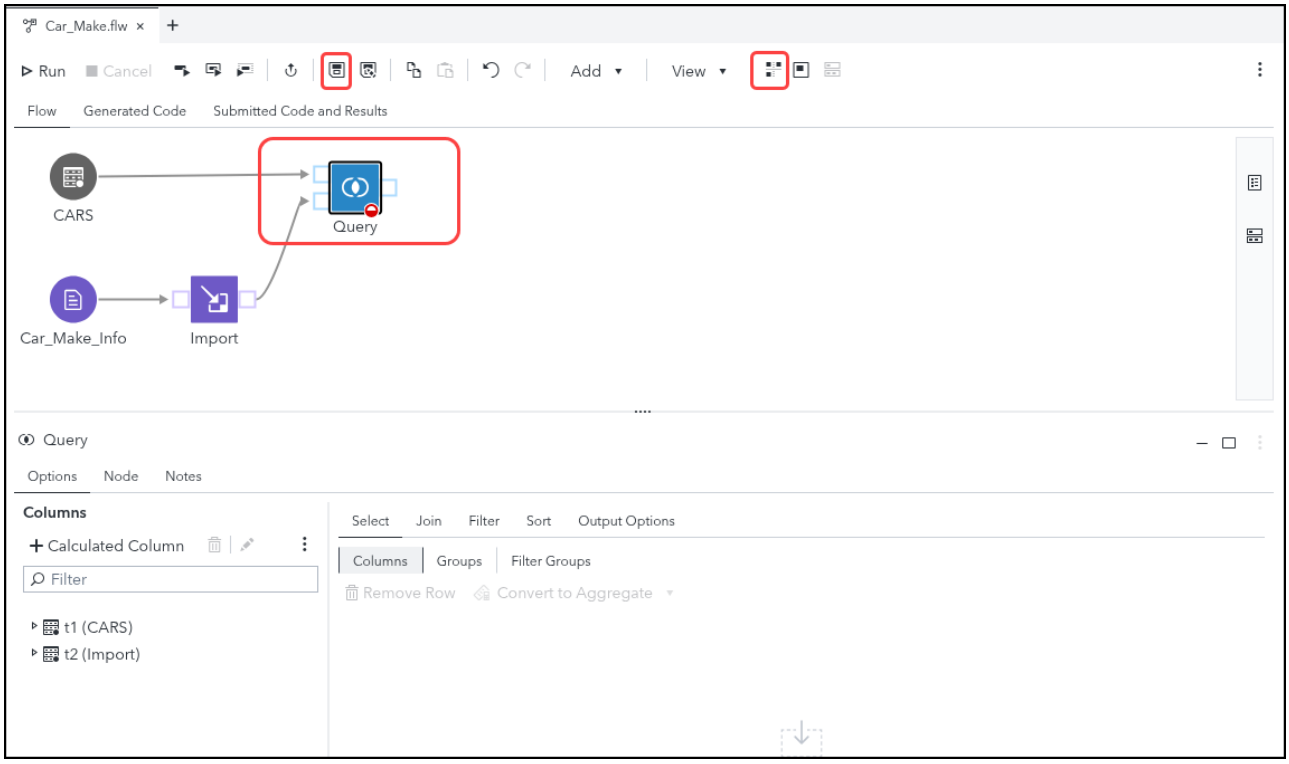


Join the Table and Imported File

1. Add the **Query** step in the *Transform Data* section of the *Steps* pane to the flow canvas and connect it to both the **CARS** *Table* step and the **Import** step. This creates two input ports for the *Query* step.

   > ☛ You can drop the **Query** node on the right-hand side of the **CARS** *Table* node in flow canvas to auto-connect them and then manually connect the *Import* step to it.

2. **Rearrange** the flow and **save** it.

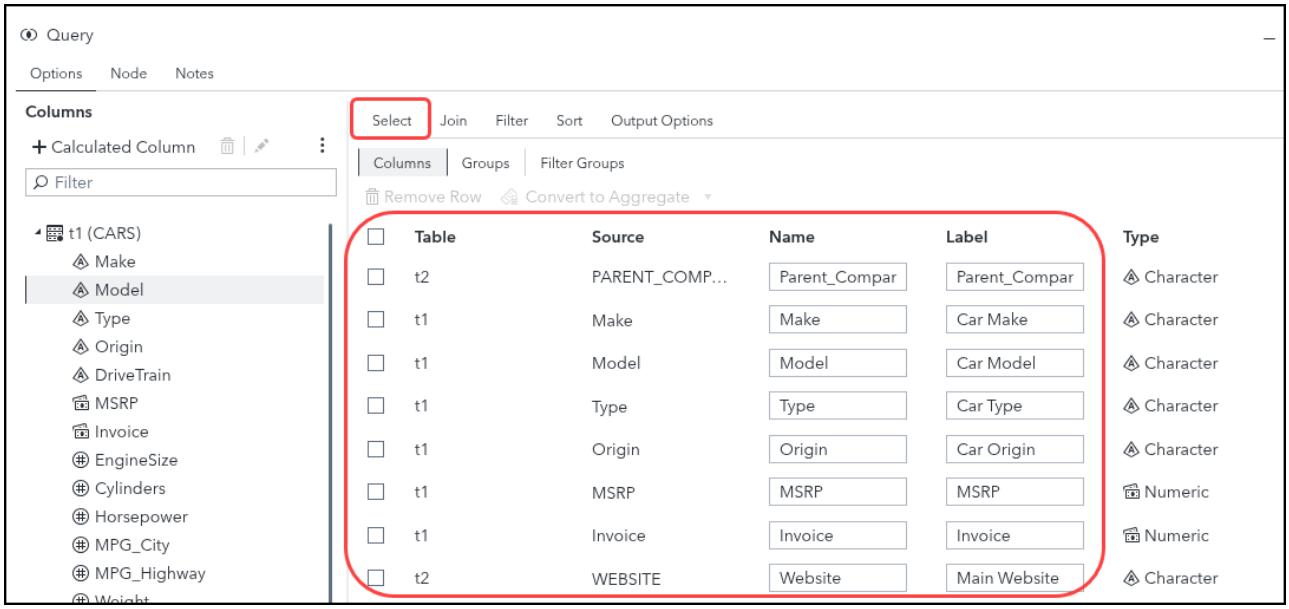


3. Select the following columns on the *Select* tab:

Table	Source	Name	Label
t2	PARENT_COMPANY	**Parent_Company**	**Parent Company**

Table	Source	Name	Label
t1	Make	Make	**Car Make**
t1	Model	Model	**Car Model**
t1	Type	Type	**Car Type**
t1	Origin	Origin	**Car Origin**
t1	MSRP	MSRP	**MSRP**
t1	Invoice	Invoice	**Invoice**
t2	WEBSITE	**Website**	**Main Website**

> ✎ This assumes that **t1** is the *CARS Table* step and **t2** is the *Import* step.



4. Click 

to add a calculated column.

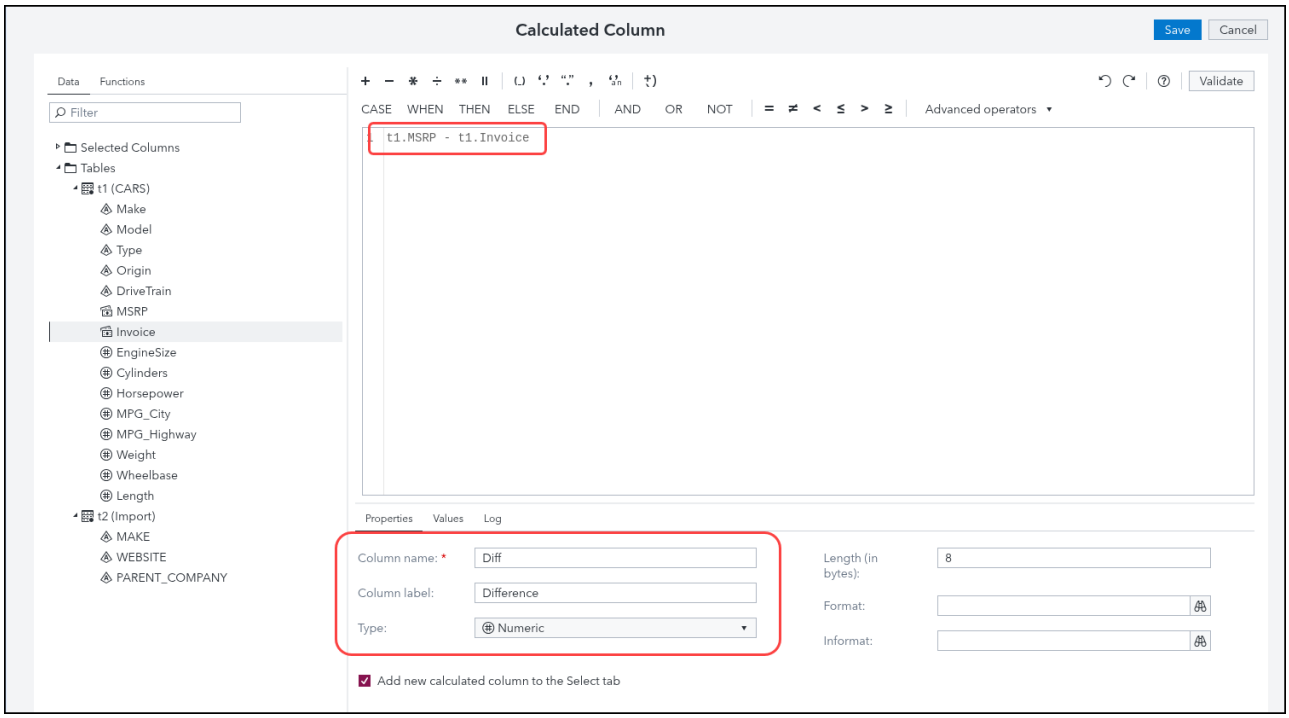
5. Enter the following for the calculation:

   t1.MSRP - t1.Invoice

   > ✎ This assumes that **t1** is the *CARS Table* step.

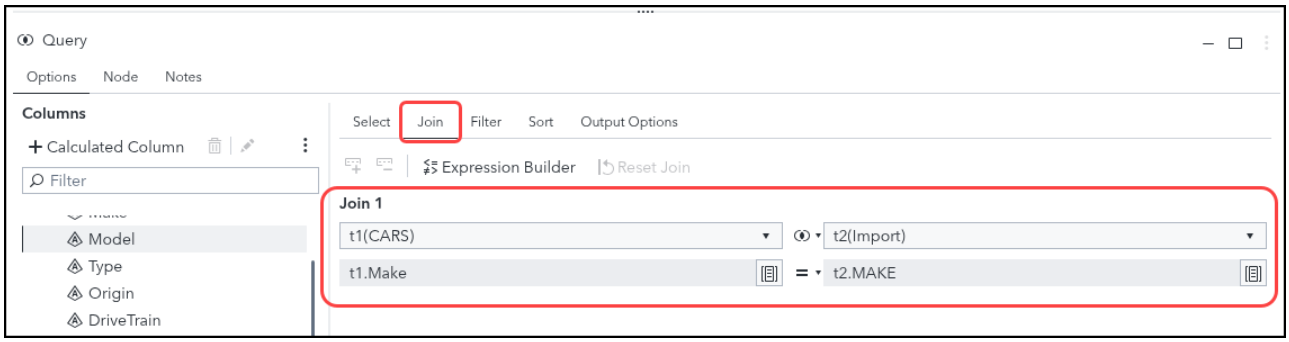
6. Enter the following for the properties:

   - Column name: **Diff**
   - Column label: **Difference**
   - Type: **Numeric**



7. Click **Save** to save the calculated column.

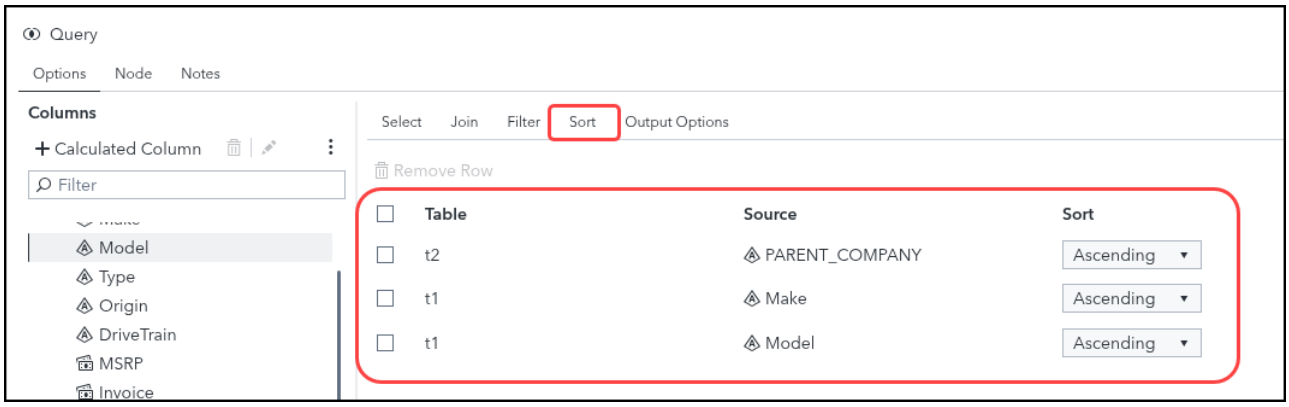
8. On the *Join* tab, confirm that the join condition is **t1.Make=t2.MAKE**.



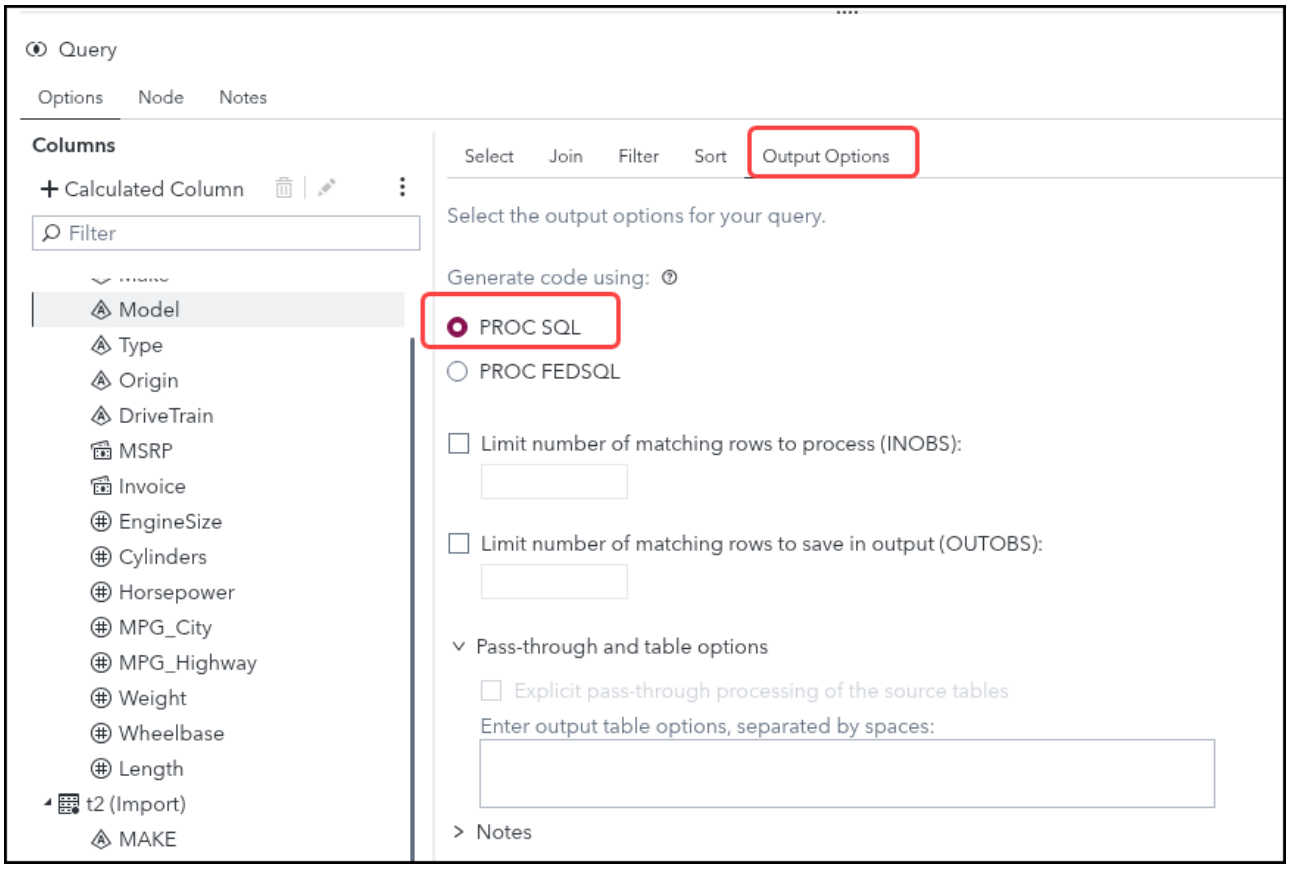
> ✎ This join condition is made automatically since the columns have the same name.

9. Select the following columns on the *Sort* tab:

Table	Source	Sort
t2	PARENT_COMPANY	Ascending
t1	Make	Ascending
t1	Model	Ascending



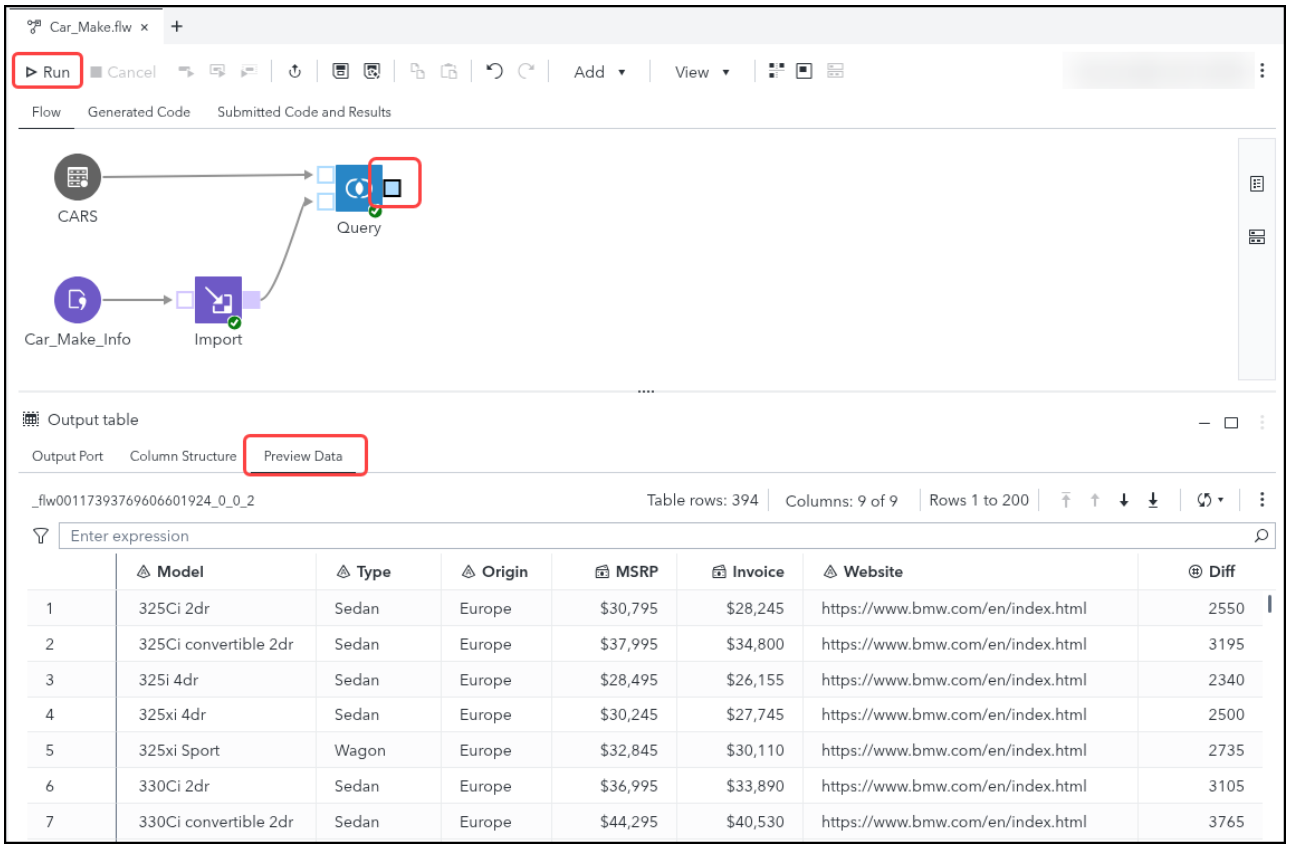
10. On the *Output Options* tab, leave the selection for *Generate code using* as **PROC SQL**.



11. **Save** the changes to the flow.

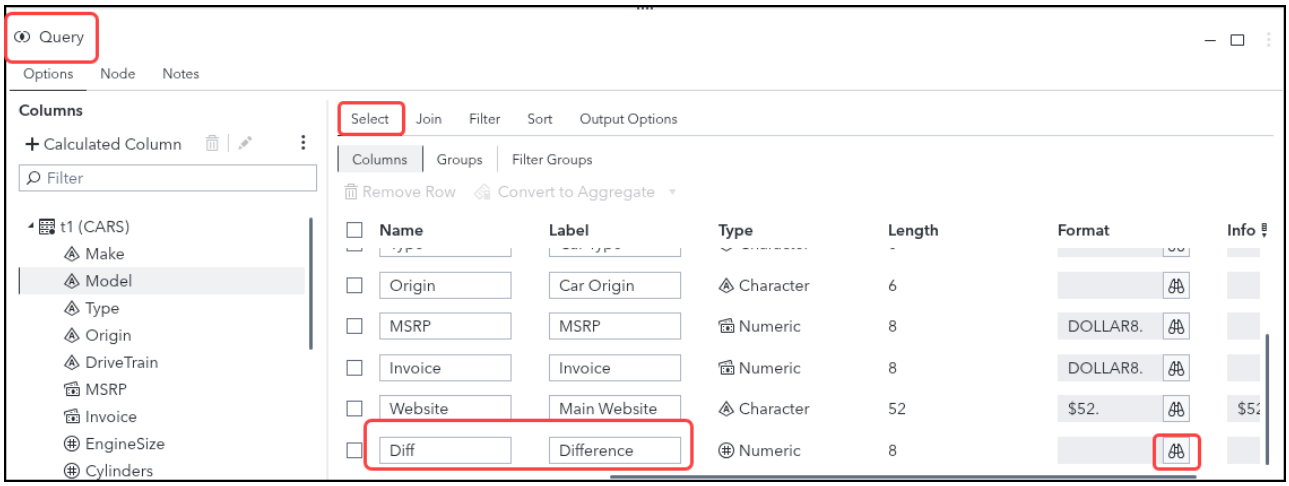
Run and Preview Results

1. **Run** the flow.
2. Select the **Output port** of the *Query* step and **preview** its results.

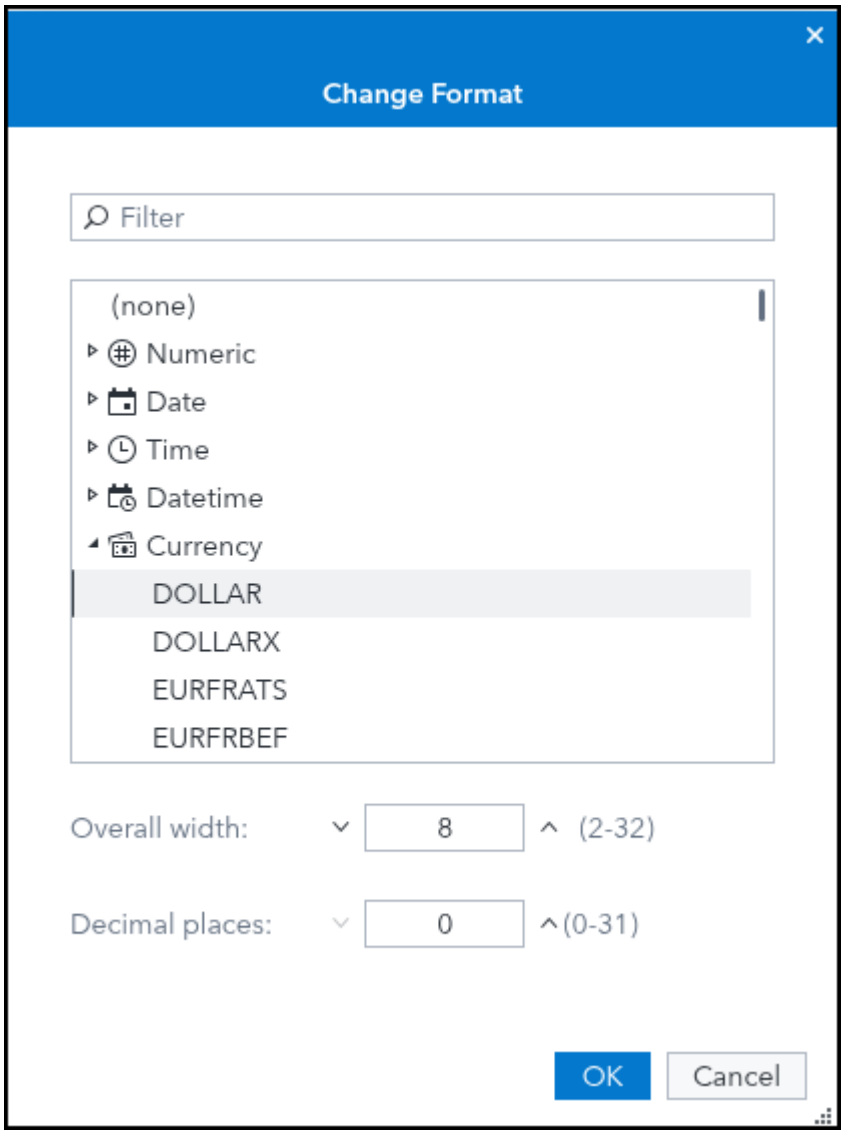


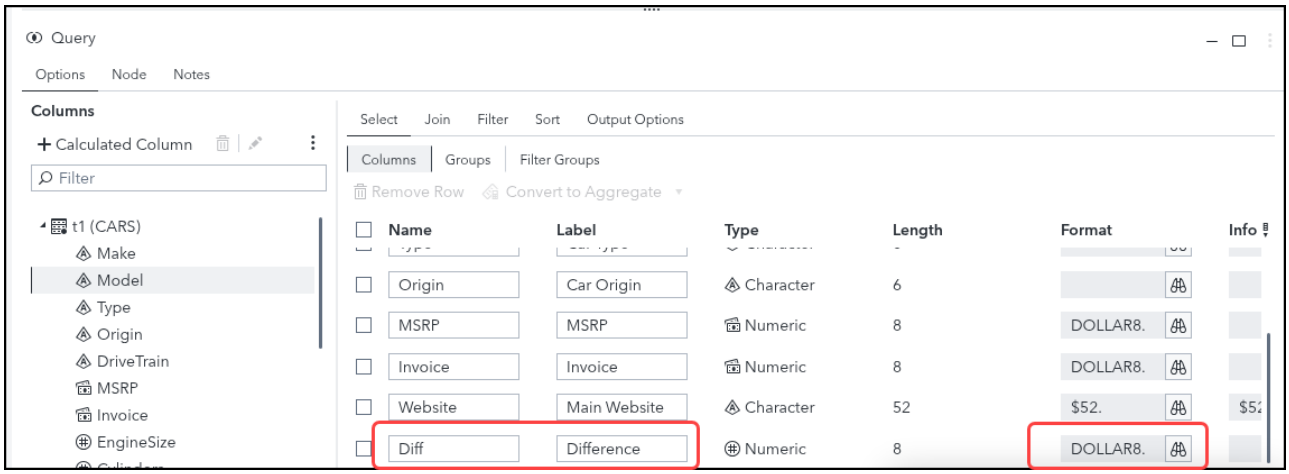
	Model	Type	Origin	MSRP	Invoice	Website	Diff
1	325Ci 2dr	Sedan	Europe	$30,795	$28,245	https://www.bmw.com/en/index.html	2550
2	325Ci convertible 2dr	Sedan	Europe	$37,995	$34,800	https://www.bmw.com/en/index.html	3195
3	325i 4dr	Sedan	Europe	$28,495	$26,155	https://www.bmw.com/en/index.html	2340
4	325xi 4dr	Sedan	Europe	$30,245	$27,745	https://www.bmw.com/en/index.html	2500
5	325xi Sport	Wagon	Europe	$32,845	$30,110	https://www.bmw.com/en/index.html	2735
6	330Ci 2dr	Sedan	Europe	$36,995	$33,890	https://www.bmw.com/en/index.html	3105
7	330Ci convertible 2dr	Sedan	Europe	$44,295	$40,530	https://www.bmw.com/en/index.html	3765

3. On the *Select* tab, of the *Query* node, select  in the *Format* column for the **Diff** calculated column.



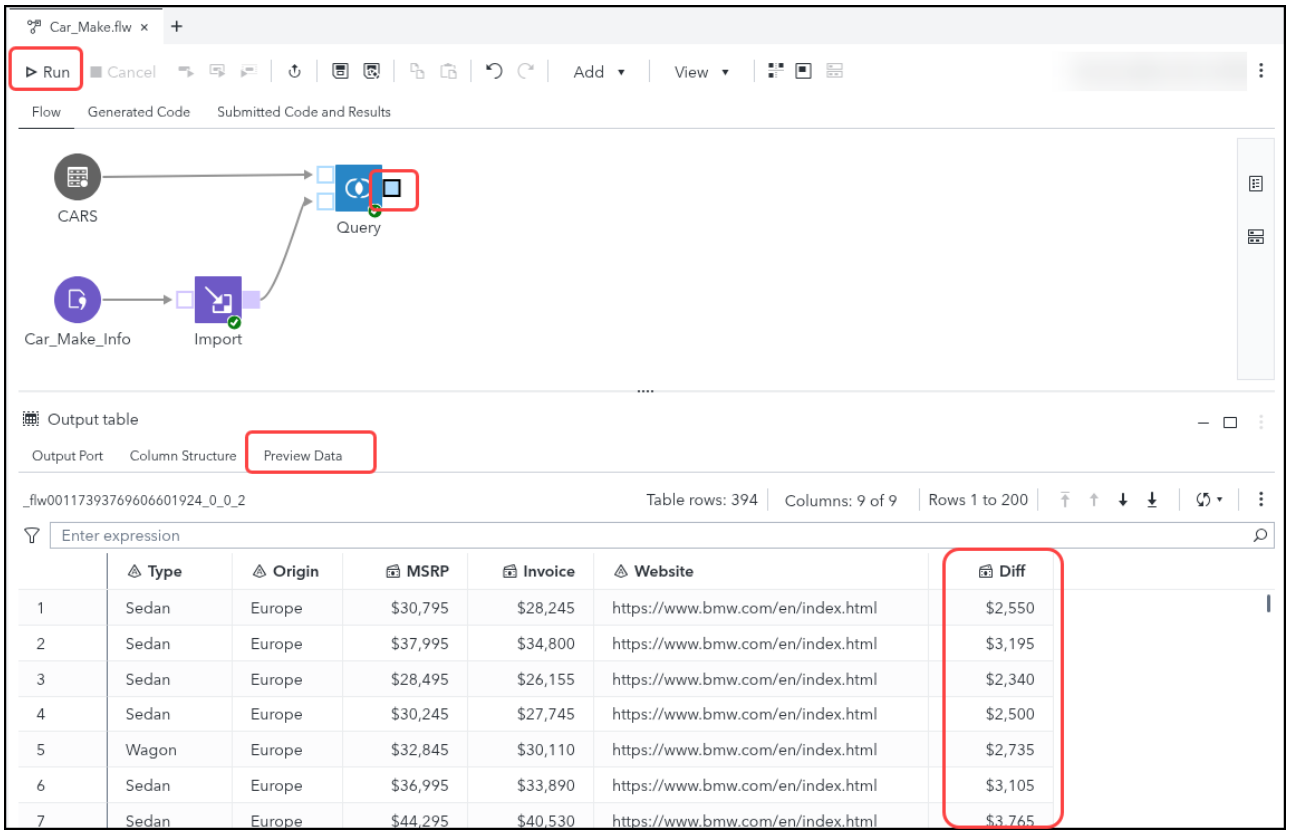
4. Set the format to **DOLLAR8** and click **OK**.





5. **Save** the changes to the flow.

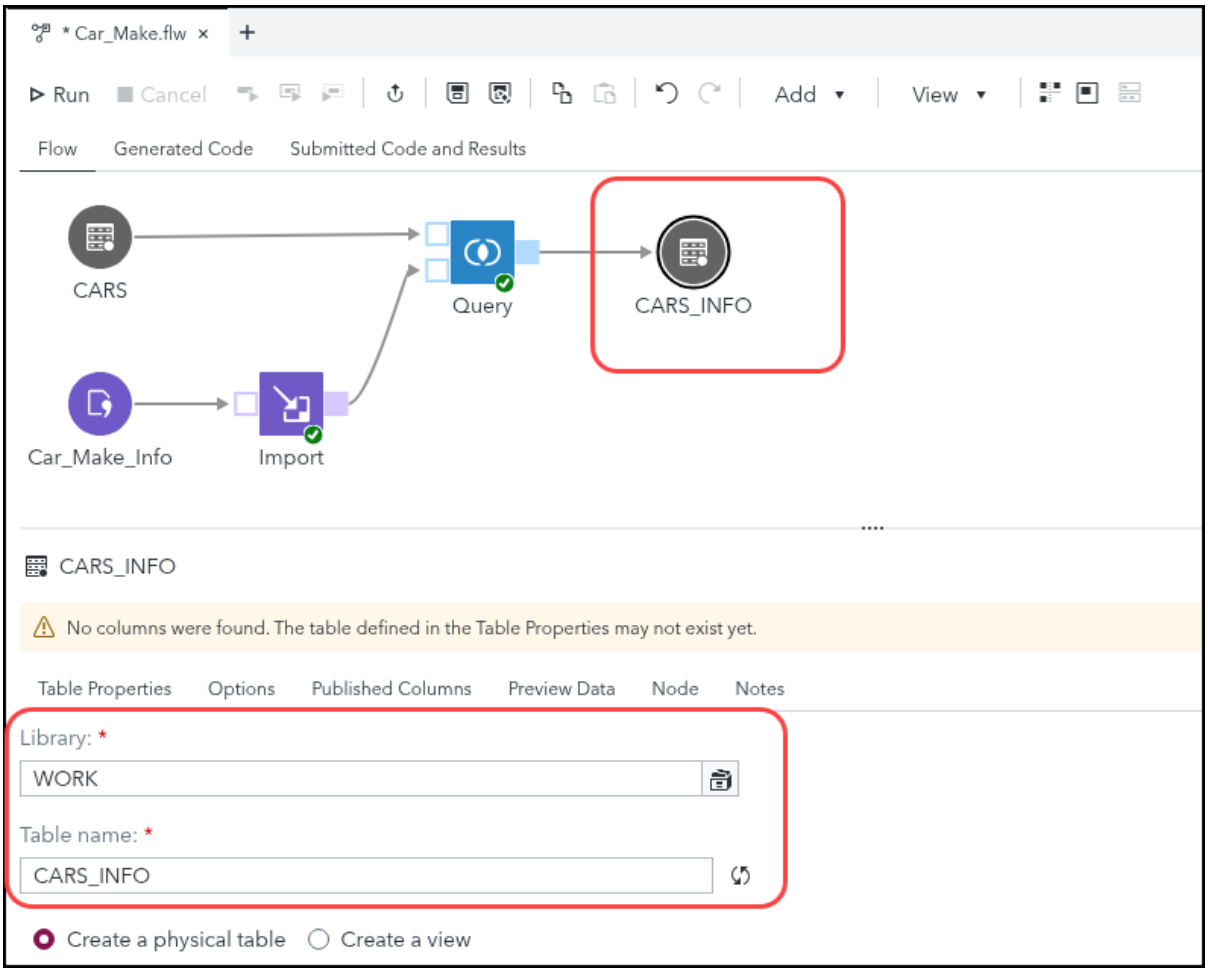
6. **Run** the flow and select the **Output port** of the *Query* step and **preview** its results.



Add Output Table Step to Flow

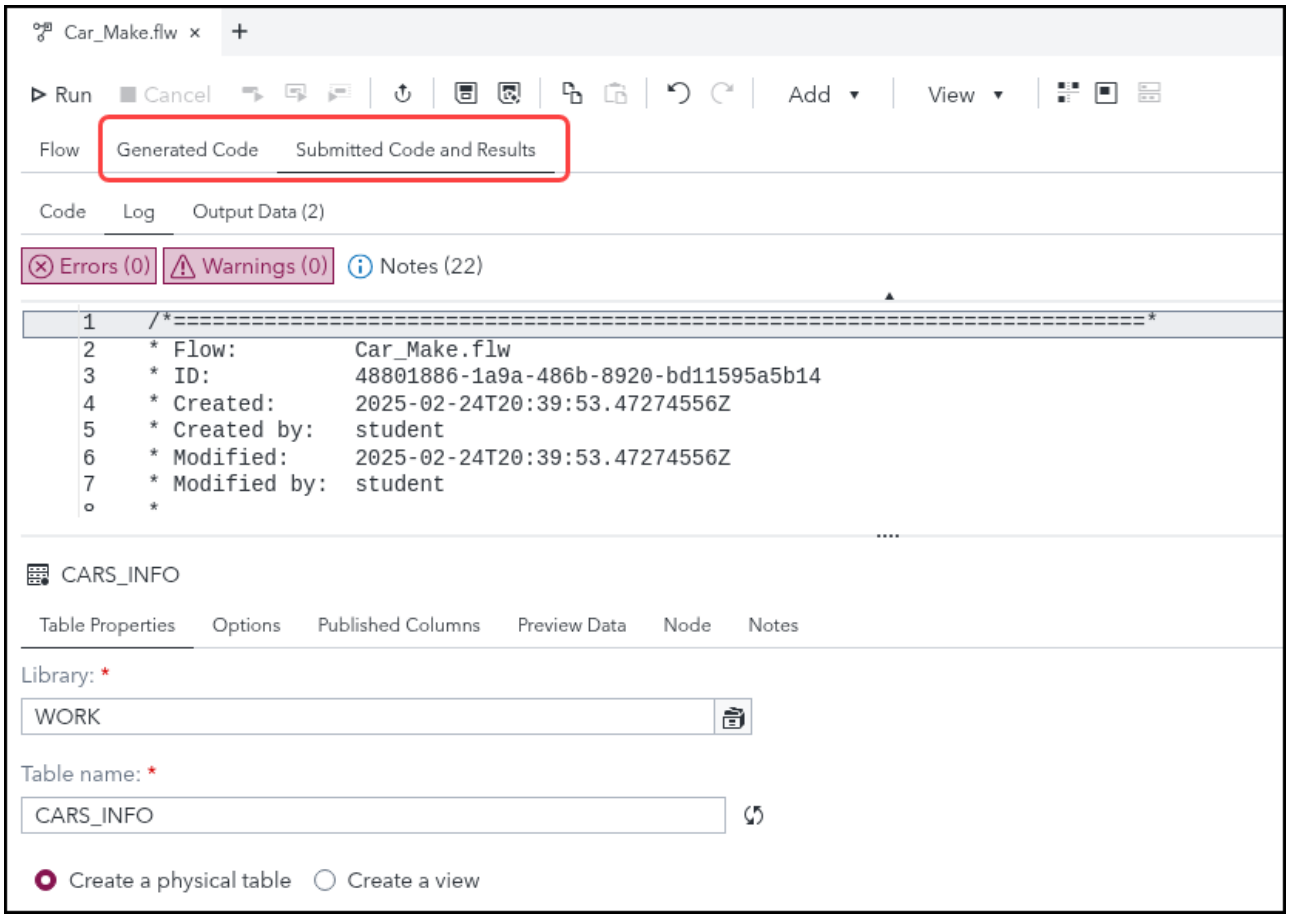
1. Add a **Table** step from the *Data (Input and Output)* section to the flow and connect it to the *Output port* of the **Query** step.
2. In the **Table Properties** section select the following:
   - Library: **WORK**
   - Table name: **CARS_INFO**

> ✎ This creates an output table for the flow. You will need to type the new table name.



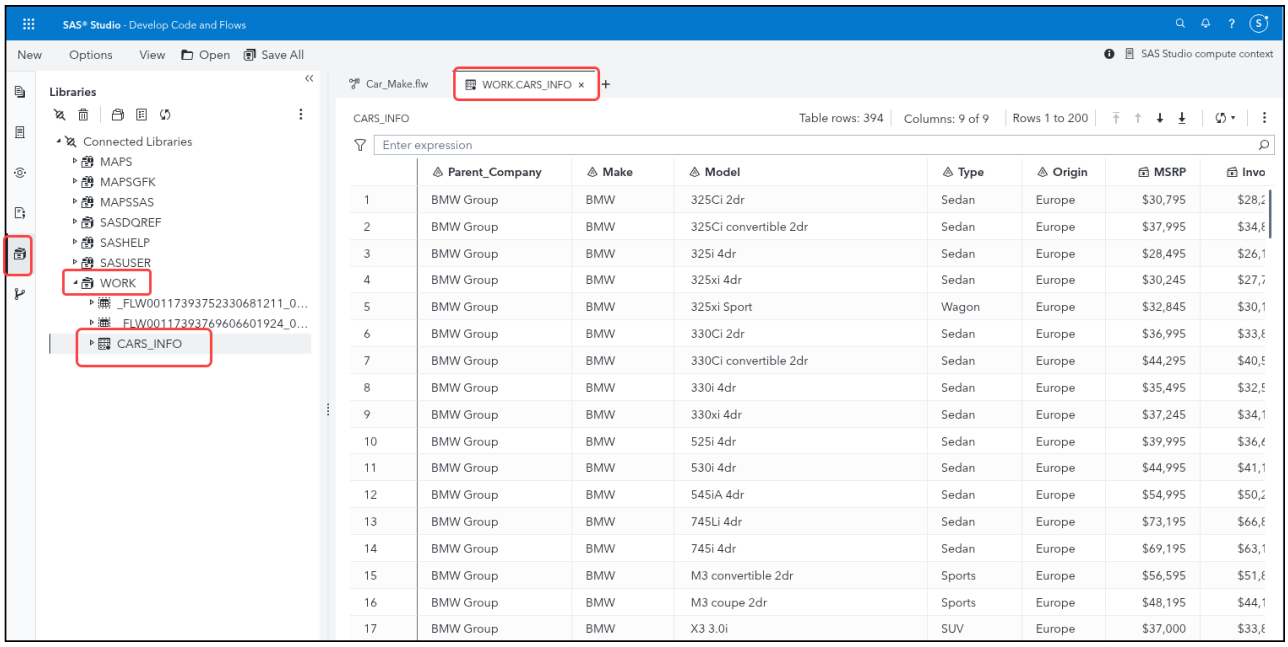
3. **Save** and **Run** the flow.

4. View the **Generated Code** and the **Submitted Code and Results** tabs.



5. Select  to view the Libraries pane.

6. View the **CARS_INFO** table in the **WORK** SAS library.



7. **Close** the *Table* and the *Flow* file.

Exercise Completed

YOU HAVE COMPLETED THE EXERCISE ON BUILDING A SAS STUDIO FLOW!

For additional information on SAS Studio Flows, please refer to its documentation.

THANKS FOR ATTENDING THIS WORKSHOP!