

Lab 3: Modeler Flows

You can create a machine learning flow, which is a graphical representation of a data model, or a deep learning flow, which is a graphical representation of a neural network design, by using the **Flow Editor**. Use it to prepare or shape data, train or deploy a model, or transform data and export it back to a database table or file in IBM Cloud Object Storage.

Prerequisites

To use the Flow Editor, you must have the following services:

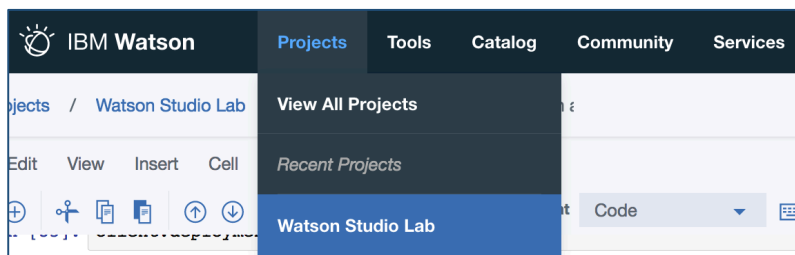
- A Spark instance
- An IBM Cloud Object Storage instance
- An IBM Watson Machine Learning instance


If you completed the first two labs (Model Builder and Notebooks) – then you are ready to begin.

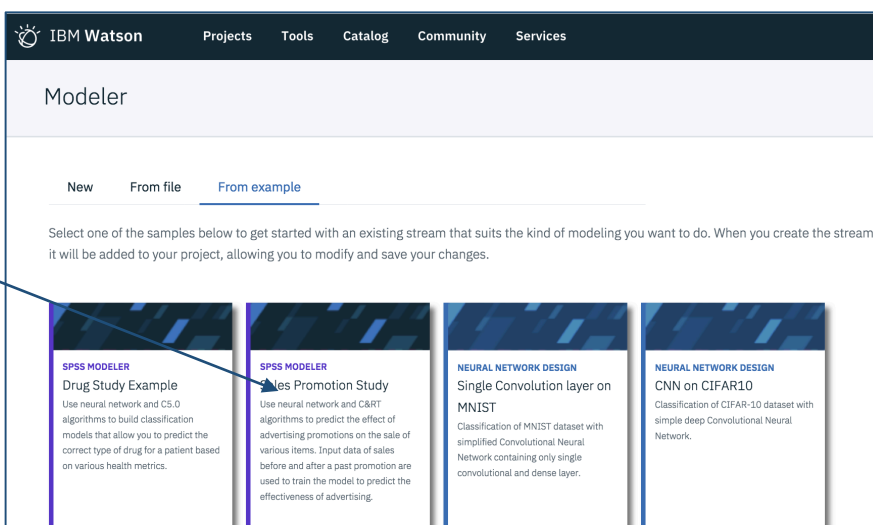
If you have not – refer to the Services Setup document in the Git repo:

<https://github.com/lindsaywithers/watson-studio>

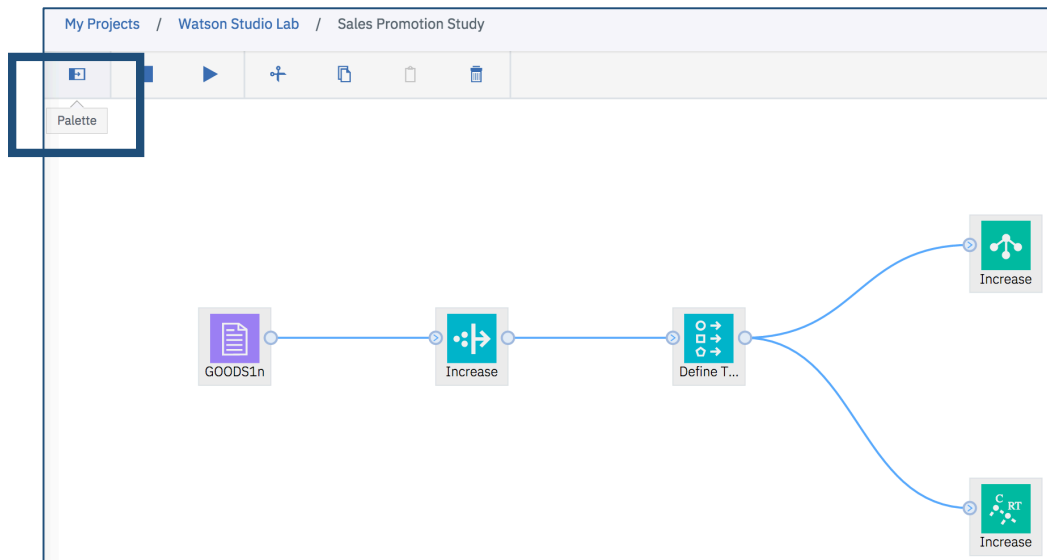
- Open your Watson Studio Lab project (FYI: by clicking the Projects drop-down from the menu tab across the top in Watson Studio, you can return to any project)



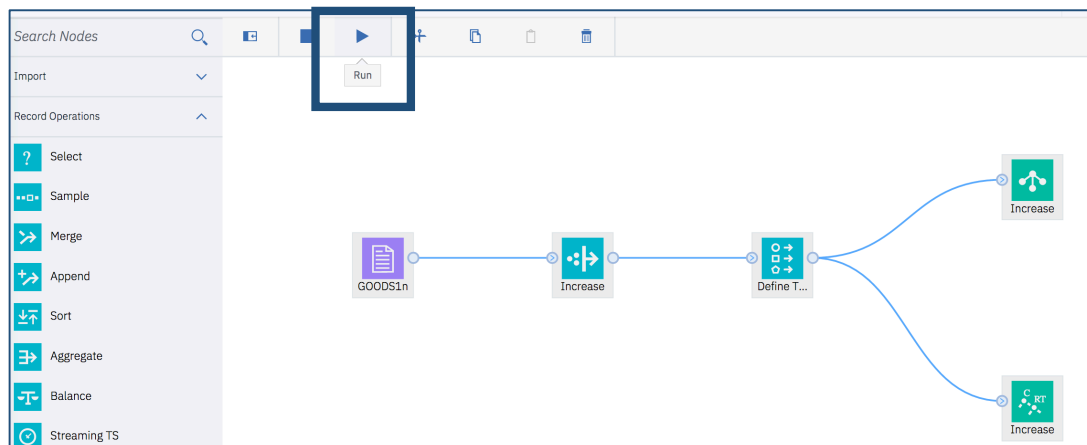
- From the toolbar for the project, click  **Add to project**, and then click **Modeler flow**.
 - **Notice** the option to create a modeler flow using SPSS or SparkML nodes, OR you can use the Neural Network Modeler to create a deep learning flow
 - For this lab, let's grab a sample flow to analyze. Move to the **From example** tab and select the **Sales Promotion Study** flow and click **Create**



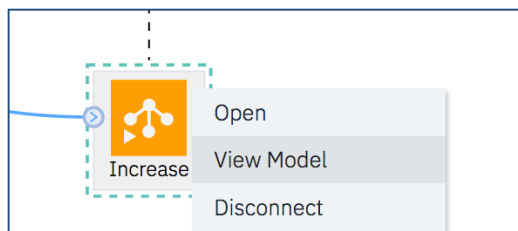
- Open the palette to explore the nodes available to you



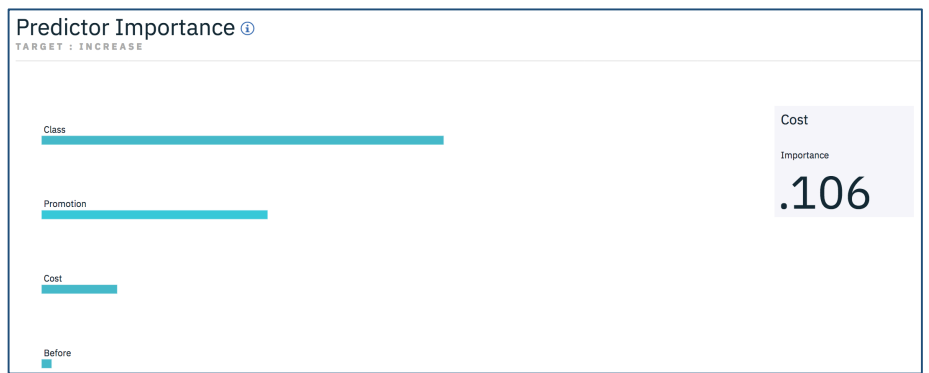
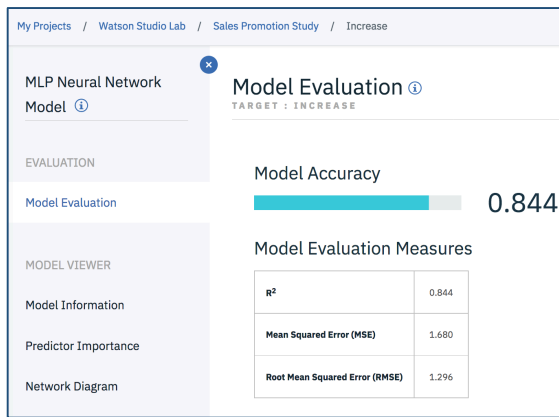
- When you're ready, click the play button to run the flow



- Once the run is complete – you'll notice the yellow 'nugget' nodes appear with the model results. Let's view our model:
 - Hover your mouse over one of the nugget nodes (models)
 - Click the three dots to open the menu
 - Click **'View Model'**



- Here, you have a view of the model accuracy, and can click thru to view other things such as predictor importance



- Return to the canvas by clicking **Sales Promotion Study** in the navigation at the top
- Double click the model node to save it, or download the stream with the download button

The screenshot shows the Watson Studio interface. On the left, a canvas displays a workflow with four nodes: 'Increase', 'Sales Pro...', 'Increase', and 'Increase'. The 'Sales Pro...' node is highlighted with a dashed green border. On the right, the 'Sales Promo Model' settings panel is open. The 'Confidence is based on' section has three options: 'The probability of the predicted value' (selected), 'The increase in probability from the next most likely value', and 'Predicted probability for categorical targets'. The 'Maximum categories to save' is set to 25. The 'Generate SQL for this model' section has three options: 'Default: Score using Server Scoring Adapter (if installed) otherwise in process' (selected), 'Score by converting to native SQL', and 'Score outside of the Database'. At the bottom of the panel are 'Cancel' and 'Save' buttons. A blue arrow points from the 'Download' button in the top toolbar to the 'Sales Promo Model' settings panel.