watsonx Orchestrate Lab 1c:

Building a Skillsflow

Objective

One of watsonx Orchestrate's main feature is to automate processes. Automation depends on multiple skills, feeding information from one step to another. In this lab, we will demonstrate how we can chain skills (custom and out of the box) together to complete a small task.
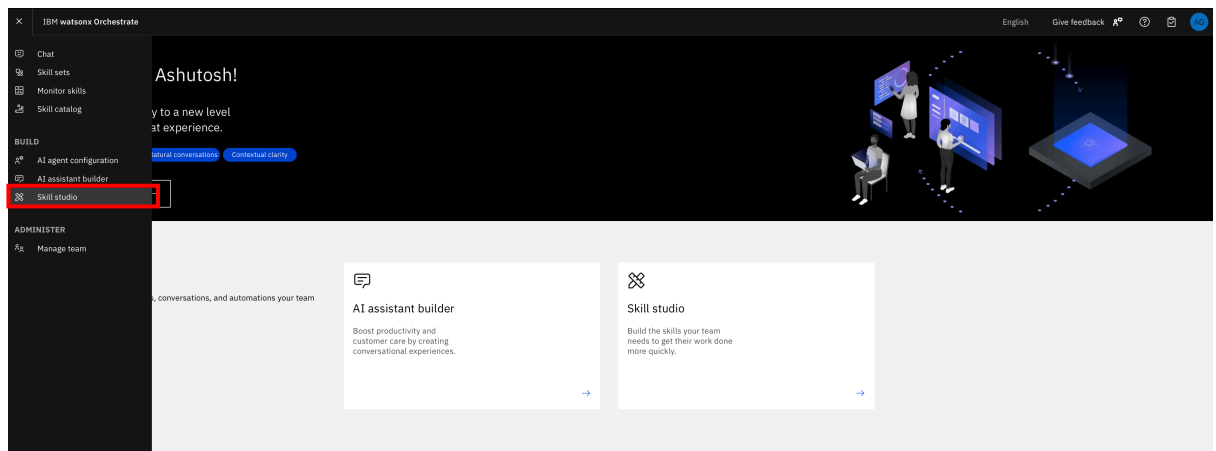
Prerequisite

You have completed previous labs and already have the following skills added

- Connected to OOTB Salesforce- Get all products
- Created custom skill: Text2SQL with Crew AI
- Created Machine Learning Model: Time Series
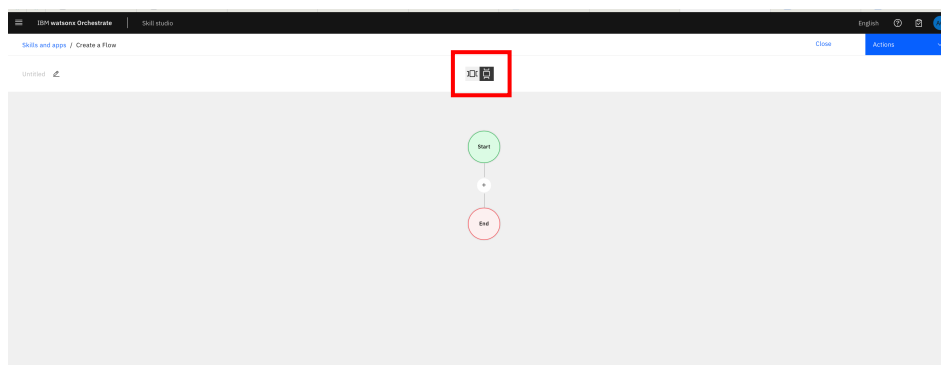- Created custom skill: Optimal Reorder Quantity

Create a Skillsflow

1. From the left hamburger menu, select the "Skill Studio".

Next, Click on "Create" menu on the top left of the window and select "Skill Flow".
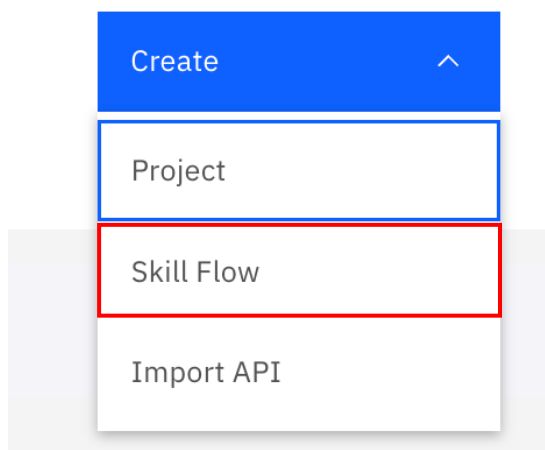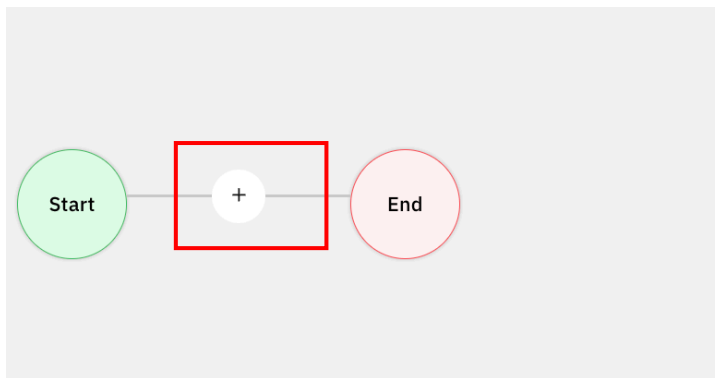

2. You will see the following window. You can change the orientation of the Skill flow by selecting either of the position (Horizontal / Vertical) as per your choice.
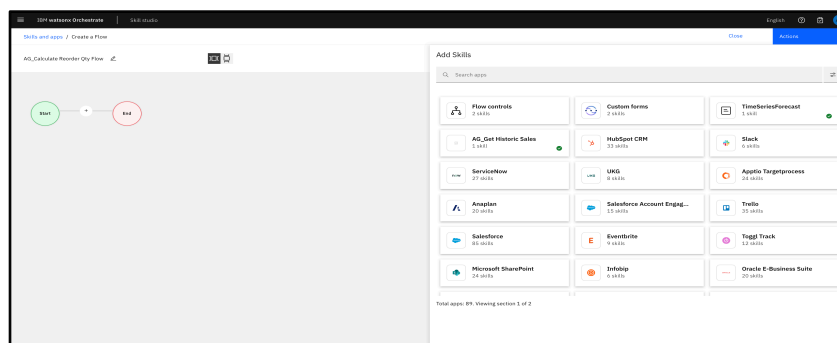
Give a name "[YourName] Calculate Reorder Qty Flow" to your Skill Flow, and click "Save".
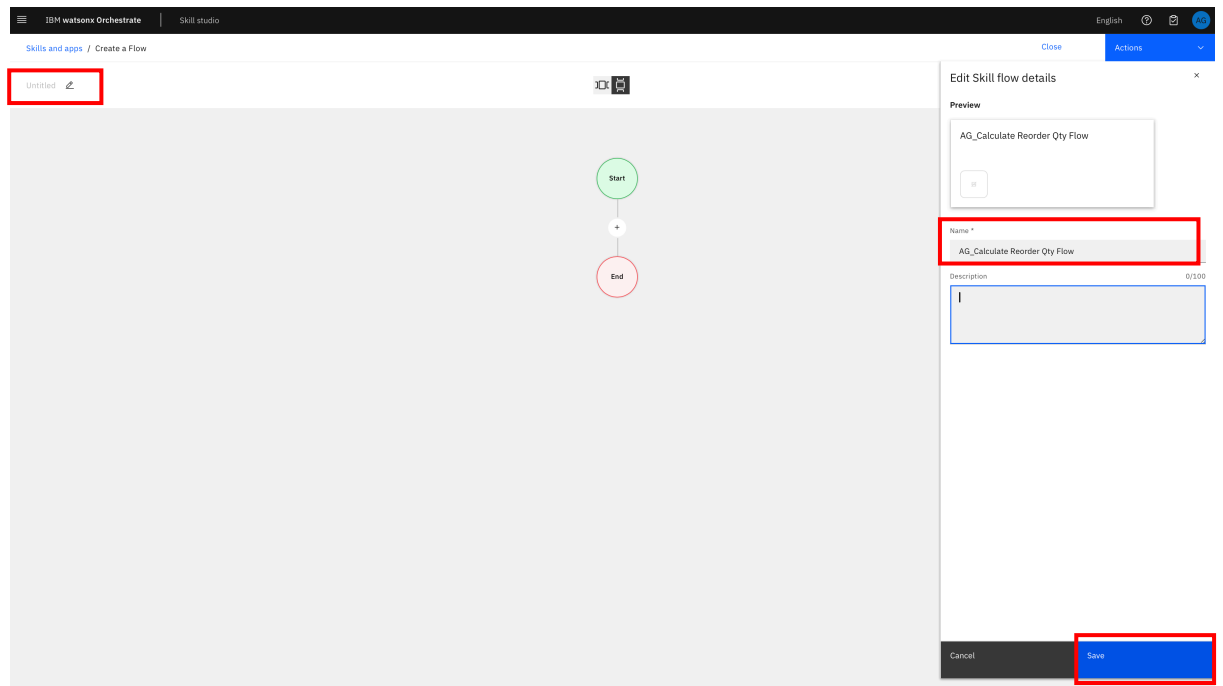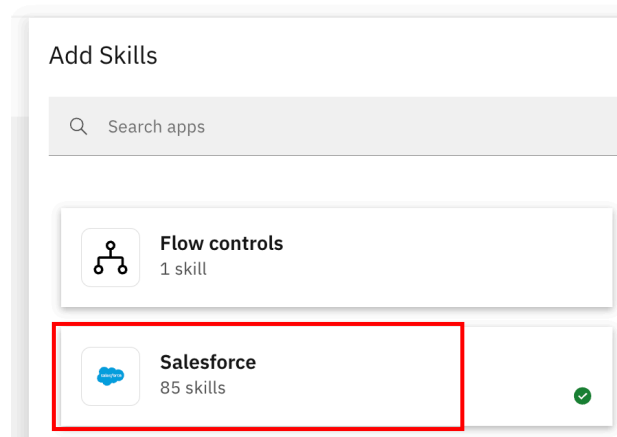

3. Add the first skill to our newly created skill flow. Let's get all products from Salesforce. Click on "+" sign in your skill flow.
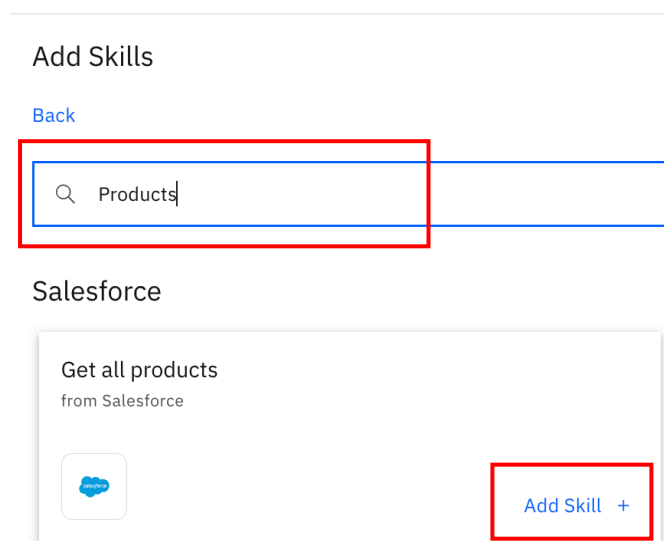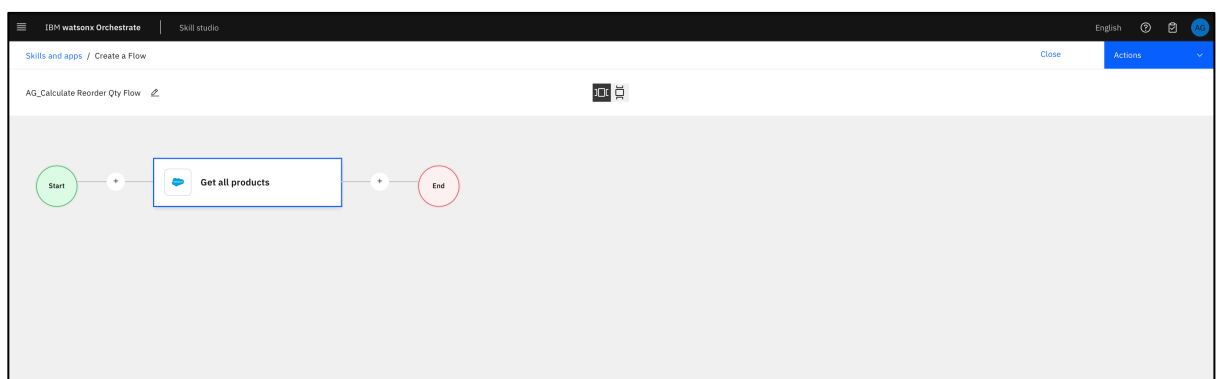

You will see the following window:

Next, search or select "Salesforce" from the Add Skills option.

After that, search for "Products" in the search bar and select "Get all products" tile .Click on "Add Skill" to add the this skills to your skill flow.
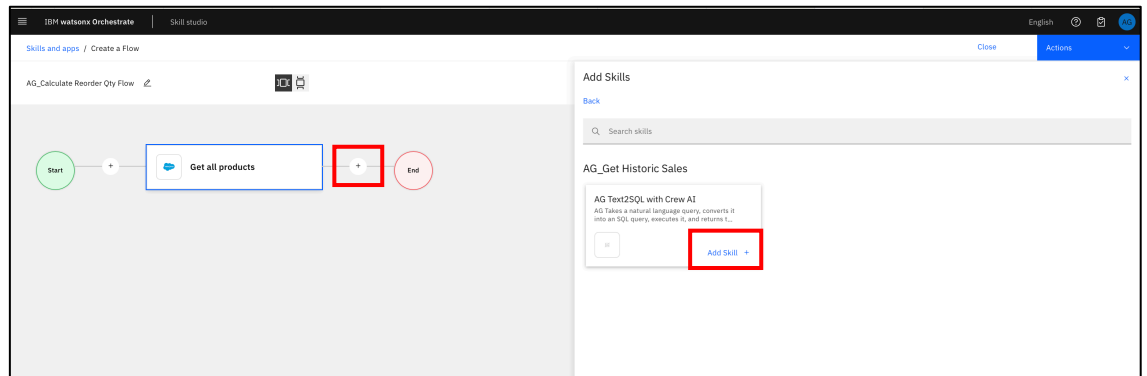

Now the window will look like as follows:

Follow the next steps to add more skills to the skill flow.

4. Add in all the other skills into flow like below.
    a. Search for "[YourName] Get Historic Sales for Text2Sql with Crew AI" which you added earlier in the previous labs and add it to the right to the "Get all Products" skill tile by simply clicking on "+" sign on the right side.

    b. Search for "TimeSeriesForecast for Auto_AI" tile which you added earlier in the previous labs and add it to the right to the "[YourName] Get Historic Sales for Text2Sql with Crew AI" skill tile by simply clicking on "+" sign on the right side.
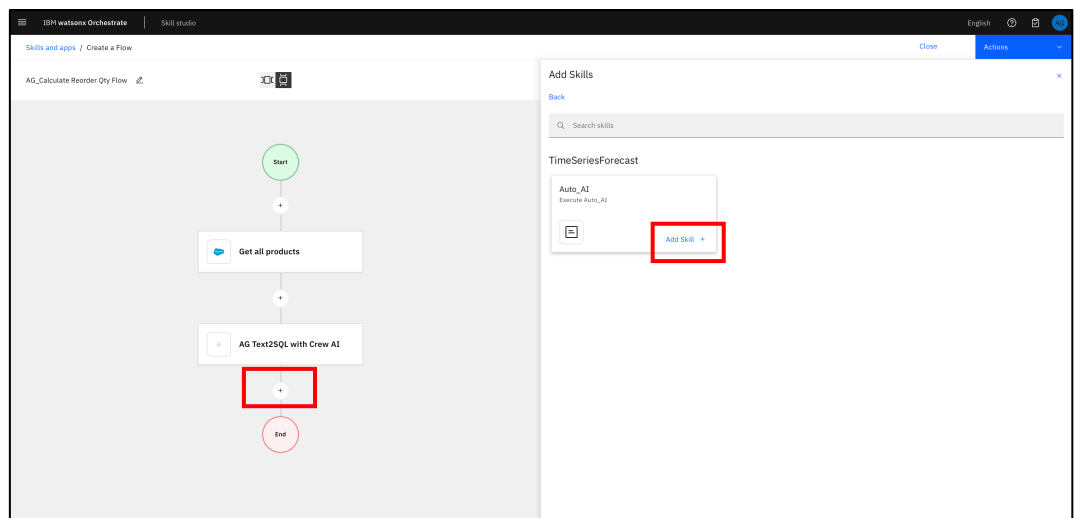
    c. Search for "Calculate Reorder Quantity for Optimal Reorder Quantity" tile which you added earlier in the previous labs and add it to the right to the "TimeSeriesForecast for Auto_AI" skill tile by simply clicking on "+" sign on the right side.
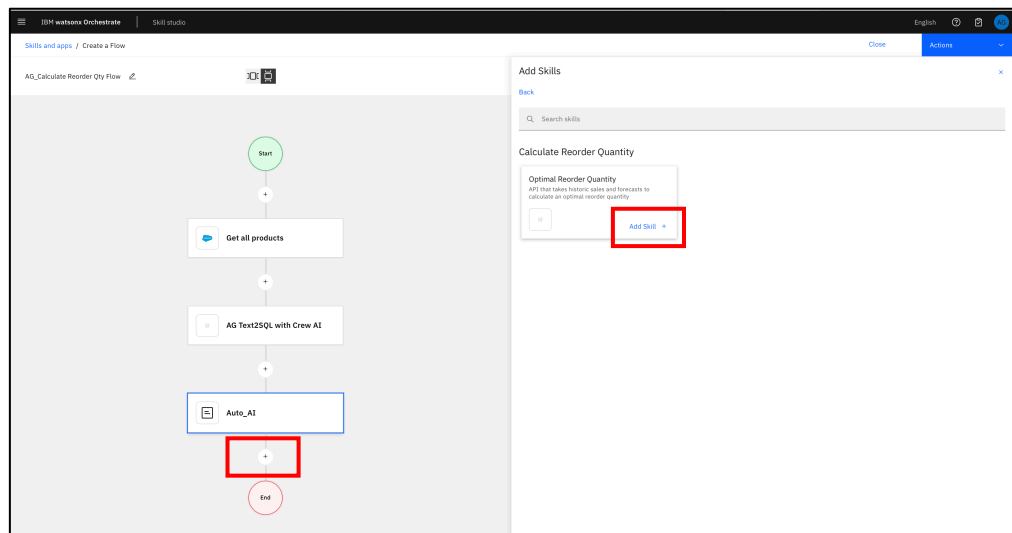
Once, you added all the four skills to your skill flow, it will look like as follows: (You can select the orientation of your skill flow as per your choice)
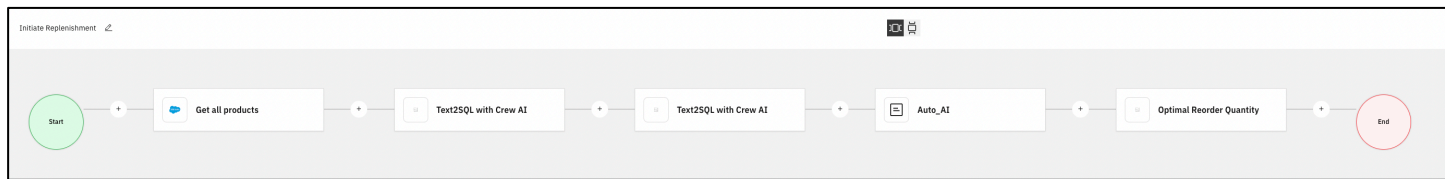
Or
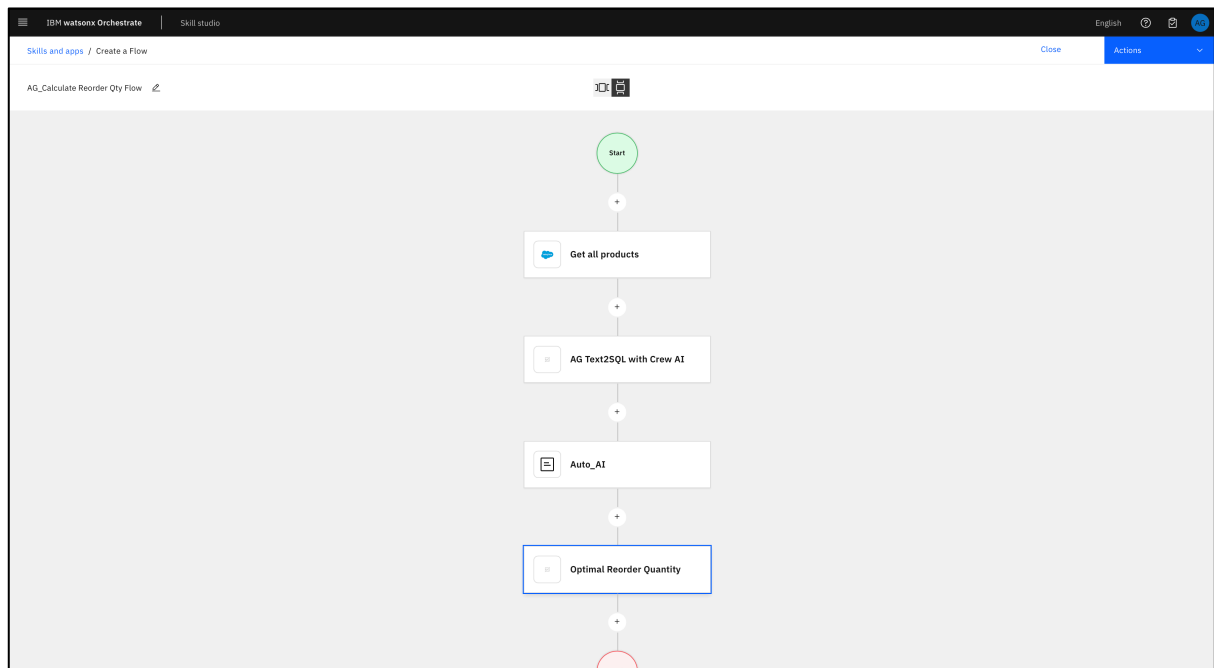
Please do not forget to save the draft after each step.

Configure Skills Variables in SkillFlow

We will now pre-configure some of the variables within each skill so that from user's perspective, they only need to confirm and check the information of each step. The pre-configured values here are for guidance. The values can be changed at any time and results will differ with each change.

1. Click on the Get all products tile from the flow and set a filtering mechanism as below: Select "Product Name" in the filterable input. Operator value should be "is" and edit the value field as" Xtralife". (Click on the pencil icon to enter text)

2. Next step, click on the Text2Sql with Crew AI tile from the flow and write down the following query into the text box. (Click on the pencil icon to enter text) *"How much quantity was sold last month for Xtralife?"*

Repeat this skill

| **Input** | Output | Clear all mappings ✎ Generate |

Hide this form from the user

query

How much quantity was sold last month for Xtralife ?

Add transformation +

3. Repeat Step 2 for the next Text2Sql with Crew AI. Fill the query with *"What was the sales figure last month for Xtralife?"*
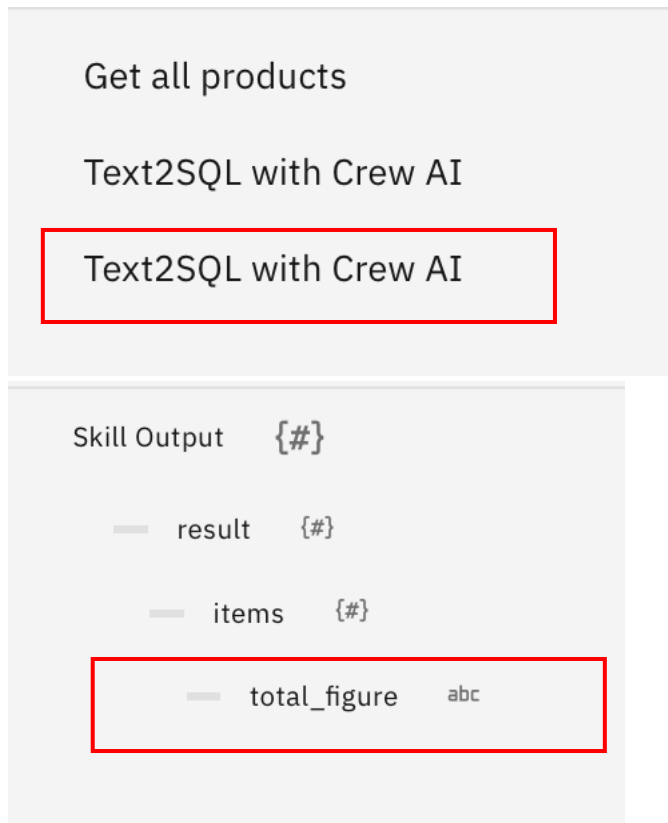
Repeat this skill

| **Input** | Output | Clear all mappi |

Hide this form from the user

query

What was the sales figure last month for Xtralife ?

Add transformation +
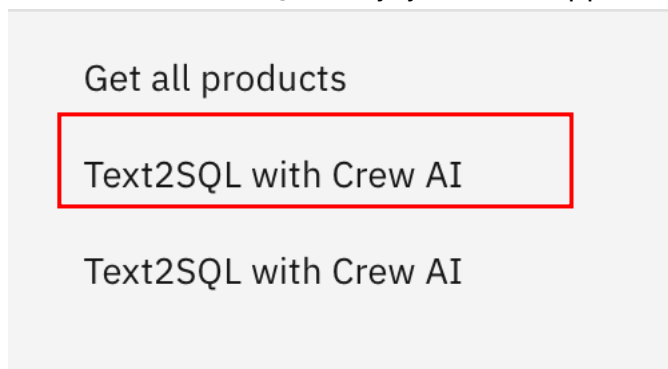
4. Click on the Auto AI tile from the flow and set the "lastMonthSales" to the Text2SQL result. **As we have 2 of the same skills (in case), take note that you select from the last one as shown in the image.**

Get all products

Text2SQL with Crew AI

Text2SQL with Crew AI

Skill Output   {#}

— result   {#}

— items   {#}

— total_figure   abc

5. For the lastMonthQuantity, you will mapped it with the first Text2SQL

Get all products

Text2SQL with Crew AI

Text2SQL with Crew AI

6. For Optimal Reorder Quantity skill, we will need to map the values using output from another skill.
   a. The forecast value will come from the Auto AI tile. Click on the space and TimeSeriesForecasting.

b. From the Skill Output, click on the quantity tile.

c. Finally, the forecast variable will have the following mapping.

7. For historic_data, we will get the value from the first Text2Sql with Crew AI output.

Get all products

Text2SQL with Crew AI

Text2SQL with Crew AI

Mapping data for "historic_data"

Skills/Get Historic Sales-Text2SQL with Crew AI

Skill Output {#}

result {#}

items {#}

total_figure abc

8. Finally, the current_inventory field will use output from our OOTB Salesforce skill.

Mapping data for "current_inventory"

Skills/

Get all products

Text2SQL with Crew AI

Time Series Forecasting

Mapping data for "current_inventory"

Skills/Salesforce-Get all products

Skill Output {#}

instances {#}

items {#}

Product_Amount__c abc

9. The final mapping will look like this

Calculate Reorder Quantity

Calculate optimal reorder quantity based on historic sales and forecasts.

⬤◯ Repeat this skill

Input	Output	Clear all mappings 🧹	Generate

◯ Hide this form from the user

forecast

> quantity ✕

historic_data

> result.items.properties.total_figure ✕

current_inventory

> instances.items.properties.Product_Amount__c ✕

10. If any of the mapping is not showing for you, you can use the "Generate mapping" functionality.
11. On the top right, click on Actions and then Enhance. Save the flow if you are asked to.
12. Click Publish at the end.

Testing the skill

Refer to Lab 1a and Lab 1b on the steps to add the skill flow into the AI Agent Configuration. You will need to search for this within Skill Flows. You can use the description Calculate Reorder Flow.

After that, you can go to the chat interface and type in "Calculate Reorder Flow". Go through the skill flow that you've created.