



Microsoft Cloud for Retail

In A Day

Lab 05: Retail Churn Model

Step-by-Step Lab

March 2022

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Overview

Unified customer profile is one of the key capabilities of Microsoft Cloud for Retail. In some ways, it's where the data story comes together. So, what does it do? Unified customer profile helps you gain insights across the complete view of a shopper's journey.

With unified customer profile, you can gain a 360-degree perspective of the customer in a clear and intuitive way so that you can provide personalized experiences, reveal important opportunities, prevent potential loss, or churn, and improve customer satisfaction.

Unified customer profile bolsters **unification**. You can:

- Bring multiple identities together to create a 360 view of the customer through AI-powered identity resolution
- Ingest multiple types of data, behaviors, and customer sentiment in real time via more than 500+ built-in connectors

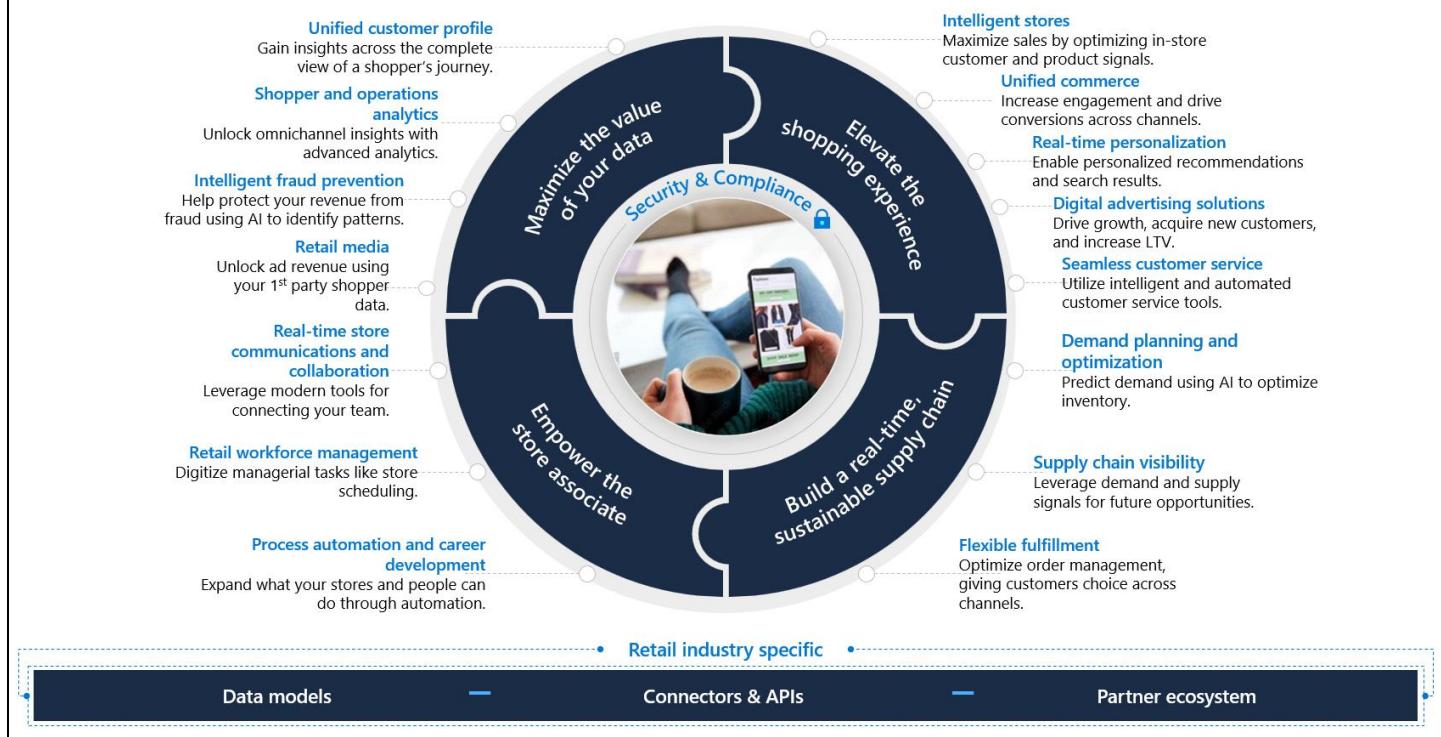
It also fosters **unique enrichment**:

- Gain a 360 view of the customer with proprietary audience intelligence from Microsoft Graph
- Leverage cross-channel behavior to complete the picture of your end-customer

Furthermore, Unified customer profile also gives you better access to customer **insights**:

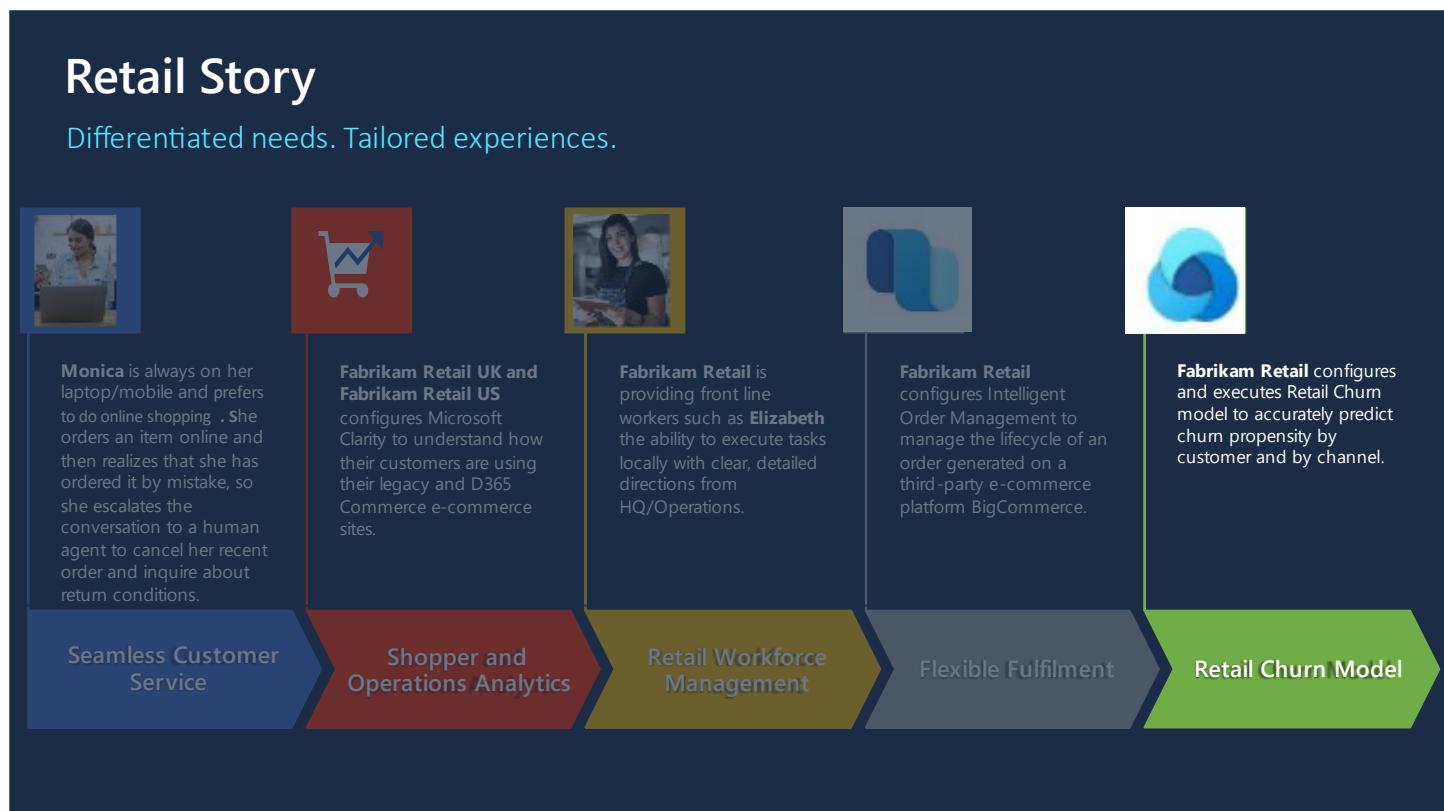
- Gain more nuanced insights by combining digital analytics with customer profiles to create richer segments, and leverage churn models to understand churn risk at a glance
- Observe customer progress through each defined step of the journey, quickly identifying obstacles and opportunities
- Create custom reports and views based on real-time customer behavior data, leverage built-in web and mobile analytics to predict customer needs

Capabilities connecting your customers, your people, and your data



Learning Objectives

Retail Story



This lab will focus on the retail story of Fabrikam Retail.

In the following exercises, you will be playing the role of a System Administrator and a Developer:

In **Exercise 1**, you will be creating a **Customer Insights** environment and deploy **Unified customer profile** via Solution Center. In **Exercise 2**, you will learn the steps to import Fabrikam retail's customer data from azure blob storage, generate retail churn model and analyze the churn predictions.

Prerequisite(s)

- Dynamics 365 Customer Insights

Customer Intelligence

Customer intelligence unifies important, relevant, and accurate customer information across multiple sources via Dynamics 365 Customer Insights. This solution empowers the agent to engage with customers based on relevant insights. Customer intelligence combines demographic information, financial measures, and attitudes to form financial segments and AI models. These insights help agents to quickly understand the customer.

Prerequisites:

- At least Contributor permissions in Dynamics 365 Customer Insights. More information: [User permissions](#).

Exercise 1: Create and Configure Dynamics 365 Customer Insights Environment

Note: If you have already deployed D365 Customer Insights environment and Unified Customer Profile solution then you can skip this exercise.

In this exercise, you will create and configure a Dynamics 365 Customer Insights environment in order to deploy the Retail Churn Model.

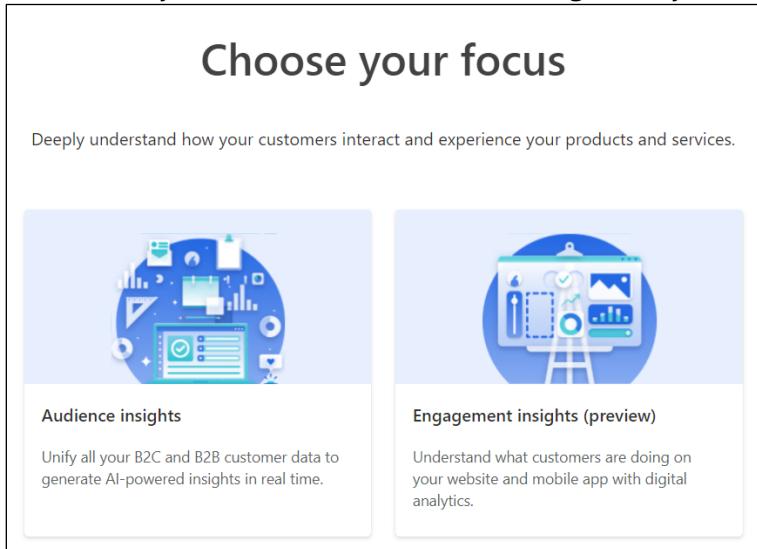
[Dynamics 365 Customer Insights](#) is a part of Microsoft's customer data platform (CDP) that helps deliver personalized customer experiences. The platform's capabilities provide insights into who your customers are and how they engage with your platform. Unify customer data across multiple sources to get a single view of customers.

- [Audience insights](#) helps you transform your business into a customer-centric organization. Marketing, sales, and service professionals have the insights they need to personalize experiences. Connect data from transactional, behavioral, and observational sources to create a 360-degree customer view. See results faster with a CDP designed to deliver insights that can be acted upon.
- [Retail channel churn predictive model](#): Retail channel churn predictive model, a key feature of Unified customer profile, uses an AI-based model to help omnichannel retailers use cross-channel data to assess the chance that a customer will churn—stop actively buying.

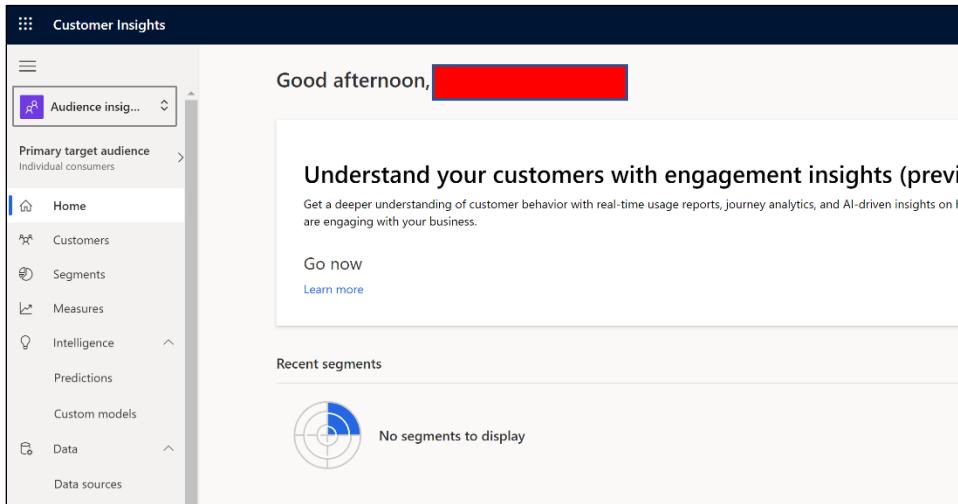
Task 1: Create Customer Insights Environment

In this task you will create a new Customer Insights sandbox environment. To set **Customer intelligence** up correctly, you must first create a Customer Insights sandbox environment and connect it to your Dataverse environment with no Data Sources specified. Once connected, you will go through [Solution Center](#) and deploy **Customer intelligence** from **Unified customer profile**, specifying the Customer Insights environment that you create in this task.

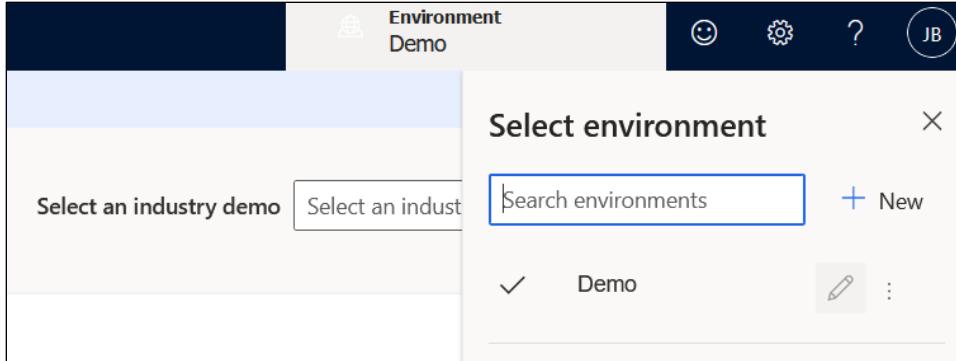
1. Using an In-Private or Incognito window, navigate to <https://home.ci.ai.dynamics.com/> and log in with the credentials provided by your instructor.
2. If not already selected, select **Audience insights** as your focus.



3. Your screen would look like this with Audience Insights selected:



4. In the top right corner of the screen, click on the environment name and then click **+ New** to create a new environment



5. Fill out the appropriate fields and click **Next**.

- a. **Name:** <<UserName>> Retail Churn
- b. **Choose your business:** Individual consumers (B-to-C)
- c. **Type:** Pitch Demo
- d. **Region:** West US

Create an environment

Basic information
 Advanced reporting
 Data storage
 Microsoft Dataverse
 Review

Basic information
Environments serve as a home base for your data and for your team.

Name *

Copy from existing environment (preview)

Choose your business *

Type *

Region * ⓘ

6. **Deselect** Power BI Reporting and click **Next**.

Create an environment

Basic information

Advanced reporting

Data storage

Microsoft Dataverse

Review

Advanced reporting

Use Microsoft Power BI to visualize your data.

Power BI reporting

Perform computations using *

Power BI with Azure Synapse Analytics

Sign into Power BI to pick a capacity

Sign in

Select a capacity *

Subscription *

Select an option

Synapse workspace *

Select an option

Back **Next** Review and finish Cancel

7. Leave **Customer Insights storage** selected and click **Next**.

Create an environment

Basic information

Advanced reporting

Data storage

Microsoft Dataverse

Review

Data storage

Azure Datalake storage for your high performance Audience Insights work loads.

Save output data to *

Customer Insights storage

Back **Next** Review and finish Cancel

8. Leave the Microsoft Dataverse environment URL blank and click **Next**.

Create an environment

Basic information
Advanced reporting
Data storage
Microsoft Dataverse
Review

Microsoft Dataverse

Provide your own Microsoft Dataverse environment to share data (profiles and insights) with Dataverse based business applications. Leave this field empty if you don't have one and we will provision one for you and share data with Dataverse.

Microsoft Dataverse environment URL

Back **Next** Review and finish Cancel

9. Click **Create**.

Create an environment

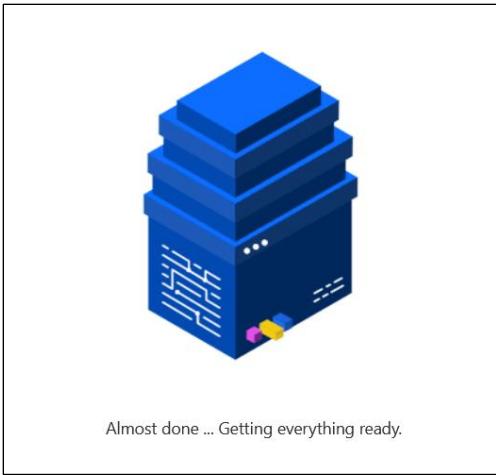
Basic information
Advanced reporting
Data storage
Microsoft Dataverse
Review

Review

Basic information	Edit
Name:	Retail Churn
Audience type:	Individual consumers (B-to-C)
Type:	PitchDemo
Region:	West US
Advanced reporting	Edit
User capacity selected:	No
Data storage	Edit
Output storage type:	Customer Insights storage
Microsoft Dataverse	Edit
Server address:	--
Enable data sharing:	No

Back **Create** Cancel

10. Wait for the environment to be created



Congratulations! You have successfully created a CI environment.

Task 2: Deploy Retail Churn Model

1. Open a **new tab** in our internet browser and navigate to the Microsoft Cloud Solution Center at solutions.microsoft.com
2. Expand **Retail** and navigate to **Unified customer profile**. Check **Add** next to Unified customer profile and then click **Deploy**.

The screenshot shows the Microsoft Cloud Solution Center interface. On the left, there's a sidebar with categories: Home, Solutions, Nonprofit, Financial Services, Retail (which is selected), Healthcare, and Support. Under the 'Solutions' category, there are links for Nonprofit, Financial Services, Retail, Healthcare, and Support. In the main content area, there's a search bar with 'Unified customer profile' and a 'Deploy (1)' button. Below the search bar, there's a section titled 'Unified customer profile' with a brief description: 'Gain insights across the complete view of a shopper's journey.' There are two cards: 'Unified customer profile (Public Preview in U.S.)' and 'Dynamics 365 Customer Insights'. The 'Unified customer profile' card has a checked 'Added' checkbox and 'Quick view' and 'Go to setup' buttons. The 'Dynamics 365 Customer Insights' card has 'Quick view' and 'Go to setup' buttons.

3. Select the **Customer Insights Environment** that you created in the previous task, **provide a name** for your deployment, **agree** to the terms and conditions, and click **Next**.

Microsoft Cloud Solution Center

Set up solution

Solutions Nonprofit Financial Services Retail Healthcare Support

Set up new deployment

- Configure dependencies
- Deploy solution
- Success

Set up new deployment

Follow these steps to set up and deploy your new solutions

Customer Insights Environment Retail Churn

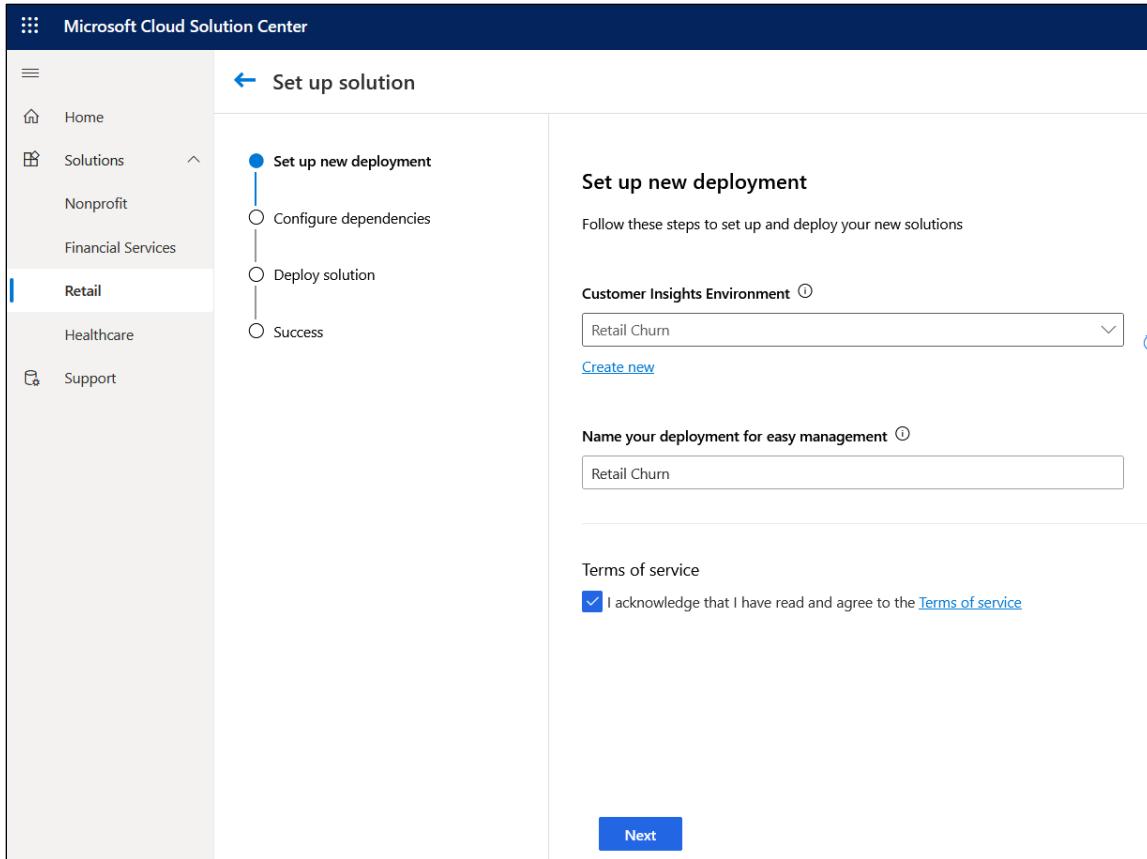
[Create new](#)

Name your deployment for easy management Retail Churn

Terms of service

I acknowledge that I have read and agree to the [Terms of service](#)

Next



- Click Deploy to deploy the Retail Churn model to your Customer Insights environment.

Microsoft Cloud Solution Center

Set up solution

Solutions Nonprofit Financial Services Retail Healthcare Support

Configure dependencies

- Deploy solution
- Success

Configure pre-deployment dependencies

This solution has dependencies on other applications. We've run an automated check to see if the dependent applications have already been installed and configured.

Solution dependencies

These dependencies are required to be installed and configured in the destination selected in the previous step.

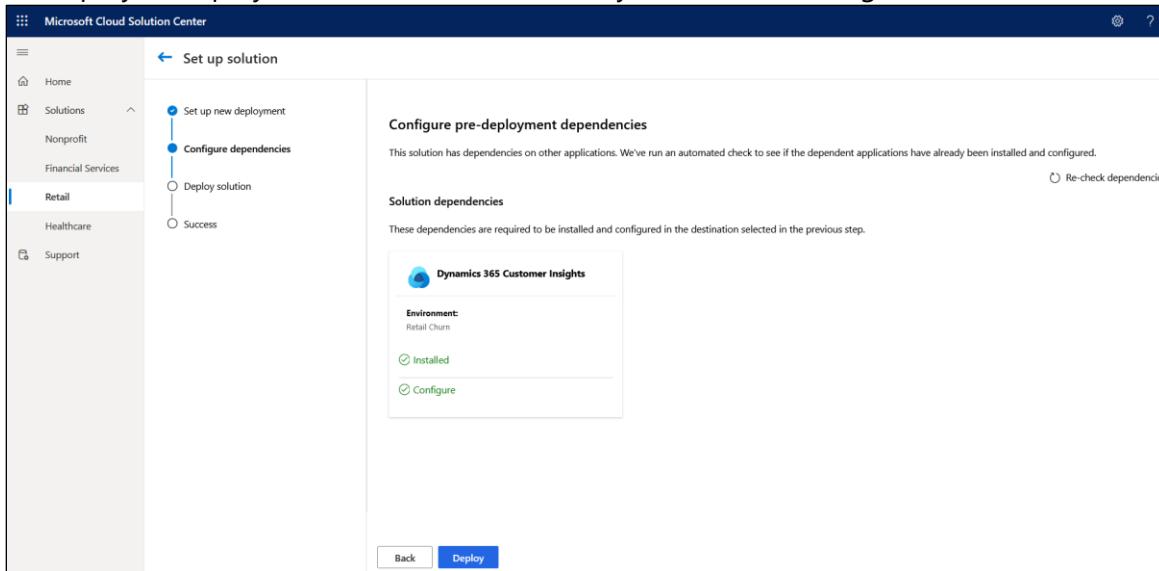
Dynamics 365 Customer Insights

Environment: Retail Churn

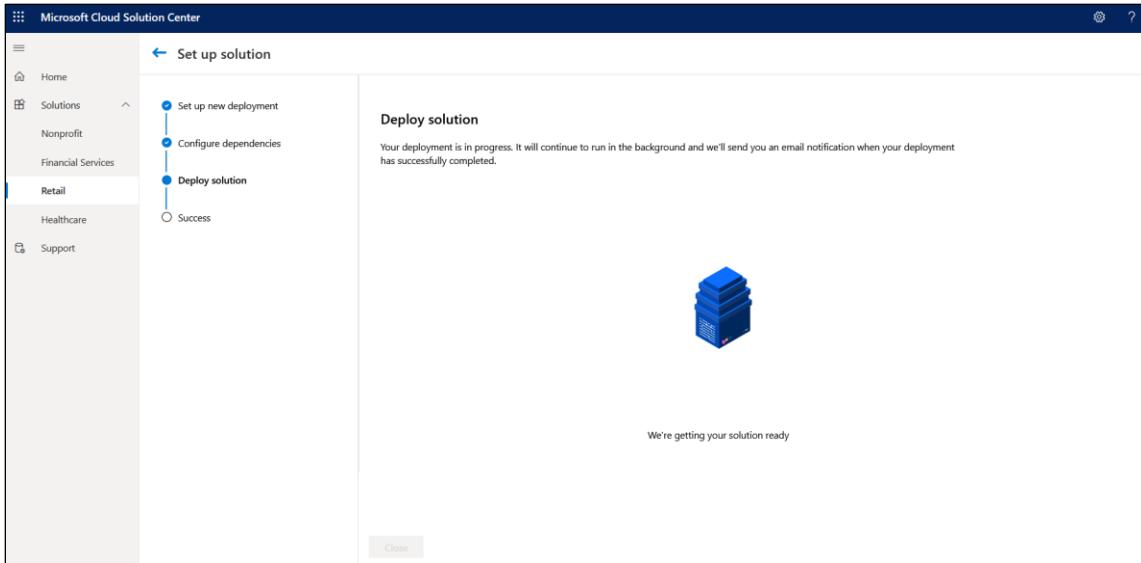
Installed

Configure

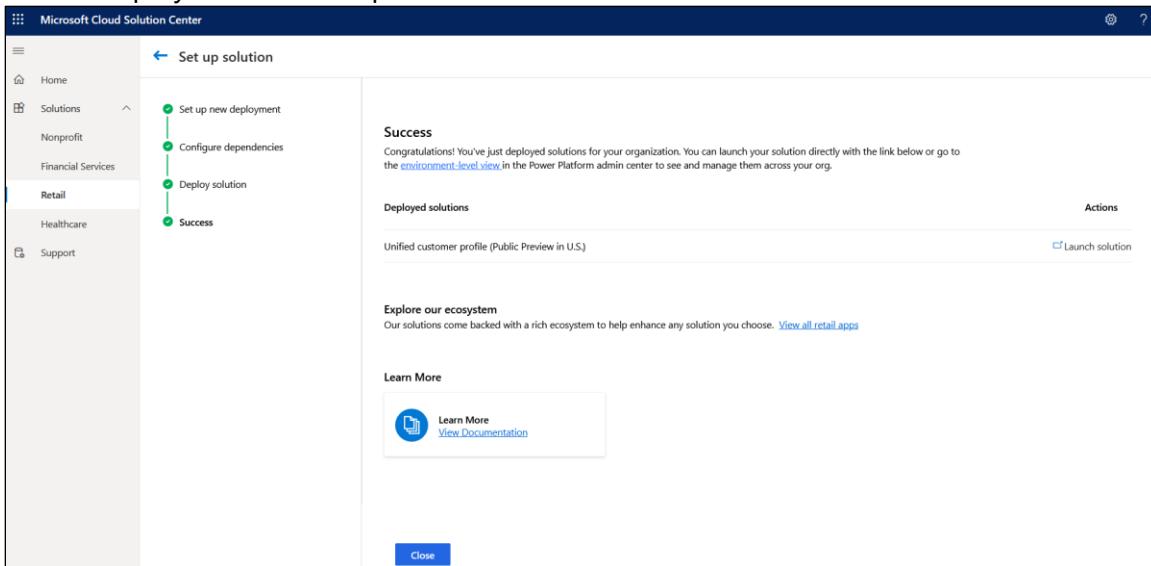
Back Deploy



- Deployment will take several minutes to complete.



- Once the deployment has completed, click **Close**.



Congratulations! You have successfully deployed Retail Churn Model.

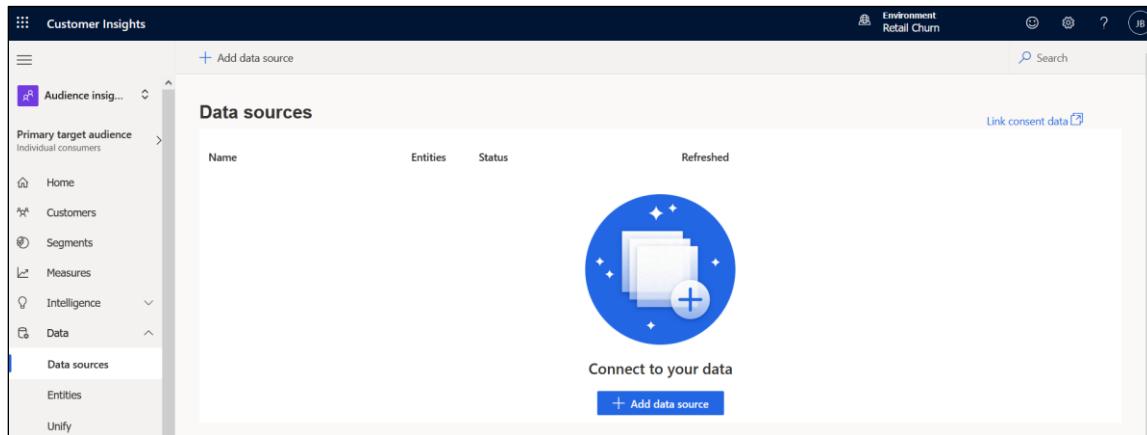
Exercise 2: Configure Retail Churn Model in Dynamics 365 Customer Insights

In this exercise, you will configure the Retail Churn Model in the Dynamics 365 Customer Insights environment you created in the previous exercise.

Task 1: Add a Data Source

In this task, you will add a data source for your Retail Churn model.

1. Navigate to your newly created Customer Insights environment, expand **Data**, and go to **Data sources**. Click **Add data source**.



2. Select **Microsoft Power Query** save the data source as "RetailGroceryChurn", and then click **Next**.

A screenshot of the 'Choose your import method' step in the Microsoft Power Query setup wizard. It shows a list of options:

- Microsoft Power Query
Files, databases, Microsoft Azure services, and third-party online services
[Learn more](#)
- Azure Synapse Analytics (Preview)
Get data from Azure Synapse Analytics
- Azure data lake storage
Azure Data Lake storage accounts
[Learn more](#)
- Microsoft Dataverse
Data sets in the Common Data Service data lake
[Learn more](#)
- Customer Insights data library
Get data from Datahub catalog

A note at the bottom states: 'Data stored in an online service such as Azure Data Lake Storage may be stored in a different location than where data is processed or stored in Dynamics 365 Customer Insights. By importing, or connecting to, data stored in an online service such as Azure Data Lake Storage, you agree that data can be transferred to, and stored with, Dynamics 365 Customer Insights. Learn more at the [Microsoft Trust Center](#)'. Below this, there's a section to 'Provide a name to identify your data source' with a 'Save data source as:' input field containing 'RetailGroceryChurn'. A note says: 'Use both letters and numbers—no spaces or special characters (3-64 characters)'. At the bottom right are 'Cancel' and 'Next' buttons.

3. Choose the **Azure Blobs** connector.

Select a connector or directly drag a file from your computer.

All categories File Database Power Platform Azure Online services Other

Search

Data sources

Excel workbook File	Folder File	JSON File	PDF File	Parquet File
SharePoint folder File	Text/CSV File	XML File	Access Database	Amazon Redshift Database
Google BigQuery Database	IBM Db2 database Database	Impala Database	MySQL database Database	Oracle database Database
PostgreSQL database Database	SAP BW Application Server Database	SAP BW Message Server Database	SAP HANA database Database	SQL Server database Database
Snowflake Database	Sybase database Database	Teradata database Database	Vertica Database	Azure Analysis Services Azure
Azure Blobs Azure	Azure Data Explorer (Kusto) Azure	Azure Data Lake Storage Gen2 Azure	Azure HDInsight Spark Azure	Azure SQL database Azure
Azure Synapse Analytics (SQL...) Azure	Azure Tables Azure	Adobe Analytics Online services	Google Analytics Online services	Microsoft Exchange Online Online services
Salesforce objects Online services	Salesforce reports Online services	SharePoint Online list Online services	Smartsheet Online services	Active Directory Other
FHIR Other	OData Other	OdBC Other	SharePoint list Other	Spark Other

Cancel

- Refer to the **Storage Account name** and **Access Key** provided in your lab assignment document for this step.

Connection settings

Account name or URL *
retailchurn

Connection credentials

Data gateway
(none)

Authentication kind
Account key

Account key
[REDACTED]

Back Cancel Next

- Select **retailgrocery** and click **Transform data**.

Power Query - Choose data

Search

Display options ▾

Azure Blobs [6]

- clothing
- convenience
- food
- grocery
- hardware
- retailgrocery**

Content	Name	Extension	Date accessed	Date modified	Date created	Attributes	Folder Path
[Binary]	Grocery_contact.csv	.csv	null	2/25/2022, 4:47:21 ...	null	[Record]	https://retailchurn.blob.core.windows.net/retailgrocery/
[Binary]	Grocery_msrc_session.csv	.csv	null	2/25/2022, 4:48:42 ...	null	[Record]	https://retailchurn.blob.core.windows.net/retailgrocery/
[Binary]	Grocery_msrc_transaction.csv	.csv	null	2/25/2022, 4:49:15 ...	null	[Record]	https://retailchurn.blob.core.windows.net/retailgrocery/

Back Cancel Transform data

6. Click the **[Binary]** link in the first cell of the first row for the **Grocery_contact.csv** file.

Power Query - Edit queries

Home Transform Add column View Help

Get data Options Manage parameters Advanced editor Query Manage columns Sort Transform Combine

Source[{Name = "retailgrocery"}][Data]

Queries [1]

retailgrocery

Content	Name	Extension	Date accessed	Date modified	Date created	Attributes	Folder Path
[Binary]	Grocery_contact.csv	.csv	null	2/25/2022, 4:47:21 ...	null	[Record]	https://re...
[Binary]	Grocery_msrc_session.csv	.csv	null	2/25/2022, 4:48:42 ...	null	[Record]	https://re...
[Binary]	Grocery_msrc_transaction.csv	.csv	null	2/25/2022, 4:49:15 ...	null	[Record]	https://re...

Query settings

Properties

Name: retailgrocery

Entity type: Custom

Applied steps

Source Navigation

Completed (2.19 s) Columns: 8 Rows: 3

Step Cancel Save

Power Query - Edit queries

Home Transform Add column View Help

Get data Options Manage parameters Refresh Advanced editor Properties Query Parameters Manage columns Choose columns Remove rows Keep rows Remove Filter rows Sort Reduce rows Group by Split column Data type: Text Use first row as headers Replace values Transform Combine

Queries [1]

retailgrocery

Query settings

- Properties
- Name: retailgrocery
- Entity type: Custom
- Applied steps

 - Source: Imported CSV
 - Navigation
 - Navigation 1

Completed (1.21 s) Columns: 10 Rows: 99+

Step Cancel Save

7. Go to the **Transform** ribbon and then select the **Use first row as headers** option

Power Query - Edit queries

Home **Transform** Add column View Help

Group by headers Reverse rows Count rows Use first row as headers Use headers as first row

Query settings

- Properties
- Name: retailgrocery
- Entity type: Custom
- Applied steps

 - Source: Imported CSV
 - Navigation
 - Navigation 1

Completed (1.21 s) Columns: 10 Rows: 99+

Step Cancel Save

8. Right click the **birthdate** column, go to **Change type**, and select **Date**.

Power Query - Edit queries

Home Transform Add column View Help

Queries [1] Table.PromoteHeaders(#"Imported CSV", [PromoteAllScalars = true])

Contact

Completed (1.87 s) Columns: 10 Rows: 99+

Query settings

- Properties
 - Name: retailgrocery
 - Entity type: Custom
- Applied steps
 - Source: Imported CSV
 - Navigation: Navigation 1
 - Imported CSV
 - Promoted headers

Save

- Select the following columns by holding down the **Ctrl key** on your keyboard: annualincome, msrc_creditscore, msrc_customerrelationshipduration, and msrc_distancetoneareststore. Once highlighted, right click one of them, go to **Change type**, and select **Decimal number**.

Power Query - Edit queries

Home Transform Add column View Help

Queries [1] Table.TransformColumnTypes(#"Promoted headers", {"birthdate", type date})

gactiv... annualincom... msrc_occupationstatus msrc_creditscore msrc_customerrelationshipdurati... msrc_distancetoneareststore

Completed (1.15 s) Columns: 10 Rows: 99+

Query settings

- Properties
 - Name: retailgrocery
 - Entity type: Custom
- Applied steps
 - Source: Imported CSV
 - Navigation: Navigation 1
 - Imported CSV
 - Transform column types
 - Promoted headers

Save

- Finally, under Properties on the right side, change the **Name** to "contact" and hit the **Enter** key on your keyboard. DO NOT CLICK SAVE.

Power Query - Edit queries

Home Transform Add column View Help

Queries [1] < fx Table.TransformColumnTypes(#"Promoted headers", {"birthdate", "type date"}, {"annualincome", "type number"},

Applied steps

- Source
- Navigation
- Navigation 1
- Imported CSV
- Promoted header
- Changed column

Completed (0.91 s) Columns: 10 Rows: 99+

Cancel Save

11. Right-click the contact query and select Duplicate.

Power Query - Edit queries

Home Transform Add column View Help

Queries [1] < fx Table.TransformColumnTypes(#"Promoted headers", {"birthdate", "type date"}, {"annualincome", "type number"},

Applied steps

- Source
- Navigation
- Navigation 1
- Imported CSV
- Promoted header
- Changed column

Completed (2.12 s) Columns: 10 Rows: 99+

Cancel Save

12. Right-click the duplicated query and rename it to "transactions".

Power Query - Edit queries

Home Transform Add column View Help

Queries [2]

contact transactions

Table

Completed (1.12 s) Columns: 10 Rows: 99+

Search (Alt + Q)

Transform ribbon:

- Transpose
- Reverse rows
- Count rows
- Data type: Text
- Rename
- Fill
- Pivot column
- Move
- Text column
- Number column
- Date and time column
- Any column

Applied steps (Query settings):

- Source
- Navigation
- Imported CSV
- Promoted headers
- Changed column

Query settings (Properties):

- Name: transactions
- Entity type: Custom

Applied steps (Query settings):

- Source
- Navigation

contactid	genderCode	birthdate	msrc_loyaltymembers...	msrc_agreementtomarketingactiv...	1.2.annual
3fa4725-d66b-436f-ac5-e653eb...	N/A	9/30/1958	False		
e11911b9-c88e-4d0b-9d89-10531...	Female	6/25/1954	False		
d0181a83-d6a4-4269-adef-2a9473...	Male	12/19/1960	True		
911174c-c123-4b2-9372-49be1...	Male	5/16/2000	False		
7c93fa8d-efee-4694-b78f-215673b...	Male	6/3/1953	True		
ddd136ef-13ce-40fc-876a-dd0614...	Female	9/18/1964	False		
a8008a8f-9463-4d95-a501-66b6b...	Female	5/26/1958	True		
729c54e1-1ab7-48ab-ab70-75605...	Male	1/29/1959	False		
bb4bdce3-7379-4420-8994-988d...	Male	6/10/1969	False		
ec8a5561-3bfa-4d17-84ec-15617...	Male	3/15/1984	False		
6591aa6-a64c-4b01-ad70-4f9051...	N/A	12/1/1999	False		
416d1604-36ea-4855-ae21-f534da...	Male	9/1/1994	False		
02f34a5-e161-4e2a-a1ce-3e33f4...	Female	1/6/1951	False		
a328a0f0-2ac8-43dc-b806-635907...	N/A	1/1/1992	True		
e5891f63-0451-4211-9ba2-0ca2b...	Male	1/19/1978	False		
b591a3a1-d533-43d2-958f-deb57...	Male	1/28/1970	False		
5ba48b97-0b71-474a-91ab-02cad...	Female	9/4/1958	True		
f870026e-4897-424b-9df2-765a10...	Male	7/20/1982	True		
4cc76f60-3751-4402-bd7a-46670...	Male	7/13/2001	False		

Buttons: Step, Cancel, Save

13. With the **transactions** query selected, delete all the **Applied steps** on the right up to the Navigation step.

Power Query - Edit queries

Home Transform Add column View Help

Queries [2]

contact transactions

Table

Completed (0.66 s) Columns: 8 Rows: 3

Search (Alt + Q)

Transform ribbon:

- Transpose
- Reverse rows
- Count rows
- Data type: Binary
- Rename
- Fill
- Pivot column
- Move
- Text column
- Split column
- Merge columns
- Format
- Extract
- Unpivot columns
- Convert to list
- Parse
- Number column
- Date and time column
- Any column

Applied steps (Query settings):

- Source
- Navigation

Query settings (Properties):

- Name: transactions
- Entity type: Custom

Applied steps (Query settings):

- Source
- Navigation

Content	Name	Extension	Date accessed	Date modified	Date created	Attributes	Link
[Binary]	Grocery_contact.csv	.csv	null	2/25/2022, 4:47:21 ...	null	[Record]	https://
[Binary]	Grocery_msrc_session.csv	.csv	null	2/25/2022, 4:48:42 ...	null	[Record]	https://
[Binary]	Grocery_msrc_transaction.csv	.csv	null	2/25/2022, 4:49:15 ...	null	[Record]	https://

Buttons: Step, Cancel, Save

14. Click the **[Binary]** link in the first cell of the third row for the **Grocery_msrc_transaction.csv** file.

Power Query - Edit queries

Home Transform Add column View Help

Queries [2]

contact transactions

Source ([Name = "retailgrocery"])[Data]

010 Content	Name	Extension	Date accessed	Date modified	Date created	Attributes	Text column
1 [Binary]	Grocery_contact.csv	.csv	null	2/25/2022, 4:47:21 ...	null	[Record]	https://r...
2 [Binary]	Grocery_msrc_session.csv	.csv	null	2/25/2022, 4:48:42 ...	null	[Record]	https://r...
3 [Binary]	Grocery_msrc_transaction.csv	.csv	null	2/25/2022, 4:49:15 ...	null	[Record]	https://r...

Table cell details

retailchurn.blob.core.windows.net
189,617,947 bytes

Completed (0.66 s) Columns: 8 Rows: 3

Query settings

- Properties
 - Name: transactions
 - Entity type: Custom
- Applied steps
 - Source
 - Navigation

Cancel Save

15. As before, go to **Transform** and select **Use first row as headers**.

Power Query - Edit queries

Home Transform Add column View Help

Queries [2]

contact transactions

Source ([Name = "retailgrocery"])[Data]

Column1	Column2	Column3	Column4	Column5	Column6	Column7
msrc_transactionid	msrc_customerid	msrc_transaction	msrc_productcatalogid	msrc_transactionlocationid	msrc_transacti...	msrc_transac...
2 ec57120-494a-46d7-9c07-9e71d1...	46212cb-178...	54910e32-70f4-451...	fa2f114-1445-46ea-bbcf-ab21c...	Physical	2021-06-1	
3 cb3db1b-8611-4a91-8500-4979a...	3fa4a725-d66...	7d67eed-b0b...	a1c673d1-5383-446...	3caff72-3c17-4e10-ac5c-d2dab...	Physical	2021-06-1
4 92800346-03b7-47da-bf22-3390f...	3fa4a725-d66...	fe48d624-439...	61bd9ff8-8ae8-4fb3...	41de6f45-746e-44cd-ab49-813...	Physical	2021-06-2
5 c49376bb-7d24-4ef0-a614-50129...	3fa4a725-d66...	a96de2b8-2ba...	6df0f586-543e-41e...	bc448ee-012c-45ed-8605-61b6...	Digital	2021-06-1
6 86cc6d4c-141b-412e-bd42-5232...	3fa4a725-d66...	cbaed62e-3efc...	f8ee83d5-db23-4115...	bc448ee-012c-45ed-8605-61b6...	Physical	2021-06-1
7 f97ddcf2-31b0-4384-8458-a3d74...	3fa4a725-d66...	69b2a83b-1c0b...	572ae238-df73-4368...	bc448ee-012c-45ed-8605-61b6...	Digital	2021-06-2
8 9ef92e23-8735-4069-9fda-cfa4b3...	3fa4a725-d66...	a90c6a6-069...	ed37132d-9a6a-4cc5...	41de6f45-746e-44cd-ab49-813...	Physical	2021-06-2
9 fb323b3f-3eec-4c85-870f-a23a7f5...	3fa4a725-d66...	4d2db506-6f7...	add7650e-4320-4cb5...	41de6f45-746e-44cd-ab49-813...	Physical	2021-06-1
10 2dde4be5-196e-4f6e-8265-4e6fb6...	3fa4a725-d66...	d7497c4d-911...	47e99aaa-1e60-4631...	41de6f45-746e-44cd-ab49-813...	Digital	2021-06-1
11 ccb27ef6-3140-4f84-b131-a7a95...	e1191b9-c88...	07687634-05...	d56974e-7571-45e...	fa2f114-1445-46ea-bbcf-ab21c...	Physical	2021-08-1
12 a9fcba4f-2ef8-4ae2-bd29-28b0664...	e1191b9-c88...	281446e-887...	d560e049-ed78-458...	bc448ee-012c-45ed-8605-61b6...	Physical	2021-08-0
13 e0588688-a776-4a9a-95d4-d904...	e1191b9-c88...	ef58e2de-be7...	d5e95956-8173-48a...	3caff72-3c17-4e10-ac5c-d2dab...	Digital	2021-08-0
14 1a9e0177-247d-44e6-883e-1760d...	e1191b9-c88...	b391841-1e3...	b750e5e-455-4fb6...	41de6f45-746e-44cd-ab49-813...	Digital	2021-08-1
15 3fac58ff-415d-4ef5-9114-349016d...	e1191b9-c88...	18a90081-d9c...	50054239-424e-468...	3caff72-3c17-4e10-ac5c-d2dab...	Digital	2021-08-0
16 abf86df0-e0e4-4d01-a68b-0b7f75...	e1191b9-c88...	36f0e835-1a3...	c224df1-b1e2-490...	41de6f45-746e-44cd-ab49-813...	Physical	2021-08-0
17 99c52044-98bb-407a-99d1-bc357...	e1191b9-c88...	3e78f76a-470...	fc83a2b-250b-4f77...	fa2f114-1445-46ea-bbcf-ab21c...	Physical	2021-08-0
18 deacc7-a6f0-4c2e-a556-2288ff7...	e1191b9-c88...	af047cc4-8ee8...	63fd9892-6dcf-4bae...	3caff72-3c17-4e10-ac5c-d2dab...	Physical	2021-08-0
19 2077a7a-4333-4a20-9020-20202...	e1191b9-c88...	02020202-4333...	2077a7a-4333-4a20...	3caff72-3c17-4e10-ac5c-d2dab...	Digital	2021-08-0

Completed (1.32 s) Columns: 13 Rows: 99+

Query settings

- Properties
 - Name: transactions
 - Entity type: Custom
- Applied steps
 - Source
 - Navigation
 - Navigation 1
 - Imported CSV

Step Cancel Save

16. Scroll over to and select the **msrc_transactiontimestamp** column. Right-click and **Change type** to **Date/Time**.

Power Query - Edit queries

Home Transform Add column View Help

Queries [2]

contact transactions

Table

Search (Alt + Q)

Queries [2]

fx Table.PromoteHeaders("#Imported CSV", [PromoteAllScalars = true])

msrc_transactionchannelid msrc_paymenttype

1 45-4eaa-bbcf-ab21ca76... Physical 2021-06-17 1 Remove columns

2 17-4e10-ac5c-d2da862... Physical 2021-06-16 1 Remove other columns

3 46e-44cd-ab49-813234... Physical 2021-06-21 1 Duplicate column

4 12c-45ed-8605-61b648... Digital 2021-06-14 1 Add column from examples...

5 12c-45ed-8605-61b648... Physical 2021-06-14 1 Remove duplicates

6 12c-45ed-8605-61b648... Digital 2021-06-21 1 Remove errors

7 46e-44cd-ab49-813234... Physical 2021-06-24 1 Split column

8 46e-44cd-ab49-813234... Digital 2021-06-12 1 Replace values...

9 46e-44cd-ab49-813234... Physical 2021-06-17 1 Replace errors...

10 45-4eaa-bbcf-ab21ca76... Physical 2021-08-09 1 Change type

11 12c-45ed-8605-61b648... Physical 2021-08-07 1 Transform column

12 17-4e10-ac5c-d2da862... Digital 2021-08-16 1 Group by...

13 46e-44cd-ab49-813234... Digital 2021-08-08 1 Fill

14 17-4e10-ac5c-d2da862... Digital 2021-08-04 1 Unpivot columns

15 46e-44cd-ab49-813234... Physical 2021-08-05 1 Unpivot other columns

16 45-4eaa-bbcf-ab21ca76... Physical 2021-08-04 1 Unpivot only selected columns

17 17-4e10-ac5c-d2da862... Physical 2021-08-06 1 Rename...

18 12c-45ed-8605-61b648... Physical 2021-08-06 1 Move

19 12c-45ed-8605-61b648... Physical 2021-08-06 1 Drill down

Columns: 13 Rows: 99+

Query settings

Properties

Name: transactions

Entity type: Custom

Applied steps

- Source
- Navigation
- Navigation 1
- Imported CSV
- Promoted headers

Step Cancel Save

17. Press and hold the **Ctrl key** on your keyboard to select both the **msrc_transactionamount** and **msrc_discountappliedamount** columns. Right-click one of the columns, go to **Change type**, and select **Decimal number**.

Power Query - Edit queries

Home Transform Add column View Help

Queries [2]

contact transactions

Table

Search (Alt + Q)

Queries [2]

fx Table.TransformColumnTypes("#Promoted headers", {{"msrc_transactiontimestamp", type datetime}})

msrc_transactiontype msrc_paymenttype

1 Purchase Debit 7.65191521704 1 Remove columns

2 Purchase Credit card 2.36376972921 1 Remove other columns

3 Purchase Debit 1.32317547803 1 Duplicate column

4 Exchange Cash 12.8621677662 1 Add column from examples...

5 Exchange Refund 3.9241339962 1 Remove duplicates

6 Exchange Debit 3.97631052497 1 Remove errors

7 Return Mobile/digital/cashless 10.2921444506 1 Group by...

8 Purchase Debit 8.18536285486 1 Replace values...

9 Purchase Credit card 14.8679018813 1 Replace errors...

10 Purchase Credit card 0.36350651229 1 Merge columns

11 Purchase Refund 11.1441705331 1 Change type

12 Return Debit 0.19060037964 1 Transform columns

13 Purchase Credit card 0.97101203316 1 Unpivot columns

14 Return Debit 7.92340284881 1 Unpivot other columns

15 Purchase Cash 1.79664751096 1 Unpivot only selected columns

16 Purchase Gift card 8.84766166101 1 Move

17 Purchase Cash 10.6220733003 1

18 Purchase Debit 11.8558254513 1

Completed (3.11 s) Columns: 13 Rows: 99+

Query settings

Properties

Name: transactions

Entity type: Custom

Applied steps

- Source
- Navigation
- Navigation 1
- Imported CSV
- Promoted headers
- Changed column types

Step Cancel Save

18. Right-click the **transactions** query and select **duplicate**.

Power Query - Edit queries

Home Transform Add column View Help

Queries [2]

msrc_transactions

Purchase	Type	Amount	Timestamp	Status	Delayed
Debit	Credit card	2.363769729	1.323792212	Delayed	True
Debit	Cash	1.323175478	0	Delayed	True
Refund	Cash	12.86216777	0	Delayed	True
Debit	Refund	3.924133996	0	Delayed	True
Debit	Debit	3.976310525	1.068660005	Delayed	True
Mobile/digital/cashless	Debit	10.29214445	2.150837185	Delayed	True
Debit	Credit card	8.185362855	0	On-time	True
Debit	Credit card	14.86790188	0	Delayed	True
Refund	Credit card	0.3635065123	0	Delayed	True
Debit	Refund	11.14417053	2.060410405	Delayed	True
Debit	Credit card	0.1906003796	0.03987881907	Delayed	True
Credit card	Debit	0.9710120332	0	Delayed	True
Debit	Credit card	7.923402849	2.103243773	Delayed	True
Cash	Cash	1.796647511	0.4314152398	Delayed	True
Cash	Gift card	8.847661661	2.986940906	Delayed	True
Cash	Cash	10.6220733	3.548649445	Delayed	True
Debit	Debit	11.83582545	0	Delayed	True

Completed (2.90 s) Columns: 13 Rows: 99+

Query settings

- Properties
 - Name: transactions
 - Entity type: Custom
- Applied steps
 - Source
 - Navigation
 - Navigation 1
 - Imported CSV
 - Promoted headers
 - Changed column types

Step Save Cancel

19. Rename the query to “**session**” and delete all the **Applied steps** up to **Navigation** like you did before.

Power Query - Edit queries

Home Transform Add column View Help

Queries [3]

session

Content	Name	Extension	Date accessed	Date modified	Date created	Attributes	Link
[Binary]	Grocery_contact.csv	.csv	null	2/25/2022, 4:47:21 ...	null	[Record]	https://r...
[Binary]	Grocery_msrc_session.csv	.csv	null	2/25/2022, 4:48:42 ...	null	[Record]	https://r...
[Binary]	Grocery_msrc_transaction.csv	.csv	null	2/25/2022, 4:49:15 ...	null	[Record]	https://r...

Completed (0.69 s) Columns: 8 Rows: 3

Query settings

- Properties
 - Name: session
 - Entity type: Custom
- Applied steps
 - Source
 - Navigation

Step Save Cancel

20. Click the **[Binary]** link in the first cell of the second row for the **Grocery_msrc_session.csv** file.

Power Query - Edit queries

Home Transform Add column View Help

Queries [3]

- contact
- transactions
- session

Source{[Name = "retailgrocery"]}[Data]

010 101 Content	Name	Extension	Date accessed	Date modified	Date created	Attributes
1 [Binary]	Grocery_contact.csv	.csv	null	2/25/2022, 4:47:21 ...	null	[Record]
2 [Binary]	Grocery_msrc_session.csv	.csv	null	2/25/2022, 4:48:42 ...	null	[Record]
3 [Binary]	Grocery_msrc_transaction.csv	.csv	null	2/25/2022, 4:49:15 ...	null	[Record]

Table cell details

retailchurn.blob.core.windows.net
105,432,560 bytes

Completed (0.69 s) Columns: 8 Rows: 3

Query settings

- Properties
 - Name session
- Entity type Custom
- Applied steps
 - Source
 - Navigation

Step Cancel Save

21. Go to **Transform** and select **Use first row as headers**.

Power Query - Edit queries

Home Transform Add column View Help

Queries [3]

- contact
- transactions
- session

Use first row as headers

Promote the first row of data in the table to column headers.

Column1	Column2	Column3	Column4	Column5	Column6
msrc_sessionid	msrc_customerid	msrc_sessiontimestamp	msrc_visittype	msrc_sessionchannel	msrc_sessionduration
1 462f12b-178d-4345-b179-e3669...	3fa4a725-066b-436f-ac5-e653e...	2021-06-17 08:45:00	Physical	Brick and mortar	41.92540261984776 F
2 7df57cc0-b087-4f77-b29a-9ca2e10...	3fa4a725-066b-436f-ac5-e653e...	2021-06-16 08:54:00	Physical	Brick and mortar	42.14446939764739 F
3 fe48d624-439e-4c45-a519-982065...	3fa4a725-066b-436f-ac5-e653e...	2021-06-21 08:34:00	Physical	Brick and mortar	44.42984551415812 F
4 a96de2b0-2ba0-4004-a9b8-b6e7fd...	3fa4a725-066b-436f-ac5-e653e...	2021-06-14 06:31:00	Digital	Instagram	43.09570606721701 F
5 bced62e-3efc-46fd-97b8-b2ead21...	3fa4a725-066b-436f-ac5-e653e...	2021-06-14 03:08:00	Physical	Brick and mortar	43.82838526581899 F
6 e992a8bc-1d55-4bee-9b1e-73572...	3fa4a725-066b-436f-ac5-e653e...	2021-06-21 11:55:00	Digital	App	43.87030969219855 F
7 a90bc6a6-0699-4976-8a49-4904d...	3fa4a725-066b-436f-ac5-e653e...	2021-06-24 11:30:00	Physical	Brick and mortar	42.845305292074... F
8 4d2db506-6773-4ce8-9d9d-3458a...	3fa4a725-066b-436f-ac5-e653e...	2021-06-12 14:05:00	Digital	Chat	44.71716663151871 F
9 d7497c46-911e-43f6-838d-02057...	3fa4a725-066b-436f-ac5-e653e...	2021-06-17 07:32:00	Physical	Brick and mortar	43.62810153891612 F
10 07687634-050a-4000-be2d-0e66...	e11911b9-c88e-4d0b-9d89-10531...	2021-08-13 18:10:00	Physical	Brick and mortar	41.92973041259731 F
11 281f466e-8f87-4c25-b2c9-27f74...	e11911b9-c88e-4d0b-9d89-10531...	2021-08-09 07:11:00	Physical	Brick and mortar	42.6646738231925... F
12 ef50e2de-be7f-4f5b-b8b3-b512fc...	e11911b9-c88e-4d0b-9d89-10531...	2021-08-07 11:45:00	Digital	App	40.382452266548... F
13 b39d1841-1e34-4c9a-92f2-fd9ad...	e11911b9-c88e-4d0b-9d89-10531...	2021-08-16 19:35:00	Digital	Website	43.6749475691305... F
14 18a9081a-d9cd-4fc8-9832-55494...	e11911b9-c88e-4d0b-9d89-10531...	2021-08-08 07:17:00	Digital	Website	43.41405259018818 F
15 36f0e635-1a35-4b4d-9ada-e1a901...	e11911b9-c88e-4d0b-9d89-10531...	2021-08-04 12:00:00	Physical	Brick and mortar	43.2046129392539... F
16 3e78f76a-a705-44d4-a3fd-01b82f...	e11911b9-c88e-4d0b-9d89-10531...	2021-08-05 10:17:00	Physical	Brick and mortar	44.18332832360634 F
17 a047cc4-8ee8-4d56-82c0-1205c...	e11911b9-c88e-4d0b-9d89-10531...	2021-08-04 07:03:00	Physical	Brick and mortar	41.8584999687191 F
18					
19					

Completed (1.55 s) Columns: 9 Rows: 99+

Query settings

- Properties
 - Name session
- Entity type Custom
- Applied steps
 - Source
 - Navigation
 - Imported CSV

Step Cancel Save

22. Right-click **msrc_sessiontimestamp**, go to **Change type** and select **Date/Time**.

Power Query - Edit queries

Home Transform Add column View Help

Queries [3]

- contact
- transactions
- session

Table

fx Table.PromoteHeaders(#"Imported CSV", [PromoteAllScalars = true])

msrc_sessionid	msrc_customermid	msrc_sessionchannel
462f12cb-178d-4345-b179-3e369...	3fa4a725-d66b-436f-ac5-e653ebc...	Brick and mortar
7df87eed-b087-4ff7-b29a-9ca2e10...	3fa4a725-d66b-436f-ac5-e653ebc...	Brick and mortar
fe48d624-439e-4d45-a519-982065...	3fa4a725-d66b-436f-ac5-e653ebc...	Instagram
a96de2b8-2ba0-4004-a9b8-b6e7fd...	3fa4a725-d66b-436f-ac5-e653ebc...	Brick and mortar
cbaed62e-3efc-46f0-97b5-b2ead21...	3fa4a725-d66b-436f-ac5-e653ebc...	Brick and mortar
69b2a8bc-1e85-4be9-9b1e-73572...	3fa4a725-d66b-436f-ac5-e653ebc...	App
a90bc6a6-0699-4976-8a49-9404d...	3fa4a725-d66b-436f-ac5-e653ebc...	Brick and mortar
4d2db506-6773-4c8b-9d9d-3458a...	3fa4a725-d66b-436f-ac5-e653ebc...	Brick and mortar
d7497c46-911e-43f6-83d8-02057...	3fa4a725-d66b-436f-ac5-e653ebc...	Brick and mortar
07687634-050a-4000-be2d-0ee6b...	e11911b9-c88e-4d0b-9d89-10531...	2021-06-13 18:23:45
281f466e-88f7-4c25-b2cb-27fa74c...	e11911b9-c88e-4d0b-9d89-10531...	2021-06-09 07:43:45
f5f62e2e-be7f-4f3b-bb3-b512fc9...	e11911b9-c88e-4d0b-9d89-10531...	2021-06-07 11:43:45
b39d1841-1e34-4c9a-92f2-fcd9ad...	e11911b9-c88e-4d0b-9d89-10531...	2021-06-16 15:43:45
18a9081a-d9cd-4f68-9832-5549f...	e11911b9-c88e-4d0b-9d89-10531...	2021-06-08 01:43:45
36f0e835-1a35-4bd4-9ada-1a907...	e11911b9-c88e-4d0b-9d89-10531...	2021-06-04 11:43:45
3e78f76a-a705-4ad4-a3fd-01b62f1...	e11911b9-c88e-4d0b-9d89-10531...	2021-06-05 11:43:45
a047c0c4-6ee8-4d56-82c0-12058...	e11911b9-c88e-4d0b-9d89-10531...	2021-06-01 20:43:45
0295eda-aab4-41ed-aa02-5dd2a...	e11911b9-c88e-4d0b-9d89-10531...	2021-06-04 04:43:45
7f6cc03e-7e34-42c3-8607-7607d...	e11911b9-c88e-4d0b-9d89-10531...	2021-06-05 11:43:45

Completed (2.09 s) Columns: 9 Rows: 99+

Query settings

- Properties
 - Name: session
 - Entity type: Custom
- Applied steps
 - Source
 - Navigation
 - Navigation 1
 - Imported CSV
 - Promoted headers
 - Changed column types

Step Cancel Save

23. Right-click the **msrc_sessionduration** column, go to **Change type**, and select **Decimal number**.

Power Query - Edit queries

Home Transform Add column View Help

Queries [3]

- contact
- transactions
- session

Table

fx Table.TransformColumnTypes(#"Promote headers", {"msrc_sessionduration", type datetime})

msrc_sessionchannel	msrc_sessionduration	msrc_sessioncustomersatisfaction	msrc_sessionprofilelogin
Brick and mortar	41.92540261984776	False	False
Brick and mortar	42.14446939764739	False	False
Brick and mortar	44.42984551415812	False	False
Instagram	43.99570606721701	False	False
Brick and mortar	43.82838526581899	False	False
App	43.87030969219853	False	False
Brick and mortar	42.645305292074464	False	False
Chat	44.71716663151871	False	False
Brick and mortar	43.62810153891612	False	False
Brick and mortar	41.92973041259731	False	False
Brick and mortar	42.664673823192565	False	False
App	40.38245266548846	False	False
Website	43.674947569130566	False	False
Website	43.41405259018818	False	False
Brick and mortar	43.204612939253934	False	False
Brick and mortar	44.1832832360634	False	False
Brick and mortar	41.858499667191	False	False
Brick and mortar	41.68512136188344	False	False

Completed (6.06 s) Columns: 9 Rows: 99+

Query settings

- Properties
 - Name: session
 - Entity type: Custom
- Applied steps
 - Source
 - Navigation
 - Navigation 1
 - Imported CSV
 - Promoted headers
 - Changed column types

Step Cancel Save

24. Finally, right-click the **msrc_sessioncustomersatisfaction** column, go to **Change type**, and select **Whole number**.

Power Query - Edit queries

Home Transform Add column View Help

Queries [3] < Save

Applied steps

- Source
- Navigation
- Navigation 1
- Imported CSV
- Promoted headers
- Changed column

Completed (2.20 s) Columns: 9 Rows: 99+

msrc_sessionchannel	msrc_sessionduration	msrc_sessionpurpose	msrc_sessionprofilelogin
kk and mortar	41.92540262	Purchase	1 False
kk and mortar	42.1444694	Purchase	1 False
kk and mortar	44.42984551	Purchase	1 False
tagram	43.09570607	Purchase	1 False
kk and mortar	43.82838527	Purchase	1 False
>	43.87030969	Purchase	1 False
kk and mortar	42.84530529	Purchase	1 False
at	44.71716663	Purchase	1 False
kk and mortar	43.62810154	Purchase	1 False
kk and mortar	41.92973041	Purchase	1 False
kk and mortar	42.66467382	Purchase	1 False
>	40.38245227	Purchase	1 False
bsite	43.67494757	Purchase	1 False
bsite	43.41405259	Purchase	1 False
kk and mortar	43.20461294	Purchase	1 False
kk and mortar	44.18332832	Purchase	1 False
kk and mortar	41.85849997	Purchase	1 False
kk and mortar	41.68512133	Purchase	1 False
kk and mortar	41.68512133	Purchase	1 False

25. Click **Save** and monitor the Data source as it refreshes. This step should take a few minutes.

Power Query - Edit queries

Home Transform Add column View Help

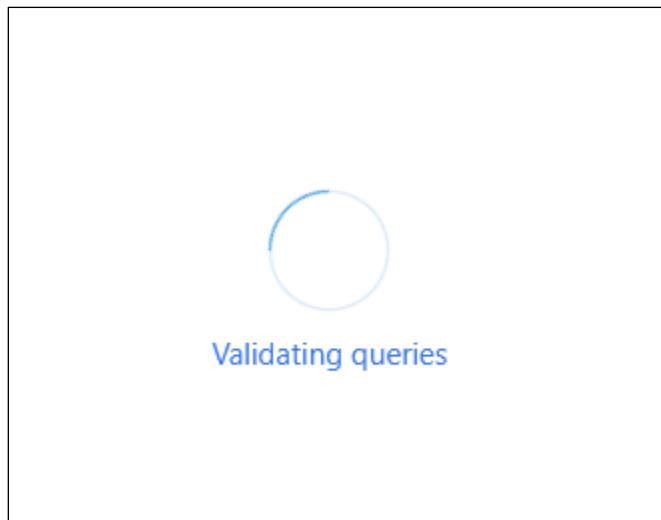
Queries [3] < Save

Applied steps

- Source
- Navigation
- Navigation 1
- Imported CSV
- Promoted headers
- Changed column

Completed (1.63 s) Columns: 9 Rows: 99+

msrc_sessionchannel	msrc_sessionduration	msrc_sessionpurpose	msrc_sessionsatisfaction	msrc_sessionprofilelogin
kk and mortar	41.92540262	Purchase	1 False	
kk and mortar	42.1444694	Purchase	1 False	
kk and mortar	44.42984551	Purchase	1 False	
tagram	43.09570607	Purchase	1 False	
kk and mortar	43.82838527	Purchase	1 False	
>	43.87030969	Purchase	1 False	
kk and mortar	42.84530529	Purchase	1 False	
at	44.71716663	Purchase	1 False	
kk and mortar	43.62810154	Purchase	1 False	
kk and mortar	41.92973041	Purchase	1 False	
kk and mortar	42.66467382	Purchase	1 False	
>	40.38245227	Purchase	1 False	
bsite	43.67494757	Purchase	1 False	
bsite	43.41405259	Purchase	1 False	
kk and mortar	43.20461294	Purchase	1 False	
kk and mortar	44.18332832	Purchase	1 False	
kk and mortar	41.85849997	Purchase	1 False	
kk and mortar	41.68512133	Purchase	1 False	
kk and mortar	41.68512133	Purchase	1 False	



Task 2: Unify Your Data

1. In Customer Insights, expand **Data** and go to **Unify**. Under **Map**, click **+ Select entities**.

Audience insig... Primary target audience Individual consumers

Home Customers Segments Measures Intelligence Data Data sources Entities

Unify Enrichment Activities Relationships

Map Match Merge

Define customer data in your entities
At least 2 entities are required to configure and generate Customer Profiles, prior to setting up Segments, Measures and Activities.

+ Select entities

2. Select all **three** entities and click **Apply**.

Save Discard changes

Primary target audience Individual consumers

Home Customers Segments Measures Intelligence Data Data sources Entities

Unify Enrichment Activities Relationships Exports

Map Match Merge

Define customer data in your entities
At least 2 entities are required to configure and generate Customer Profiles, prior to setting up Segments, Measures and Activities.

+ Select entities

Edit fields

Select which fields to include in your unified customer entity.

Search

session (RetailGroceryChurn2)
contact (RetailGroceryChurn2)
transactions (RetailGroceryChurn2)

Apply Cancel

3. Select the **contact** entity, then select **contactid** as the primary key.

Unify

Map Match Merge

To unify customer data, define the fields found in your datasets.

Imported data	Fields
Entities ↑ RetailGroceryChurn2 contact	Select the primary key contactid
RetailGroceryChurn2 Session	Review mapped fields Column ↑ Type birthdate Person.BirthDate contactid ID genderCode Person.Gender msrc_creditscore Identity.Service.Phone
RetailGroceryChurn2 transactions	

Intelligent mapping What's this?

4. Select the **session** entity, then select **msrc_sessionid** as the primary key.

Unify

Map Match Merge

To unify customer data, define the fields found in your datasets.

Imported data	Fields	Intelligent mapping What's this?
Entities ↑	Select the primary key	<input checked="" type="checkbox"/>
RetailGroceryChurn2 contact	msrc_sessionid	What's this?
RetailGroceryChurn2 session	Review mapped fields	
RetailGroceryChurn2 transactions	Column ↑ Type	
	msrc_customerid Calendar.Date	
	msrc_sessionid ID	
	Define the data in the unmapped fields	
	Column ↑ Type	

5. Select the **transactions** entity, then select **msrc_transactionid** as the primary key. Click **Save**.

Save Discard changes Search

Unify

Map Match Merge

To unify customer data, define the fields found in your datasets.

Imported data	Fields	Intelligent mapping What's this?
Entities ↑	Select the primary key	<input checked="" type="checkbox"/>
RetailGroceryChurn2 contact	msrc_transactionid	What's this?
RetailGroceryChurn2 session	Review mapped fields	
RetailGroceryChurn2 transactions	Column ↑ Type	
	msrc_customerid ID	
	msrc_productcatalogid ID	
	msrc_transactionid ID	
	msrc_transactionlocationid ID	
	msrc_transactionsessionid ID	

6. While still under Unify, click **Match**, and then click **+ Set order**.

Unify

Map Match Merge

Define your rules for the matching and deduplication process that will consolidate source records into unique customer profiles.

Matched records details + Add entity Custom



Set the order of entities to match + Set order

7. In the pop-out, click + Add at the bottom to add a third entity.

Edit

Add, reorder, remove entities, and select if each should include all records. Entities can't be removed if they have been merged.

Rule conditions that have conflicts as a result of the change will be removed.

Entity order	Entity name	Move up/down	Include all
Primary	Select entity	▼	<input type="checkbox"/>
2	Select entity	^	<input type="checkbox"/>

+ Add Done Cancel

8. Select the entities in the following order: **contact, transactions, session**. Ensure **Include all** is checked for all entities and click **Done**.

Edit

Add, reorder, remove entities, and select if each should include all records. Entities can't be removed if they have been merged.

Rule conditions that have conflicts as a result of the change will be removed.

Entity order	Entity name	Move up/down	Include all
Primary ⓘ	contact : RetailGroc ...	▼	<input checked="" type="checkbox"/>
2	transactions : Retail ...	^ ▼	<input checked="" type="checkbox"/>
3	session : RetailGroc ...	^	<input checked="" type="checkbox"/>

Done **Cancel**

9. Click **+ Add rule** next to the **transactions** entity.

Unify

Map Match Merge

Define your rules for the matching and deduplication process that will consolidate source records into unique customer profiles.

Unique source records	Matched and non-matched records	Matched records only
--	--	--
How does deduplication work?	How are links determined?	What happens to excluded records?

Matched records details

Order	Name	Source records	Unique records	Records matched	Include all records
1	RetailGroceryChurn2 : contact	0	0		<input checked="" type="checkbox"/>
2	RetailGroceryChurn2 : transacti... NEEDS RULES	0	0		<input checked="" type="checkbox"/>
3	RetailGroceryChurn2 : sessi... NEEDS RULES	0	0		<input checked="" type="checkbox"/>

+ Add entity **Custom** **Edit**

10. Select **contactid** and **msrc_customerid**, then name the rule "contacttransactions". Click **Done**.

Create rule

Make a rule for how to handle duplicate data by setting conditions that compare fields from differing entities. [Learn more](#)

Conditions

Condition 1

Select entity * contact : RetailGroceryChurn2

Select field * contactid

Entity transactions : RetailGroceryChurn2

Select field * msrc_customerid

Precision

Basic

Exact

Name *

contacttransactions

+ Add Done Cancel

11. Scroll down and click + Add rule next to the session entity.

Matched records details					
Order	Name	Source records	Unique records	Records matched	Include all records
1	RetailGroceryChurn2 : contact	0	0	✓	
2	RetailGroceryChurn2 : transactions	0	0	✓	
1	contacttransactions				
	+ Add rule				
3	RetailGroceryChurn2 : sessi... NEEDS RULES	0	0	✓	
	+ Add rule				

12. Choose the **transactions** entity and then select the **msrc_transactionsessionid** and **msrc_sessionid** fields. Name the rule “transactionssession” and click **Done**.

Edit “transactionssession”

X

Make a rule for how to handle duplicate data by setting conditions that compare fields from differing entities. [Learn more](#)

Conditions

Condition 1

Select entity *

transactions : RetailChurnModel

Select field *

msrc_transactionsessionid

Entity

sessions : RetailChurnModel

Select field *

msrc_sessionid

Precision

Basic

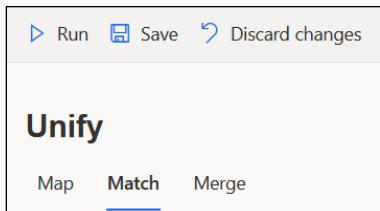
Exact

+ Add ▾

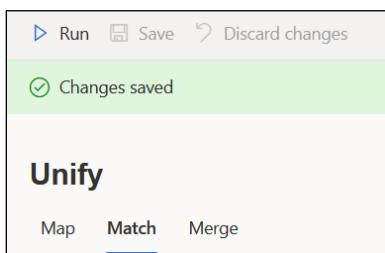
Done

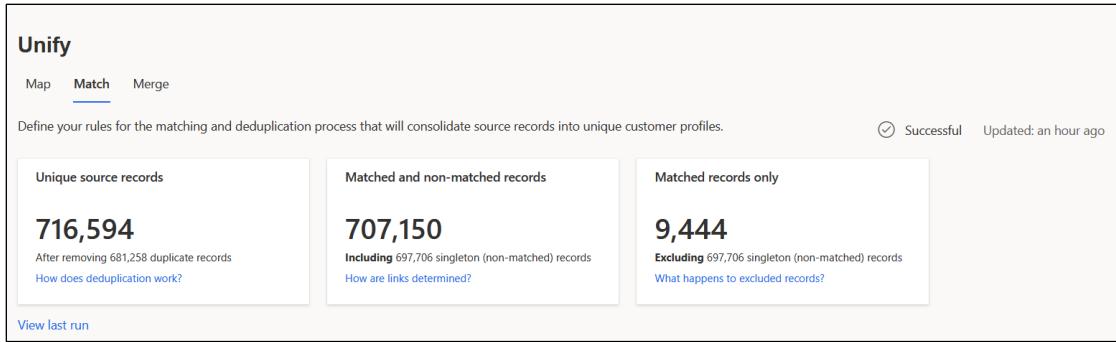
Cancel

13. Click **Save**.

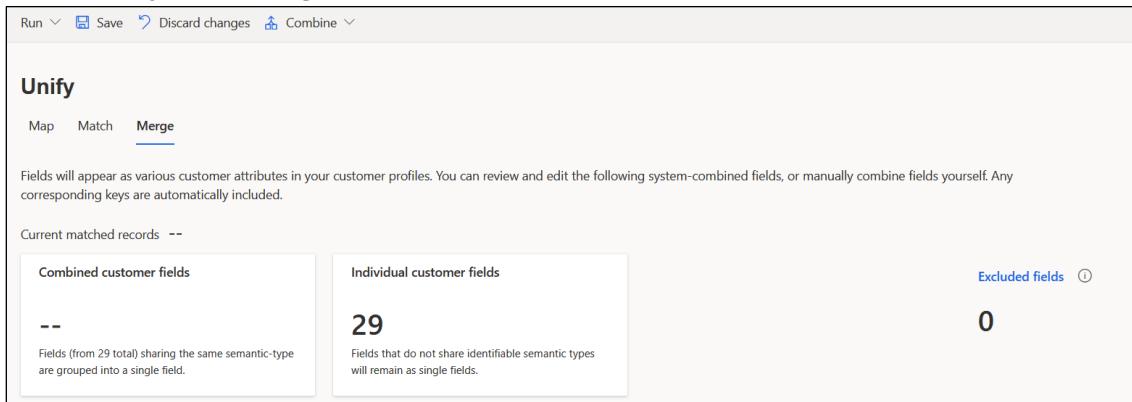


14. Click **Run**. This step will take several minutes to complete. Once it is done, we will then merge the data.

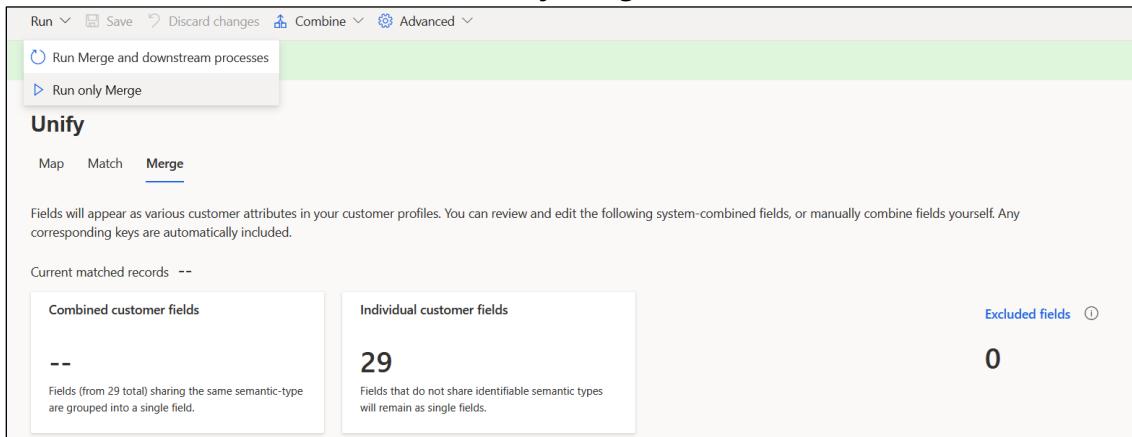




15. Under **Unify**, click **Merge** and then click **Save**.



16. Once saved, click **Run** and select **Run only Merge**. This will take several minutes to complete.



Congratulations! The model should be visible and ready to train, follow the next steps to train the model.

Task 3: Train the model

1. Navigate to **Predictions** on the left menu, select Create and then click the **Retail channel churn (preview) Use model** button.

The screenshot shows the Microsoft Audience Insights interface. On the left, there's a sidebar with various navigation options like Home, Customers, Segments, Measures, Intelligence, Predictions, Data, Reports (Preview), and Admin. The 'Intelligence' section is currently selected. In the main area, there's a heading 'Intelligence' and two cards: 'Customer churn model (preview)' and 'Retail channel churn (preview)'. The 'Retail channel churn (preview)' card has a red box around its 'Use model' button.

2. When the pane pops out, click the **Get started** button.

This screenshot shows the same interface as above, but with a modal dialog box overlaid. The dialog is titled 'Retail channel churn (preview)' and contains information about the model, such as 'Identify customers most likely to stop making purchases through digital or brick & mortar channel by examining their profiles and transaction history.' It also lists 'You'll need the following data' for 'Customer' and 'Transaction', each with three required fields. At the bottom right of the dialog, there are 'Get started' and 'Close' buttons.

3. Name the model and output entity "RetailChurnModel".

Predictions > Retail channel churn (preview)

Model name

Preferences

Required data

Additional data (optional)

Data updates

Review and run

Model name
Select the names for your model

Name

Output entity name ⓘ

Next

4. Adjust the Model preferences as needed and click **Next**.

Model name

Preferences

Required data

Additional data (optional)

Data updates

Review and run

Model preferences
Identify customers most likely to stop making purchases in the digital channel or brick & mortar channel by examining their profiles and transaction history.

Prediction period
Days to look into the future to predict churn:

Transaction volume decline threshold
Proportional threshold for the decline in the number of transactions for a customer to be determined as churned (0.1 means that the transaction volume drops to 10%)

Transaction value decline threshold
Proportional threshold for the decline in the value of transactions for a customer to be determined as churned (0.1 means that the value of transactions drops to 10%)

Back **Next** **Save draft** **Cancel**

5. Click on the **+ Add data** button below the Customer session on the middle pane. It will open a right pane to let you add the required customer data from the customer entity. Click **Save** when done to return to the middle pane.

Predictions > Retail channel churn (preview)

Required data

Customer
The model examines your customer entity along with any supporting data added in the next step to estimate churn over a given period of time.

Transaction
This model examines the transaction history of the customers to estimate churn over a given period of time.

Back **Next** **Save draft** **Cancel**

Add customer data

Step 1 of 1: Map your field names

Loyalty membership
System.Customer.msrc_loyaltymembership

Occupation status
System.Customer.msrc_occupationstatus

Birth date
System.Customer.birthdate

Gender code
System.Customer.genderCode

Annual income
System.Customer.annualincome

Relationship duration
System.Customer.msrc_customerrelationshipduration

Distance to nearest store
System.Customer.msrc_distancetoneareststore

Save **Cancel**

6. Repeat the process with the Transaction data by clicking the second **+ Add data** button below the Transaction section on the middle pane. Fill out the transaction entity information on the right pane and click on **Save**. Click **Next** on the middle pane.

Add customer data

Step 1 of 1: Map your field names

Transaction entity *

transactions : RetailGroceryChurn2

Map these required attributes to the corresponding labels in your data.

Transaction ID *

RetailGroceryChurn2.transactions.msrc_transactionid

Customer ID *

RetailGroceryChurn2.transactions.msrc_customerid

Transaction timestamp *

RetailGroceryChurn2.transactions.msrc_transactiontimestamp

Transaction session ID

RetailGroceryChurn2.transactions.msrc_transactionsessionid

Transaction type

RetailGroceryChurn2.transactions.msrc_transactiontype

Transaction channel type

Save Cancel

The screenshot shows a 'Map your field names' step for adding customer data. It lists several transaction attributes and their corresponding database fields. The 'Transaction entity' is set to 'transactions : RetailGroceryChurn2'. The 'Transaction ID' is mapped to 'RetailGroceryChurn2.transactions.msrc_transactionid'. The 'Customer ID' is mapped to 'RetailGroceryChurn2.transactions.msrc_customerid'. The 'Transaction timestamp' is mapped to 'RetailGroceryChurn2.transactions.msrc_transactiontimestamp'. The 'Transaction session ID' is mapped to 'RetailGroceryChurn2.transactions.msrc_transactionsessionid'. The 'Transaction type' is mapped to 'RetailGroceryChurn2.transactions.msrc_transactiontype'. The 'Transaction channel type' field is empty. At the bottom are 'Save' and 'Cancel' buttons.

7. Once both required data entities are complete, click **Next** to go to Additional data.

Predictions > Retail channel churn (preview)

To add an activity, there must be an available entity with date/time based fields. Go to data sources

Required data

Customer

The model examines your customer entity along with any supporting data added in the next step to estimate churn over a given period of time.

Entity ↑	Attributes	Status
Customer : CustomerInsights	10	Complete

Transaction

This model examines the transaction history of the customers to estimate churn over a given period of time.

Entity ↑	Attributes	Status
transactions : RetailGroceryChurn2	13	Complete

Back **Next** **Save draft** **Cancel**

8. Click + **Add data** to enter the Session information, **save** it and click **Next**.

Predictions > Retail channel churn (preview)

To add an activity, there must be an available entity with date/time based fields. Go to data sources

Additional data (optional)

Add additional data to help the model predict which customers are most likely to churn.

Session

This model examines the sessions history of the customers to estimate churn.

+ Add

Add customer data

Step 1 of 1: Map your field names

Session entity *

session : RetailGroceryChurn2

Map these required attributes to the corresponding labels in your data.

Session ID *

RetailGroceryChurn2.session.msrc_sessionid

Customer ID *

RetailGroceryChurn2.session.msrc_customerid

Session timestamp *

RetailGroceryChurn2.session.msrc_sessiontimestamp

Session visit type

RetailGroceryChurn2.session.msrc_visittype

Session channel

RetailGroceryChurn2.session.msrc_sessionchannel

Session purpose

Save **Cancel**

Back **Next**

Predictions > Retail channel churn (preview)

To add an activity, there must be an available entity with date/time based fields. Go to data sources

Model name
 Preferences
 Required data
 Additional data (optional)
 Data updates
 Review and run

Additional data (optional)
Add additional data to help the model predict which customers are at a higher risk of churn.

Session
This model examines the sessions history of the customers to estimate churn over a given time period.

Entity ↑	Attributes	Status
session : RetailGroceryChurn2	9	Complete

Back **Next** Save draft Cancel

9. Set the data update schedule as **Weekly** and click **Next**.

Predictions > Retail channel churn (preview)

Model name
 Preferences
 Required data
 Additional data (optional)
 Data updates
 Review and run

Data update schedule
Periodically importing new data to your model helps it spot new patterns and make smarter, more informed suggestions.
[Show example](#)

Automatically import updated data:
 Weekly
 Monthly

Back **Next** Save draft Cancel

10. Confirm everything looks correct and click **Save and Run**.

Predictions > Retail channel churn (preview)

- Model name
- Preferences
- Required data
- Additional data (optional)
- Data updates
- Review and run

Review your model details

Model name [Edit](#)
Name: RetailChurnModel
Output entity name: RetailChurnModel

Preferences [Edit](#)
Prediction period: 90
Transaction volume decline threshold: 0.1
Transaction value decline threshold: 0.1

Required data [Edit](#)
Customer: Completed
Transaction: Completed

Additional data (optional) [Edit](#)
Session: Completed

Data updates [Edit](#)
Automatically import updated data: Weekly

[Back](#) [Save and run](#) [Save draft](#) [Cancel](#)

11. Confirm that the model is running and click on **Done**.

Predictions > Retail channel churn (preview)

- Model name
- Preferences
- Required data
- Additional data (optional)
- Data updates
- Review and run

Your model is configured and running!

Give it some time (a few hours at least) to review all the data, find patterns, and score probable outcomes. You'll find it in [My Predictions](#) when it's ready.

[Done](#)

12. Monitor the status of the request to see when it is finished. There is a chance you may receive an error on the first run. If you receive an error, simply run the prediction model again and it typically works on the second try.

Audience insights

Primary target audience: Individual consumers

Intelligence

Create [My predictions](#)

Prediction name ↑	Prediction type	Output entity	Predicted field	Status	Edited	Last refreshed
RetailChurnModel	Retail channel churn (preview)	RetailChurnModel		Queued	a minute ago	Never

13. It is possible you may receive an error on the first run, simply click Refresh all to run the model again.

The screenshot shows the Microsoft Power BI Intelligence interface. At the top, there is a "Refresh all" button and a search bar labeled "Search predictions". Below this, the title "Intelligence" is displayed, followed by two tabs: "Create" and "My predictions", with "My predictions" being the active tab. A table lists a single prediction named "RetailChurnModel". The columns are: Prediction name ↑, Prediction type, Output entity, Predicted field, Status, Edited, and Last refreshed. The "Status" column shows a red circle with a white exclamation mark and the word "Failed". The "Edited" column shows "17 minutes ago" and the "Last refreshed" column shows "3 minutes ago".

This screenshot is similar to the previous one, showing the "Intelligence" interface with the "My predictions" tab selected. The table lists the "RetailChurnModel" prediction. A modal dialog box is overlaid on the page, titled "Update predictions?". Inside the dialog, it says "All prediction data will be replaced by new predictions." with two buttons at the bottom: "Cancel" and "Update".

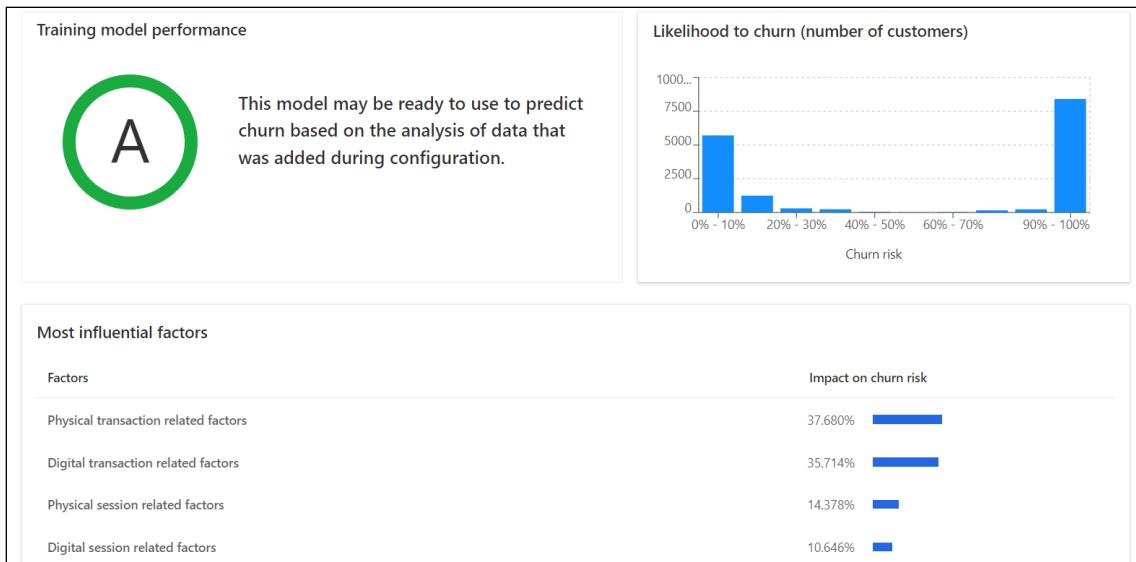
The screenshot shows the "Intelligence" interface with the "My predictions" tab selected. The table lists the "RetailChurnModel" prediction. The "Status" column now shows a blue circle with a white dot and the word "Refreshing". The "Edited" column shows "19 minutes ago" and the "Last refreshed" column shows "Never".

Congratulations! You have run the Retail channel churn predictive model.

Exercise 3: Understand the Churn Model Output

In this exercise, you will review the output of the Retail Churn model.

1. Open the Retail churn model to view its contents. Here you will find three main areas:
 - a) **Training model performance** will display a letter grade of how well the model has performed.
 - b) **Likelihood to churn (number of customers)** that can be read as X customers are Y% likely to churn.
 - c) **Most influential factors** considered by the AI in predicting the model. This will vary depending on the data set.



- To view a customer's full profile in Dynamics 365 Customer Insights, navigate to Customers and open any of the sample records.

Audience insights

Primary target audience: Individual consumers

Customers (grid view):

- Customer 5: ID 503.03, msr_creditscore 503.03
- Customer 5: ID 570.903, msr_creditscore 570.903
- Customer 7: ID 793.602, msr_creditscore 793.602
- Customer 9: ID 904.028, msr_creditscore 904.028
- Customer 6: ID 607.556, msr_creditscore 607.556
- Customer 7: ID 767.994, msr_creditscore 767.994
- Customer 8: ID 848.195, msr_creditscore 848.195

Search & filter index, **Clear filters**, **Show filters**, **Expand cards**, **Sort by**, **Search customers**

The screenshot shows the Microsoft Power BI Audience insights interface. On the left, there's a navigation sidebar with icons and labels: Audience insights (selected), Primary target audience (Individual consumers), Home, Customers, Segments, Measures, Intelligence (with Predictions and Custom models), Data (with Reports (Preview)), and Admin. At the top right, there are links to "Back to Customers" and "Profile add-ons". The main area displays a large green circle with the number "5" and "503.03" next to it. Below this, there's a list of customer details:

CustomerId	4236b6b232f1b337f369a01c66d26002
genderCode	N/A
birthdate	4/23/1981
msrc_creditsc...	503.03
Address	--
Additional fields	
msrc_loyaltymembe...	False
msrc_agreementto...	True
annualincome	24,173
msrc_occupationsta...	Partially employed
msrc_customerrelati...	359
msrc_distancetonea...	12.25

3. To view the calculated churn scores, navigate to **Data** and then under **Entities**, open the **RetailChurnGrocery** entity that was created when you ran the churn model

The screenshot shows the Audience Insights interface with the 'Entities' tab selected. On the left, there's a sidebar with navigation items like Primary target audience, Home, Customers, Segments, Measures, Intelligence, Data, Data sources, Entities (which is highlighted), Unify, and Enrichment. The main area is titled 'Entities' and contains a table with columns for Name and Source. The table is organized into sections: Intelligence (1), Profiles (1), System (4), and User (3). The data rows include RetailChurnGrocery under Intelligence, Customer under Profiles, ConflationMatchPairs, Deduplication_retailchurngrocery_c..., Deduplication_retailchurngrocery_se..., and Deduplication_retailchurngrocery_tr... under System, and contact, session, and transaction under User.

Name	Source
RetailChurnGrocery	Customer Insights
Customer	Customer Insights
ConflationMatchPairs	Customer Insights
Deduplication_retailchurngrocery_c...	Customer Insights
Deduplication_retailchurngrocery_se...	Customer Insights
Deduplication_retailchurngrocery_tr...	Customer Insights
contact	retailchurngrocery
session	retailchurngrocery
transaction	retailchurngrocery

- On the Attributes tab, you will find various new columns created by the model that factor into the score. Here is a breakdown of some of these attributes:
 - ExpFeature1 = Contact related factors
 - ExpFeature2 = Digital transaction factors
 - ExpFeature3 = Physical transaction factors
 - ExpFeature4 = Digital session factors
 - ExpFeature5 = Physical session factors

The screenshot shows the Dynamics 365 Customer Insights interface. On the left, there is a navigation sidebar with various sections like Home, Customers, Segments, Measures, Intelligence, Data, Data sources, Entities, Unify, Enrichment, Activities, and Relationships. The 'Entities' section is currently selected. At the top right, there are 'Back to Entities' and 'Download' buttons. The main area is titled 'Customer Insights' and 'RetailChurnGrocery'. Below the title, there are two tabs: 'Attributes' (which is selected) and 'Data'. The 'Attributes' table has columns for 'Name' and 'Data type'. The data includes:

Name	Data type
CustomerID	String
ExpFeature1	Double
ExpFeature2	Double
ExpFeature3	Double
ExpFeature4	Double
ExpFeature5	Double
ModelSignature	String
Publisher	String
Score	Double

5. Click the **Data** tab to see the calculated churn score for each of the **CustomerIDs** in the dataset.

The screenshot shows the same Dynamics 365 Customer Insights interface as above, but the 'Data' tab is now selected. The main area displays a table with columns: CustomerID, Score, ScoreDigitalChannel, ScorePhysicalChannel, and Timestamp. The data is as follows:

CustomerID	Score	ScoreDigitalChannel	ScorePhysicalChannel	Timestamp
00004770b2be629b0a47ebbabcb67e01	0.97	0.977	0.97	2/24/2022, 4:00:00 PM
006d1ef11a78c75687ce52a27652e5a9	0.945	0.945	0.955	2/24/2022, 4:00:00 PM
006e6961ee86aa585e625ec94b091d30	0.004	0.004	0.007	2/24/2022, 4:00:00 PM
006ea21704b83a46a435da0f017ae62a	0.004	0.004	0.013	2/24/2022, 4:00:00 PM
00cab8ed3c96c5a352a8b64244d0565c	1	1	1	2/24/2022, 4:00:00 PM
00cc633a28e668a0606029d688ef85a8	0.186	0.186	0.201	2/24/2022, 4:00:00 PM
00d54bc0a28bd427c3376d982b3d22c	0.013	0.013	0.013	2/24/2022, 4:00:00 PM
00d747757eeb6d412d2334a1265579c8	1	1	1	2/24/2022, 4:00:00 PM

Congratulations! You have successfully run the Retail Churn Model in Dynamics 365 Customer Insights.

Summary

Nice work! You have completed the lab for Microsoft Coud for Retail channel churn predictive model.

In this lab, you learned how to do the following:

1. Create Retail channel churn predictive model
2. Train the model
3. Understand the model output