Lab 1: Getting Started with Tableau Prep

In this lab, you will come to understand how we think about data preparation from the perspective of Tableau Prep Builder. You will learn about the different use cases you may employ Tableau Prep for, be it ad hoc data analysis, creating a dataset for a BI tool, or specifically for **Tableau Desktop**.

In this lab, we will cover the following exercises:

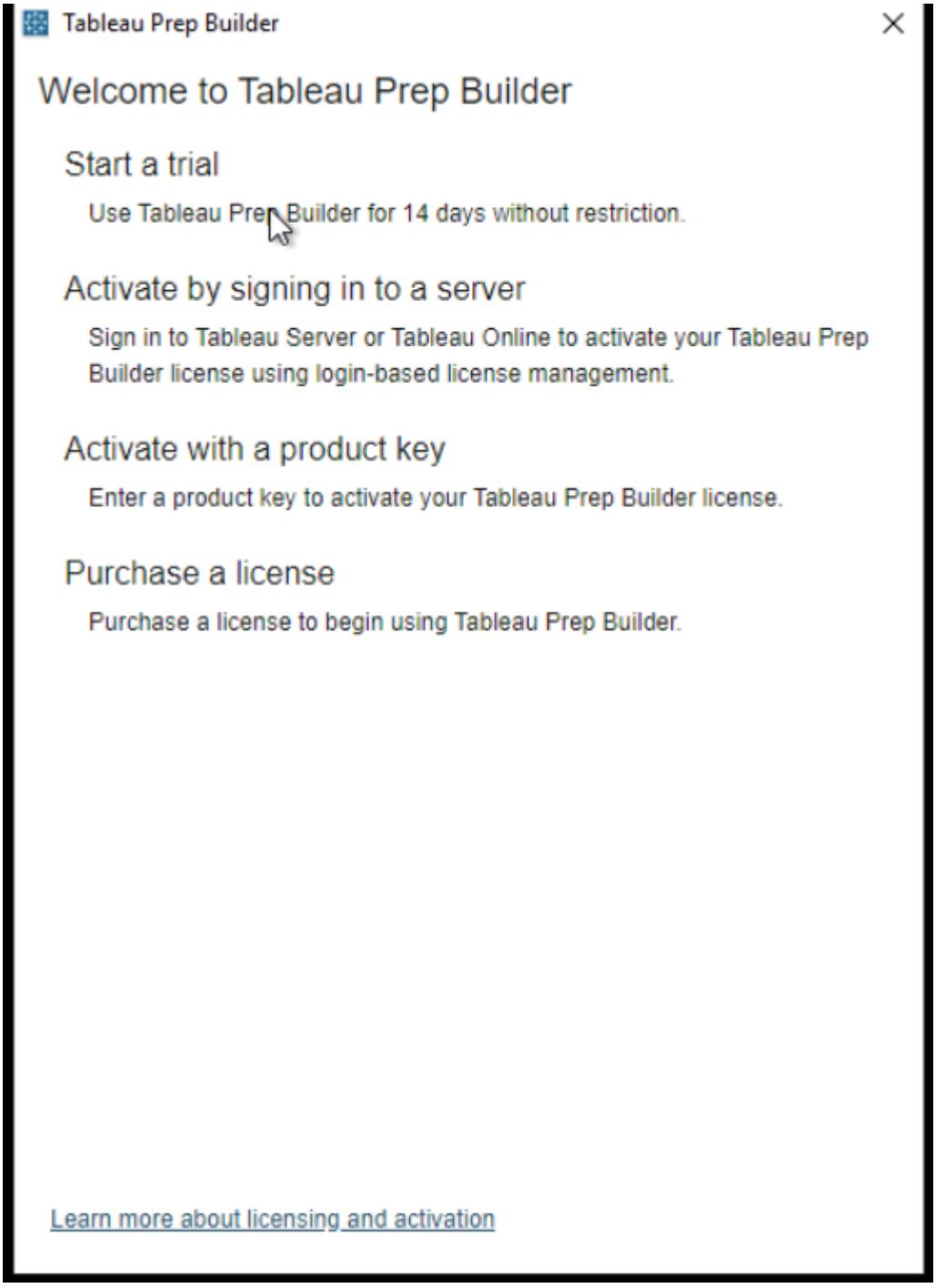
- Checking out the user interface
- Using Tableau Prep for ad hoc data analysis
- Preparing data for generic BI tools
- Preparing data for Tableau Desktop ad hoc analysis

Technical requirements

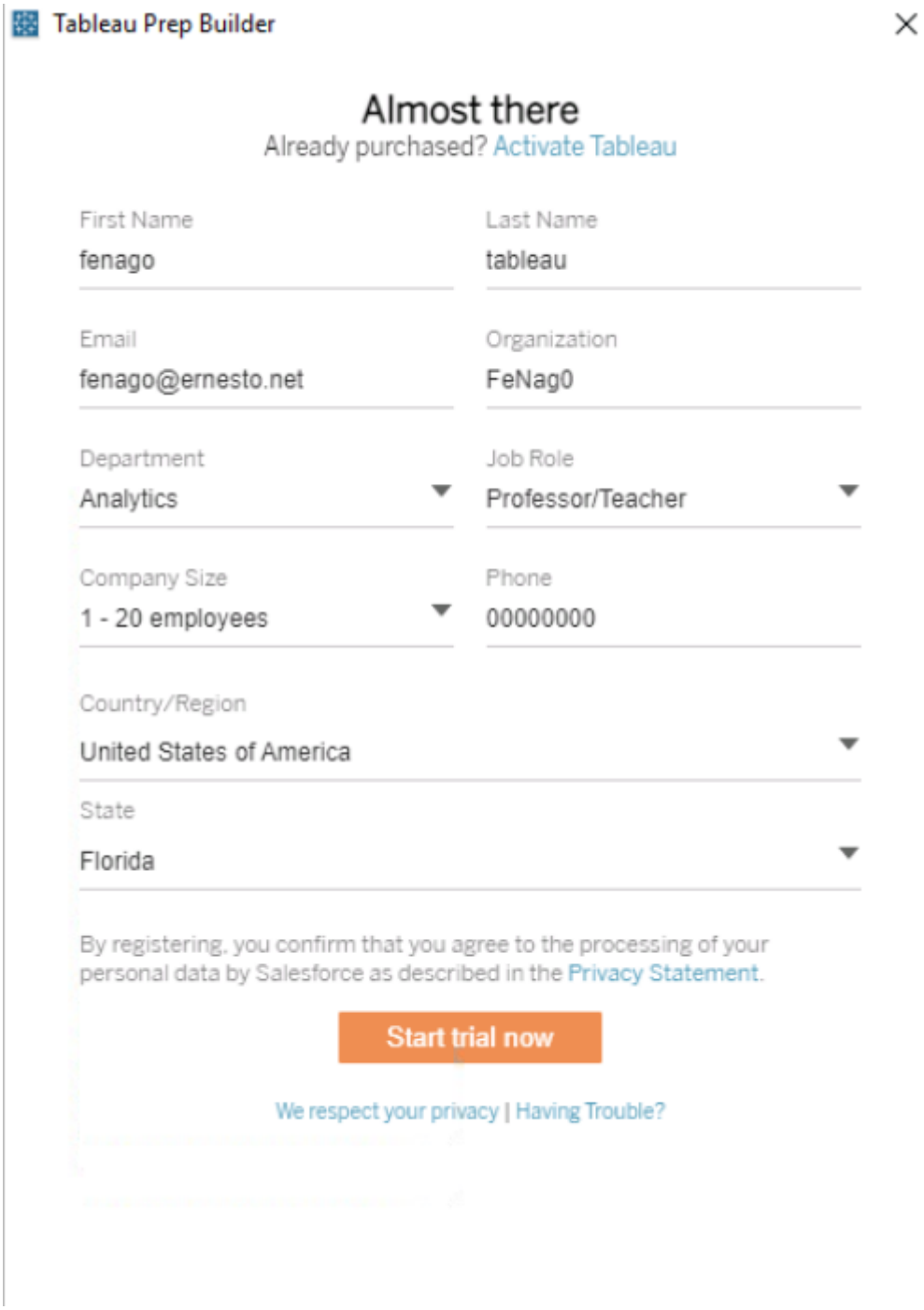
To follow along with the exercises in this lab, you need to have **Tableau Prep Builder** installed, and **Tableau Desktop**. In the first exercise, we'll walk through the details of installing Tableau Prep Builder.

Open Tableau Prep Builder

In this exercise, you'll open **Tableau Prep Builder**. Double click Tableau Prep icon to launch and click `Start a Trial` to start using the software.

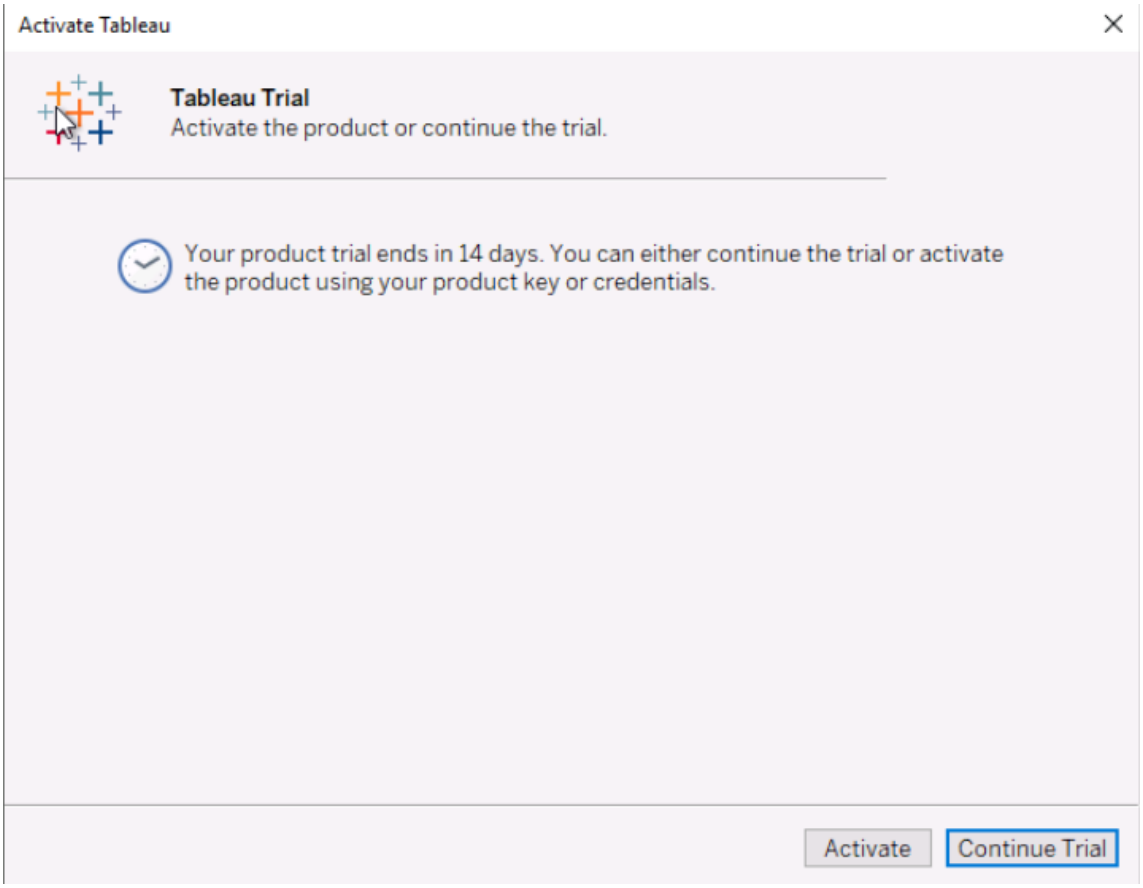


Enter information click and `Start trial now`. You can enter test information to start the trial.

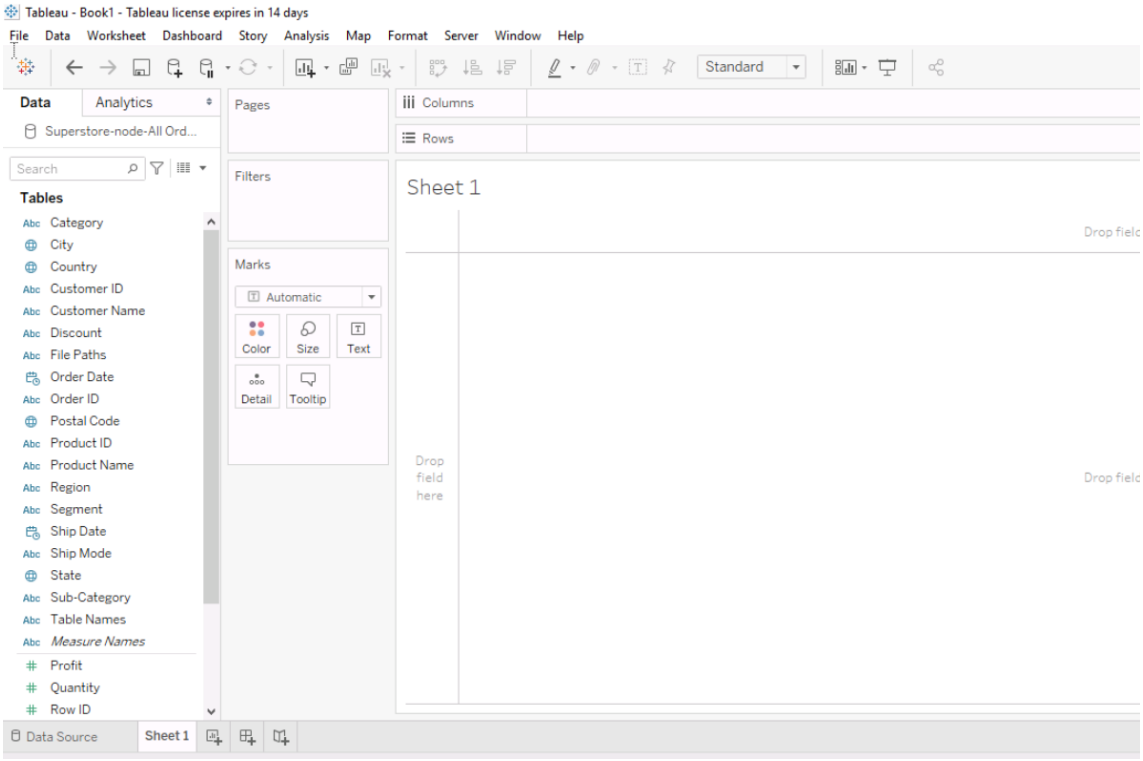


Open Tableau Desktop

In this exercise, you'll open **Tableau Desktop**. Double click Tableau Desktop icon to launch and start trial to use the software.



You will following screen after opening tableau desktop.



Note: You can close the Tableau Desktop now.

Checking out the user interface

Tableau has taken great care in creating an interface that is intuitive and easy to understand. Perhaps best of all, it has quite a few similarities to the manner in which things are laid out in Tableau Desktop. So, if you are familiar with Tableau Desktop, you should feel right at home.

In this exercise, we will take a brief tour of the Tableau Prep user interface.

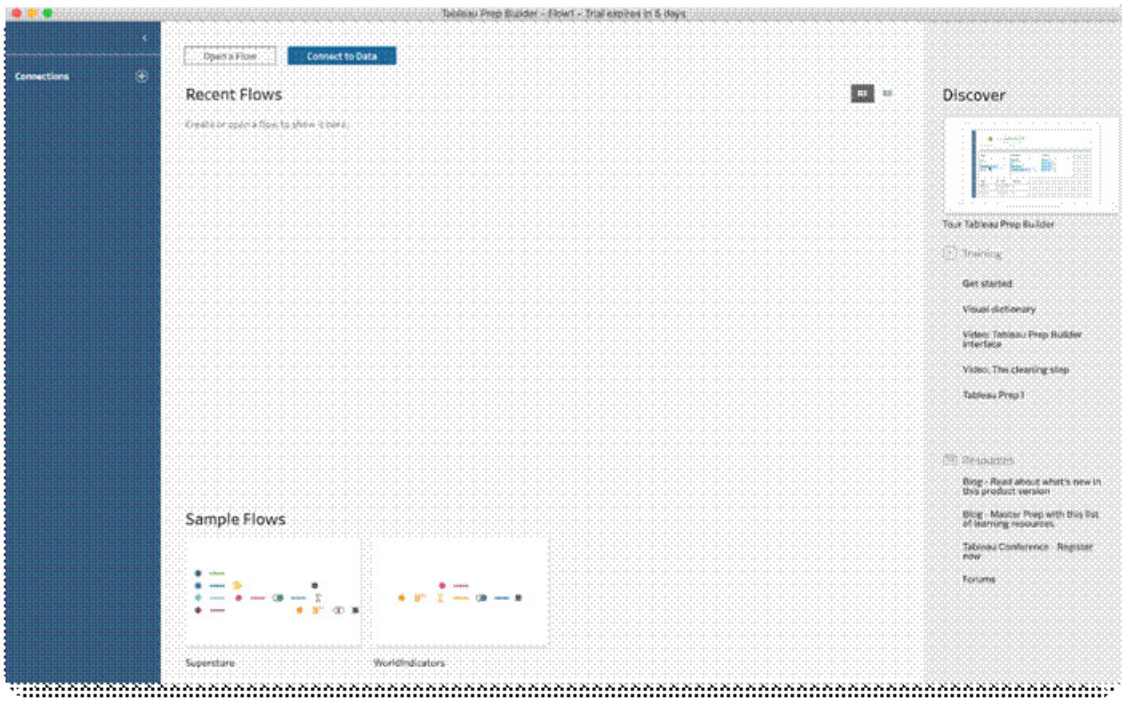
Getting ready

Tableau Prep provides what we need right out of the box. That includes data connectors, sample flows, training resources, and community updates. We'll walk through these step by step. This knowledge is foundational to all exercises.

How to do it...

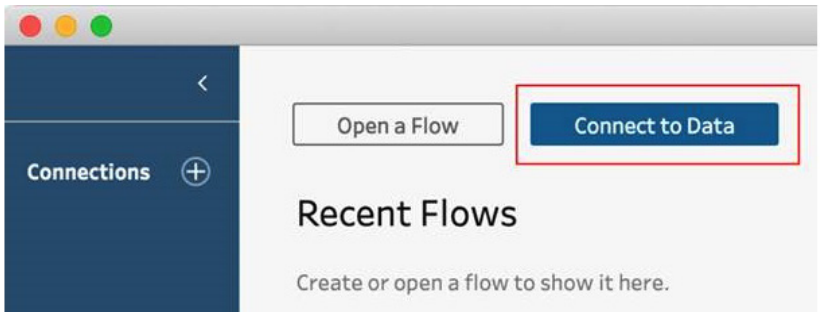
Open Tableau Prep:

1. When you open **Tableau Prep Builder**, you're presented with the home screen. From here, you can take a number of actions, which we'll cover briefly:

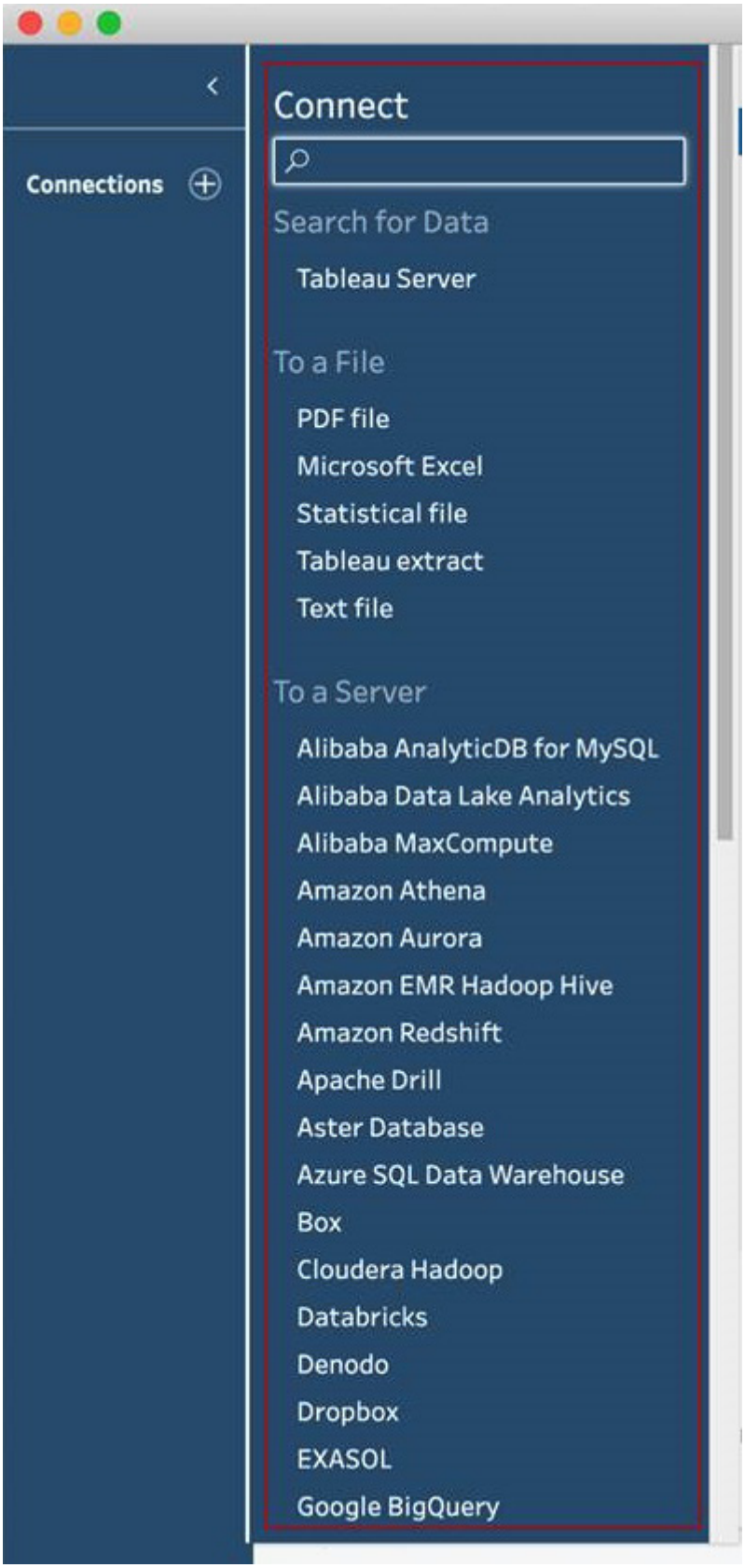


In Tableau Prep, a **flow** is what we call a data pipeline. If you've used other software in the past, you may have referred to a pipeline as an **Extract, Transform, and Load** (**ETL**) process, **workflow**, or **data pipeline**.

It's easy to start a new flow, simply by creating a data connection. To get started, click the blue **Connect to Data** button to expand the data connection options:



From here, select your connection type, and that will complete the creation of a new flow:



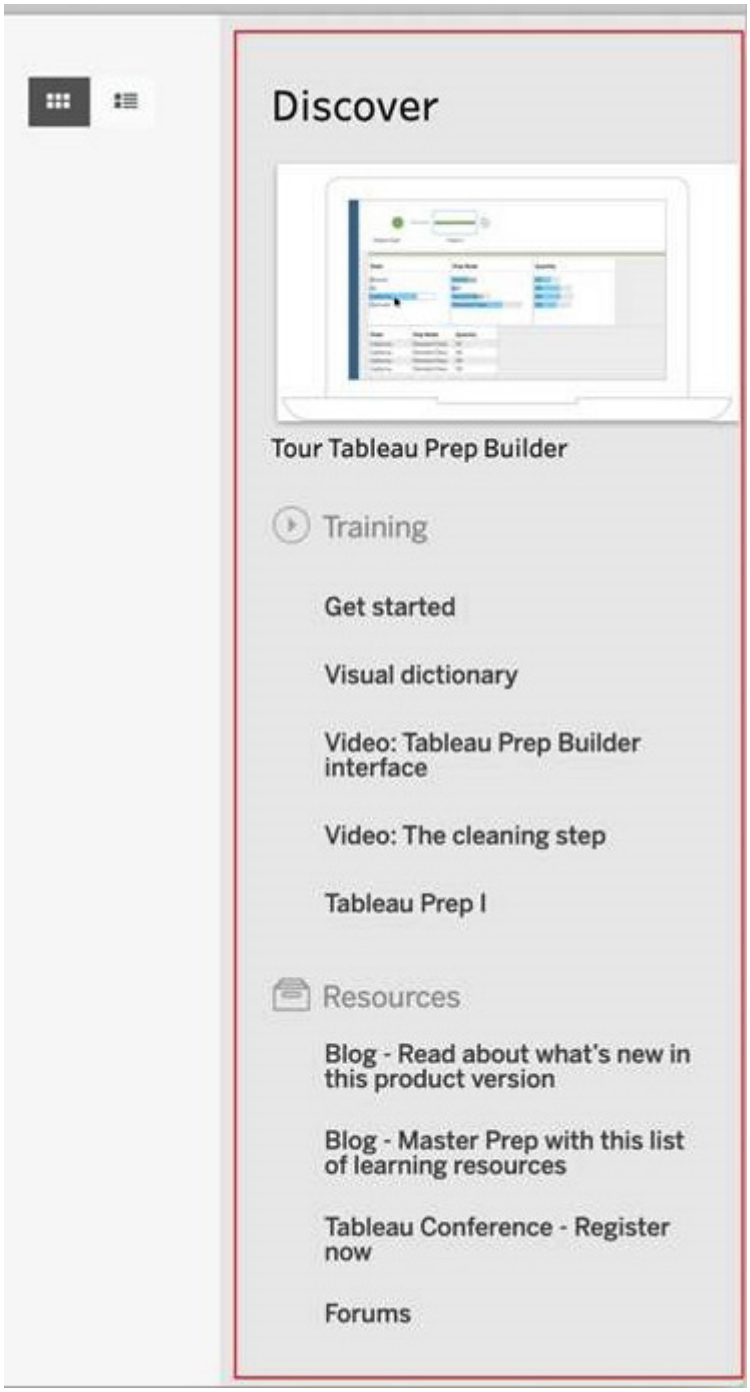
In *Lab 2*, *Extract and Load Processes*, we'll cover the configuration of various data connections in detail.

2. At the bottom of the home page, you'll notice two example flows provided by Tableau:

Both these flows use the sample **Superstore** and **WorldIndicators** data that is delivered with the Tableau Desktop application as well, so you may be familiar with this data already.

These example flows can be opened with one click and run locally. They're excellent for testing out quick actions and exercises learned in this course, without the need for you to create a new flow from scratch. Personally, I've become so accustomed to this, I typically try something out in an example workflow quickly, and then move on to my own flow and implement the action there when I'm confident it'll work.

3. To the right side of the home screen, you'll find the **Discover** pane:

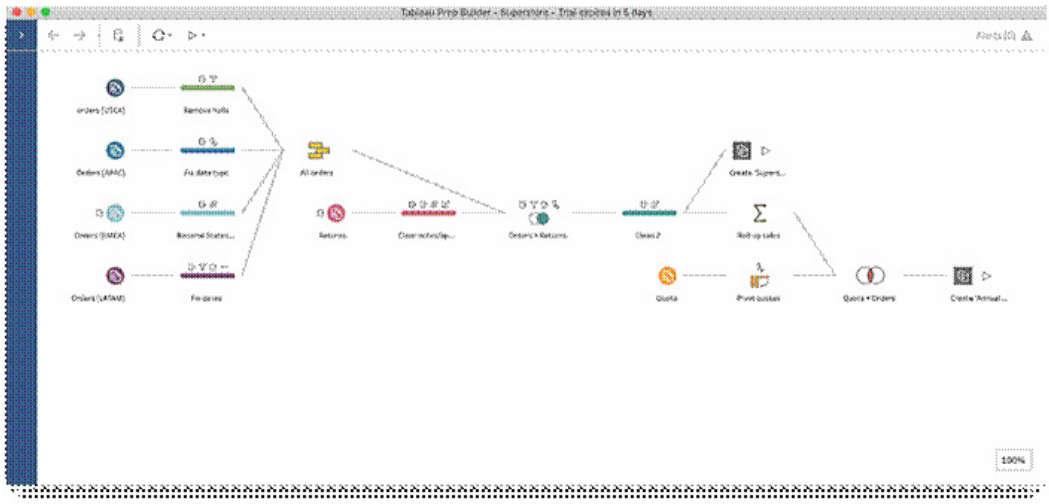


The **Discover** pane has two sections that are always visible, **Training** and **Resources**.

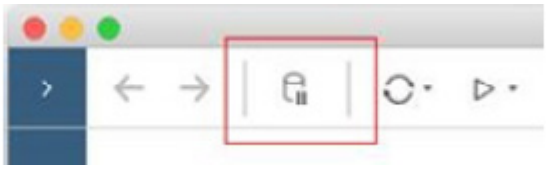
4. There are two ways to open flows. Firstly, you can use the **Open a Flow** button at the top of the home screen.

   The second, one-click approach is to select a flow from the **Recent Flows** section. This section will automatically update based on your activity, with the latest flow accessed being the first one listed:

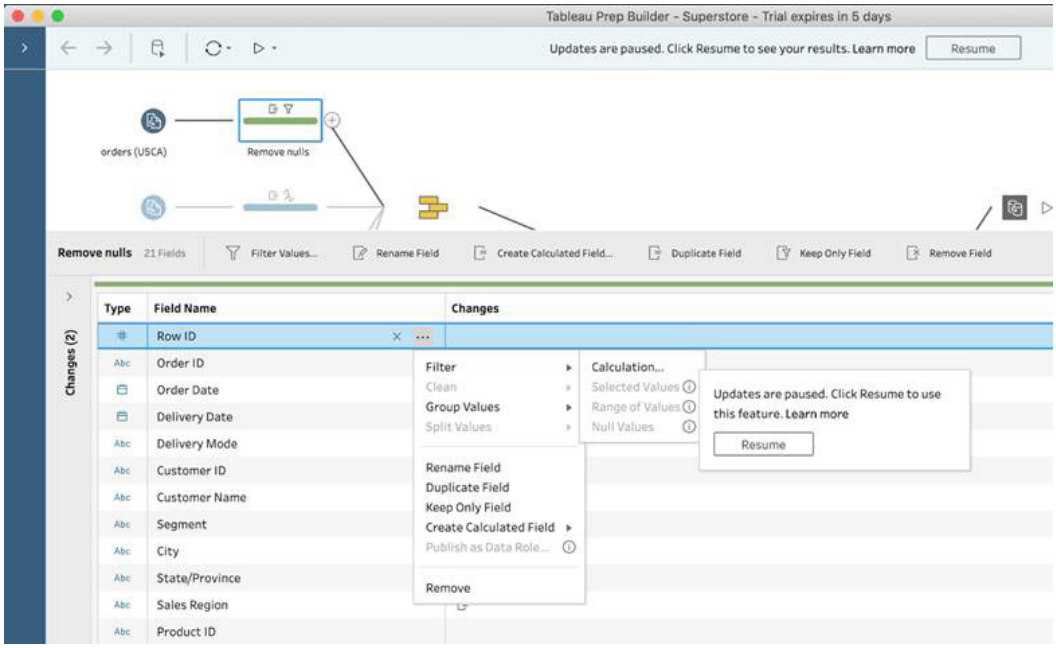
5. Click the **Superstore** flow in the **Recent Flows** section to view a flow in the flow builder interface, which shows you the data input, transformations, and output steps in a single overview:



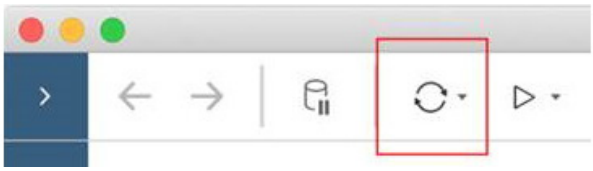
6. A key feature of the flow interface is pausing data updates, which you can enable and disable with a single click in the top action bar:



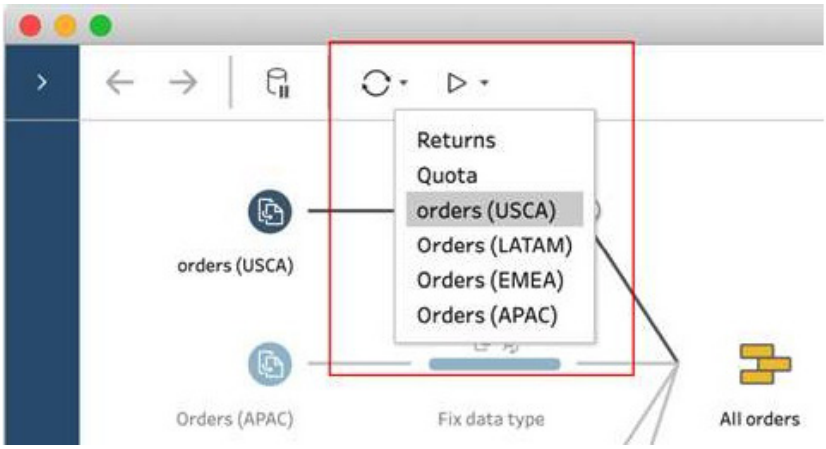
7. When data updates are paused, Tableau Prep Builder does not validate all the changes you are making instantly. As a result, you get increased performance. However, some features that require a data preview will be disabled until you resume data updates:



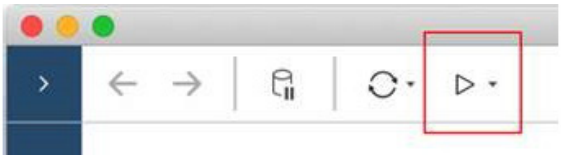
8. Next to the **Pause Data Updates** icon, you'll find the **Data Refresh** button. This comes in handy when you are actively working on a flow and you are expecting changes to your data inputs at the same time. For example, a column may have been added to a data input since you opened the flow. In that case, you'll need to refresh the input to ensure the column becomes visible to Tableau Prep:



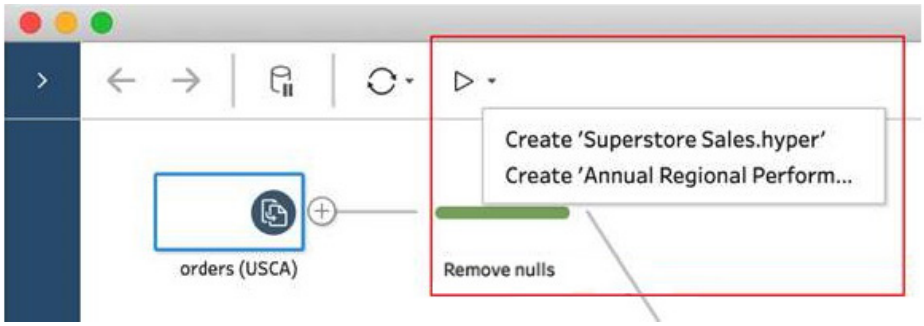
9. You can click the button itself to simultaneously update all inputs. Alternatively, open the dropdown to select a single input to update:



10. The play button in the action bar will run your workflow and produce all outputs with a single click:



11. However, you may also select the dropdown and select a specific output to be generated only. This could significantly improve the flow runtime, a great benefit during development and testing:



You're now familiar with the foundational elements that make up the **Tableau Prep Builder** user interface and can start building flows using your data.

How it works...

Simply put, Tableau Prep Builder works by ingesting data from a source to your local machine and processes it there whenever you make updates to a flow, in real time. To stay performant, Tableau Prep Builder automatically takes a sample of your data inputs only during this process. When you execute an entire flow, only then will the full data input be processed, and so this may take longer than previewing data in real time. In *Lab 2*, *Extract and Load Processes*, there is a exercise to manage the sampling size and method used by Tableau Prep.

Using Tableau Prep for ad hoc data analysis

In this exercise, you'll learn how to leverage Tableau Prep Builder to perform ad hoc data analysis. In most scenarios, getting insights from your data would involve the creation of a data pipeline and then connecting a data visualization tool to the output of that pipeline to perform your analysis. However, with Tableau Prep Builder, you can perform basic ad hoc analysis on your data from within the tool itself.

Getting ready

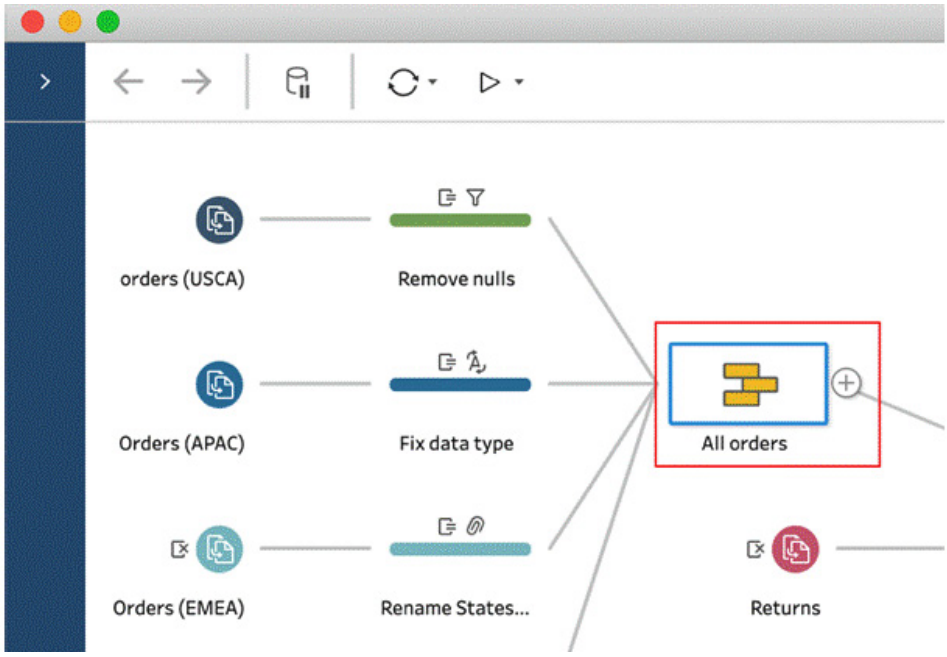
Open the Tableau Prep **Superstore** flow to follow along with the steps outlined.

How to do it...

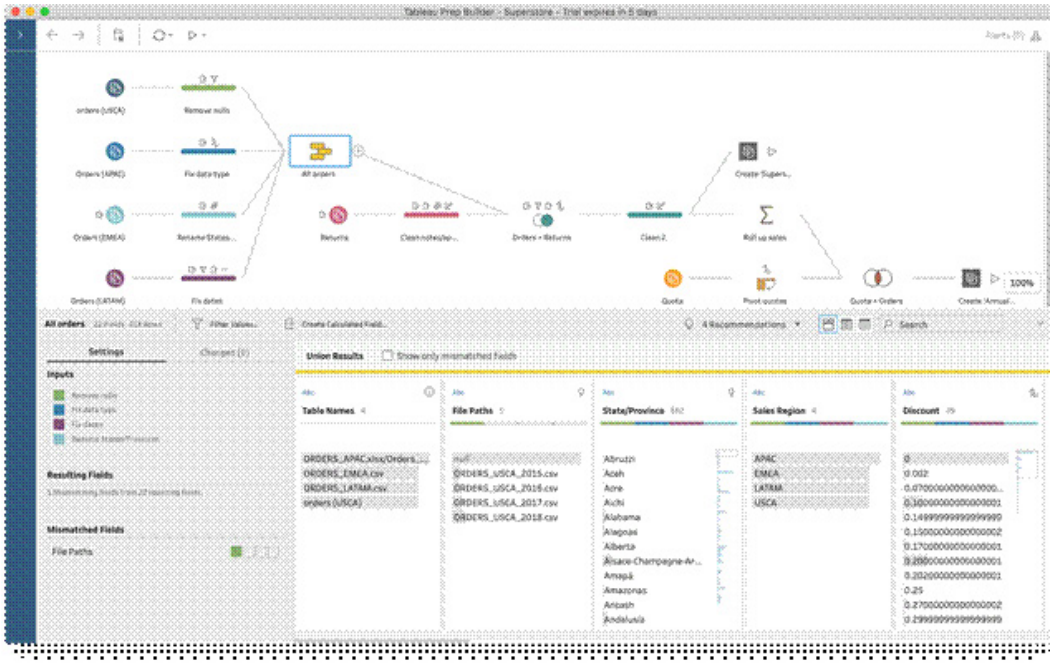
Ad hoc analysis typically starts with a business question to be answered with the use of your data. Let's assume the question posed for the **Superstore** data is: *Which is the top category of products that consumers order with same-day delivery?*

Following these steps, you'll be able to use Tableau Prep to answer this question without the need for additional reporting tools:

1. In Tableau Prep Builder, select the **All orders** step:



2. Whenever we select a step in Tableau Prep, the bottom pane will become visible. The pane will leverage data as it is at the time of the step being selected. In our case, this will be the state of the data after having passed through the **All orders** step:



3. First, let's reduce the dataset to consumers only. To do this, scroll horizontally through the columns in the results pane until you find the **Segment** column. From the three available values, **Consumer**, **Corporate**, and **Home Office**, right-click **Consumer**. From the context menu, select **Keep Only**:

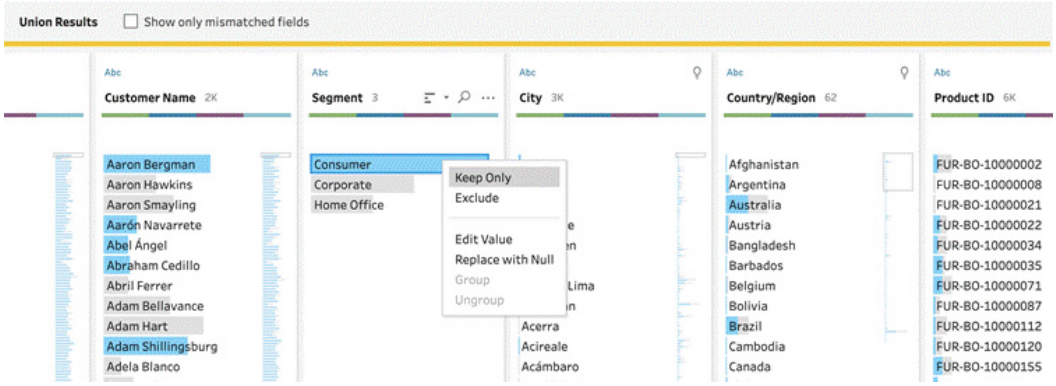
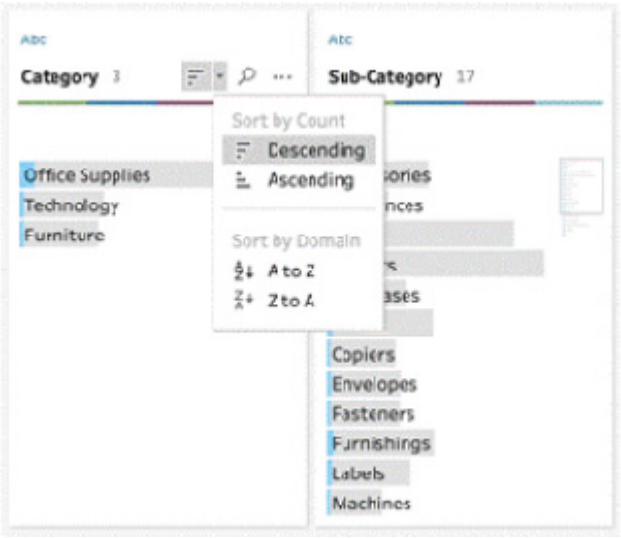


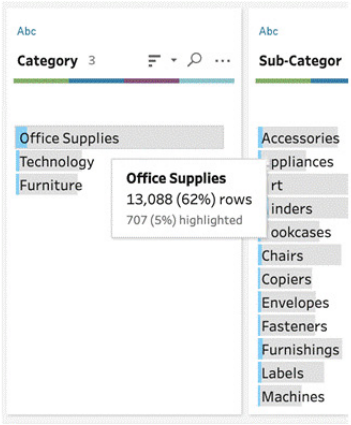
Tableau Prep will instantly apply the filter and show you the data preview excluding any segments that are not **Consumer**.

4. Next, locate the **Ship Mode** field. We could perform the method of filtering as in the previous step. However, an alternate method ideally suited to quick exploratory analysis is using **highlights**. Highlights instantly mark data related to the selected value in the results pane, in a shade of blue. Go ahead and left-click **Same Day** ship mode.

5. Next, locate the **Category** column and sort its values by descending order:



6. Now, we can clearly see the top category for consumers' orders with same-day shipping is **Office Supplies**, which is the answer to the business question posed. We can get additional information by hovering over the item and see that number of rows, or % of consumer orders, fall into this category:

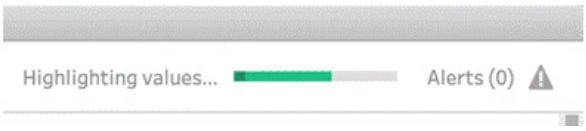


With these steps, you've quickly performed ad hoc analysis on the **Superstore** data and identified the top product category for consumers who placed orders with the same-day shipping ship mode.

How it works...

Using Tableau Prep Builder, we've quickly performed exploratory data analysis without the need to run our flow or create new outputs. Doing so provides great value not only in terms of a fast turnaround but also in keeping your data landscape clean by avoiding the creation of new data sources (outputs) for simple analysis.

When you perform analysis in this fashion, Tableau Prep instantly runs the required actions in the background to give you the results. In the **Superstore** example flow, this is fairly quick. However, on large datasets, this may take more time. Tableau Prep will show a progress indicator in the top-right corner when performing such background actions:



In this exercise, you've learned how to quickly perform ad hoc data analysis in Tableau Prep without the need to export your data for analysis in a downstream application.

Preparing data for generic BI tools

In this exercise, you'll learn how to use Tableau Prep to generate outputs for consumption by a variety of **Business Intelligence** (**BI**) tools. Specifically, we'll write a single output, from a flow with multiple outputs, to a CSV file.

Getting ready

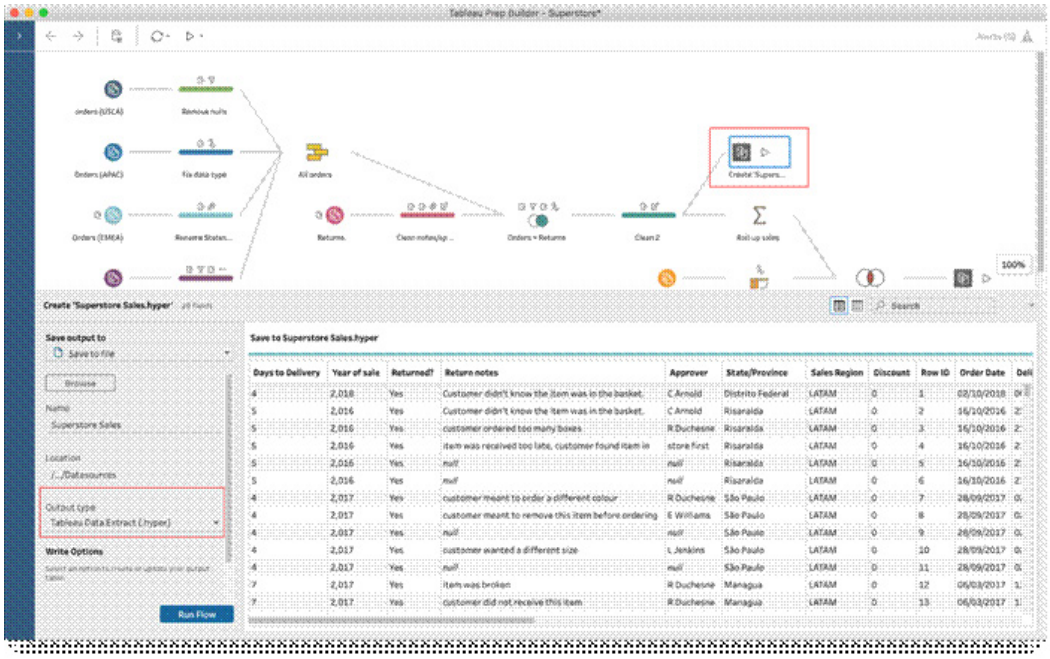
Open the Tableau Prep **Superstore** flow to follow along with the steps outlined.

How to do it...

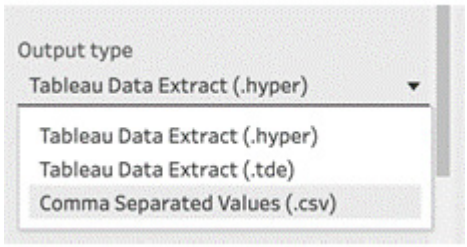
In the steps that follow, we'll create an output that is suitable for consumption by data visualization and BI tools other than Tableau Desktop:

1. Examine the output steps in the **Superstore** flow by clicking either output. In the bottom pane, notice how **Output type** is set to **Tableau Data Extract (.hyper)**. This is the default output format for any output step

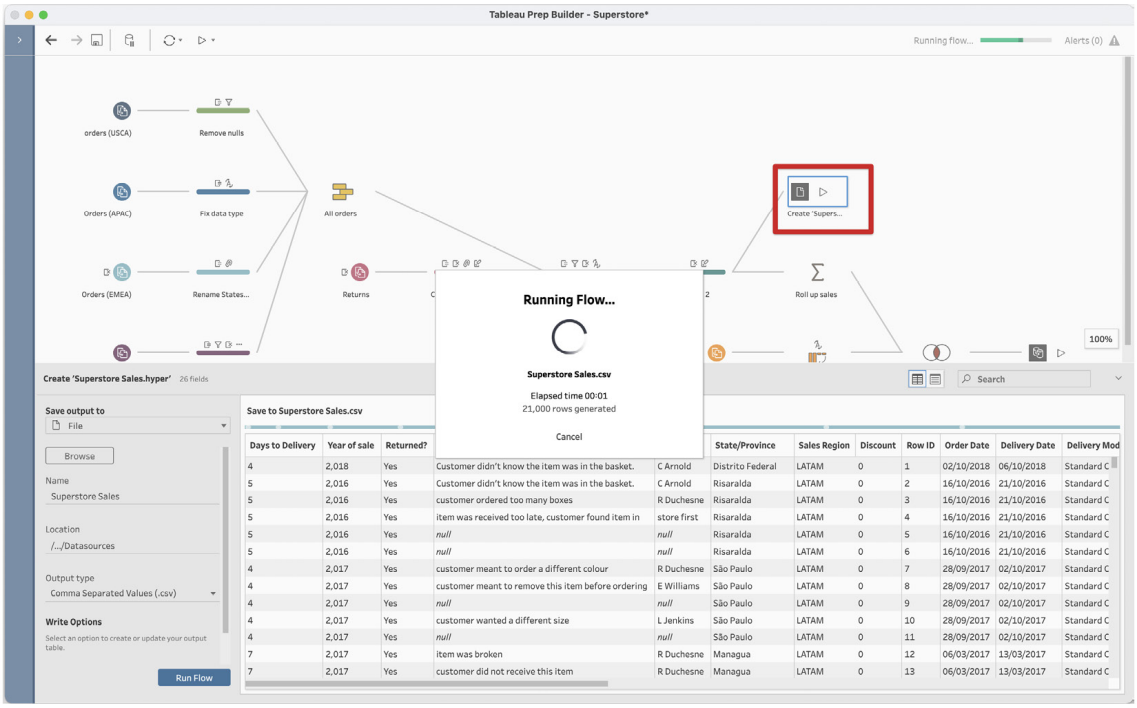
added to a flow:



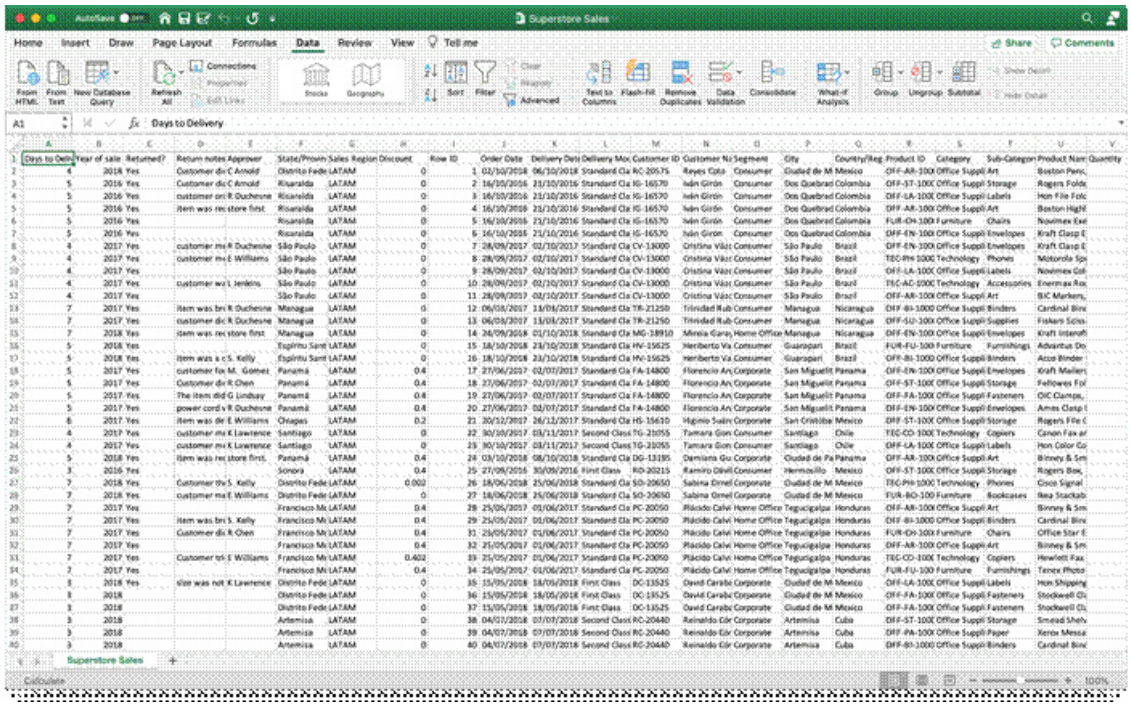
2. Since the **.hyper** extract is a proprietary format, it cannot be opened by other applications for further analysis. However, we can change the output type to CSV. CSV outputs are compatible with most leading BI tools and spreadsheet applications:



3. Once you have an output configured, run just the output that you need to open in the BI tool. If you're using the **Superstore** sample flow, select the Create '**Superstore Sales.csv**' output step and click on the play button within the step. This will ensure the flow only generates this one output, rather than all outputs in the flow:



4. Finally, open the CSV file in the tool of your choice for further analysis. You can keep both Tableau Prep and the analysis application open and, if needed, tweak your flow and run the output again to update the saved CSV file:



You've now successfully completed this exercise and are able to export data to CSV so that you may utilize the transformed dataset in a BI application.

How it works...

Using the preceding steps, Tableau Prep Builder generates a generic CSV file that can be opened by most popular BI and spreadsheet applications. The benefit of this is that you are free to leverage any tool of your choice and are not locked into any particular ecosystem.

Using Tableau Prep to run distinct outputs separately is a great feature for ad hoc analysis, as you do not need to refresh your entire output every time.

Preparing data for Tableau Desktop ad hoc analysis

In this exercise, you'll learn how to use Tableau Prep to generate a Tableau Desktop workbook at any point in your flow, to perform further analysis on that data.

Similar to the third exercise, *Using Tableau Prep for ad hoc data analysis*, we'll find the answer to the question posed for the **Superstore** data: *Which is the top category of products that consumers order with same-day delivery?* However, this time, we'll get the answer in Tableau Desktop instead.

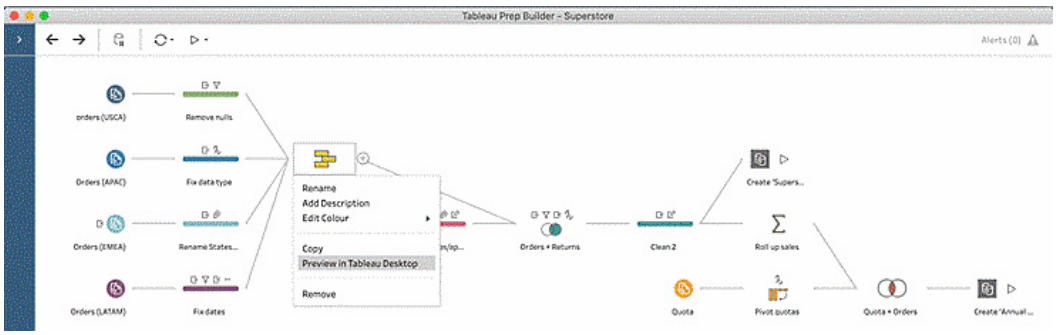
Getting ready

Open the Tableau Prep **Superstore** flow to follow along with the steps outlined. Ensure that Tableau Desktop is installed.

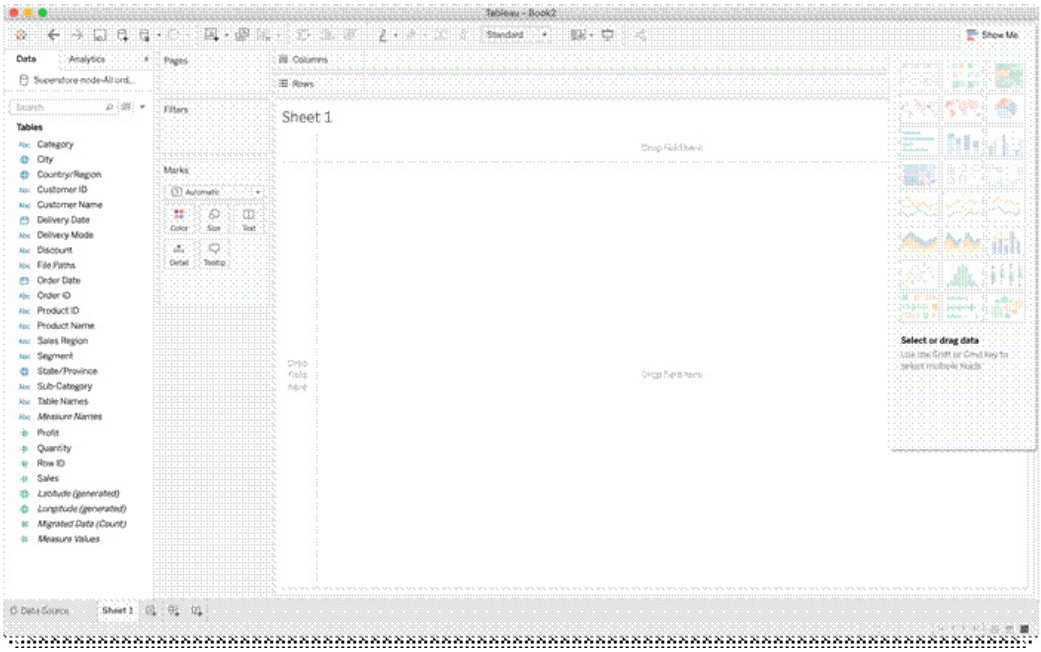
How to do it...

In the steps that follow, we'll produce a temporary **hyper extract** that will allow us to perform quick ad hoc analysis in Tableau Desktop:

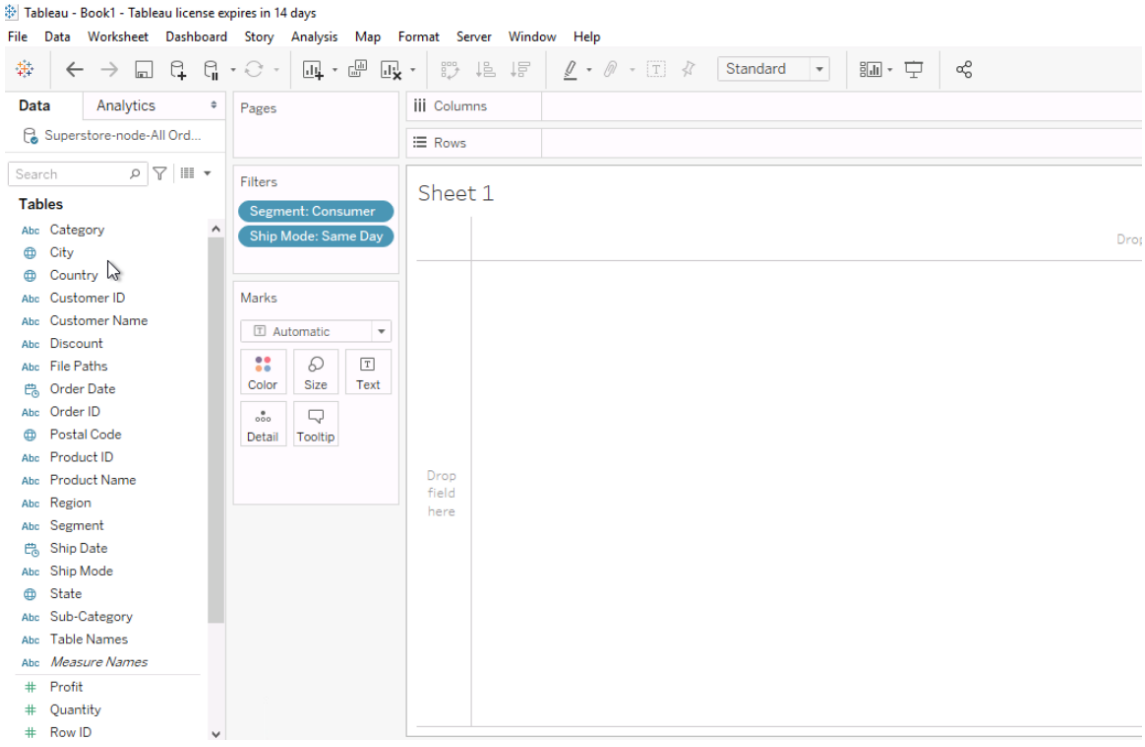
1. To perform quick ad hoc analysis with a dataset in Tableau Desktop, you can click any step (excluding input and output steps) and select **Preview in Tableau Desktop**. Go ahead and select the **UNION** step, then select **Preview in Tableau Desktop**:



2. **Note:** It might take couple of minutes and Tableau Desktop will start automatically and open a new workbook connected to the data from the step we selected in the flow:

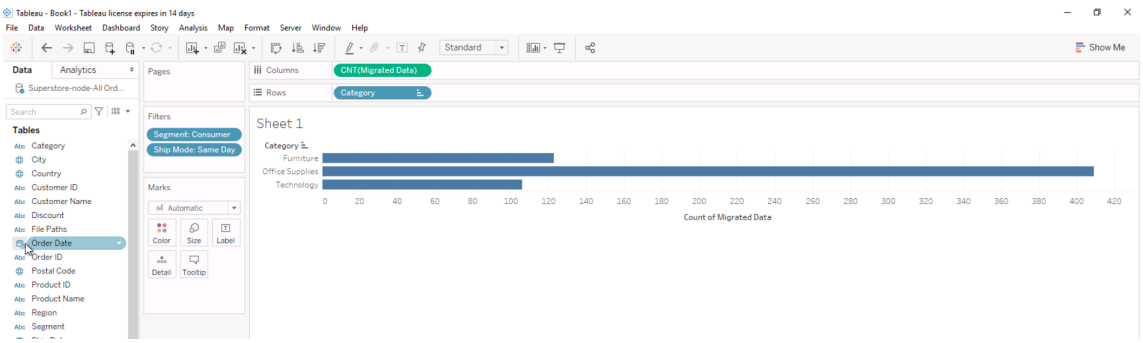


3. From here, you can perform the typical analysis you'd perform in Tableau Desktop. Add a **Segment** filter for **Consumer**, a **Ship Mode** filter for **Same Day**.



Note: You can drag these fields in Filters menu from the left menu.

4. Create a bar chart using the **Category** dimension and the **CNT(Migrated Data)** measure, as shown in the following screenshot:



Note: You can drag the fields in Columns/Rows section as shown in the screenshot.

```
And with this, we\'ve found the
answer to our question. **Office Supplies** is the
product category for which consumers most often leverage same-day
shipping.
```

How it works...

When leveraging the **Preview in Tableau Desktop** functionality, Tableau Prep automatically creates a temporary **.hyper** extract and connects that to a new Tableau workbook. This is ideal for quickly visualizing your data at any point in the data flow, whether that is for exploratory analysis or simply verifying that your flow works as expected up to the selected step.