

Instructions - Dashboard Creation

General Look and Feel of the Dashboard

In Tableau, you can create worksheets and dashboards by clicking on one of these two icons at the bottom of the screen:



In general, you will create a number of worksheets and combine them into one or more dashboards.

You should create at least the following worksheets:

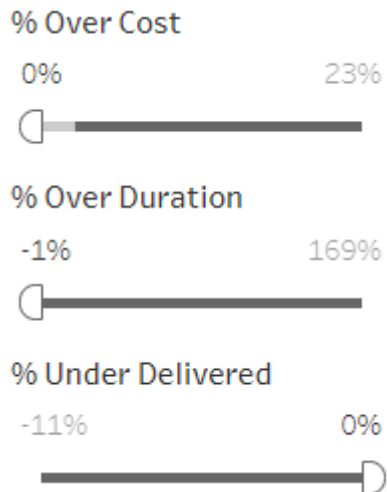
- A **map** showing the countries that Dental Pharma operates in.
- A **table of the projects**, showing the region, country, country type, project type, phase, date, planned and actual cost, planned and actual duration.
- A chart showing countries where the **cost has overrun**.
- A chart showing countries where the **duration has overrun**.
- A chart showing countries **under-delivering** (i.e. where the deliverables are below the target).
- A chart showing the **percentage over budget by time**.
- An attractive chart showing the **duration of projects by country and phase**.

You should create one or more dashboards that combine a subset of the worksheets. It is not necessary to have all of them in a dashboard. Instead, think about which ones make sense to combine.

The map should be interactive. For example, as countries are selected on the map, the other components of the dashboard should respond, being filtered by the selected countries.



The cost overrun, project overrun, and under-delivered charts should allow the percentage overrun to be selectable, for example, using a slider:



Security Roles

Dental Pharma has an access control list (ACL) that protects data down to the table, column, row, and atomic values based on users credentials. For purposes of designing this dashboard, you can assume that the user can identify themselves as the general manager, regional manager, or country manager via a global filter on the dashboard. If they misidentify themselves, you do not need to worry about the security implications. When the final dashboard is deployed, the ACL will only allow them to see the data they are supposed to. That is:

- The general manager sees everything,
- the regional manager only sees their region(s), and
- the country manager only sees their countries.

Views According to the Roles

Three “views” on the data correspond to the three roles: General manager, regional manager and country manager. The data seen by the user depends on their role. All activities that the user does are the same regardless of their role. The only difference is the restriction on



the data you have put in place based on their self-identification. This makes the coding for this much easier as you only need to develop the charts, tables and dashboards once, not once for each view.

Detailed Steps


Here are some steps you can follow to guide you in this task. The steps are written for Tableau, but you can follow a similar approach for PowerBI or Excel. Don't forget to save your project regularly to avoid losing your changes!

1. Log into Tableau Public

You will need to create an account if you don't have one.

2. Create a new Viz

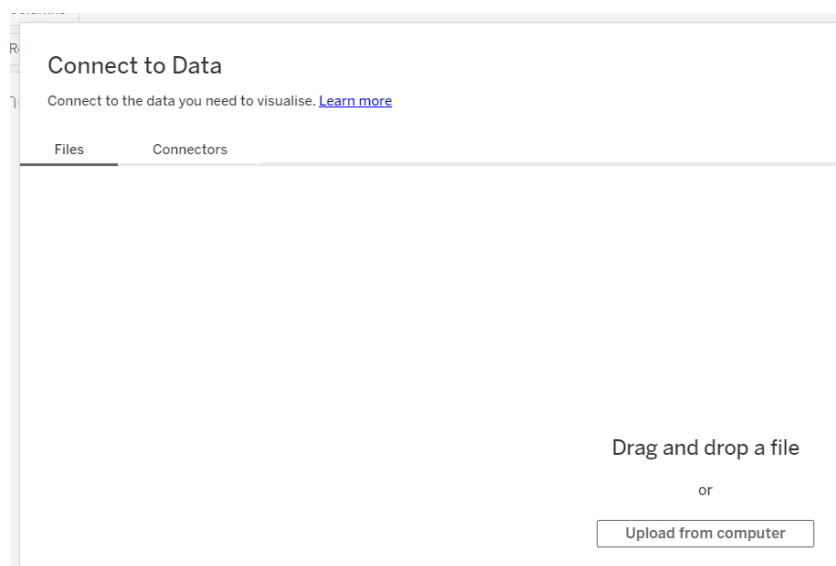
Click on the button to create a new dashboard:



Create a Viz (Beta)

3. Import the data

When you create a new Viz, you will be invited to connect to your data:



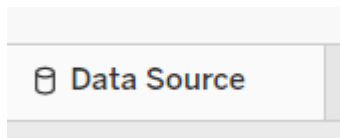
a) **Connect to the project data**

First, you should load the main data set, the ProjectData file.
Drag the **ProjectData** .csv file to the **Connect to Data** box.

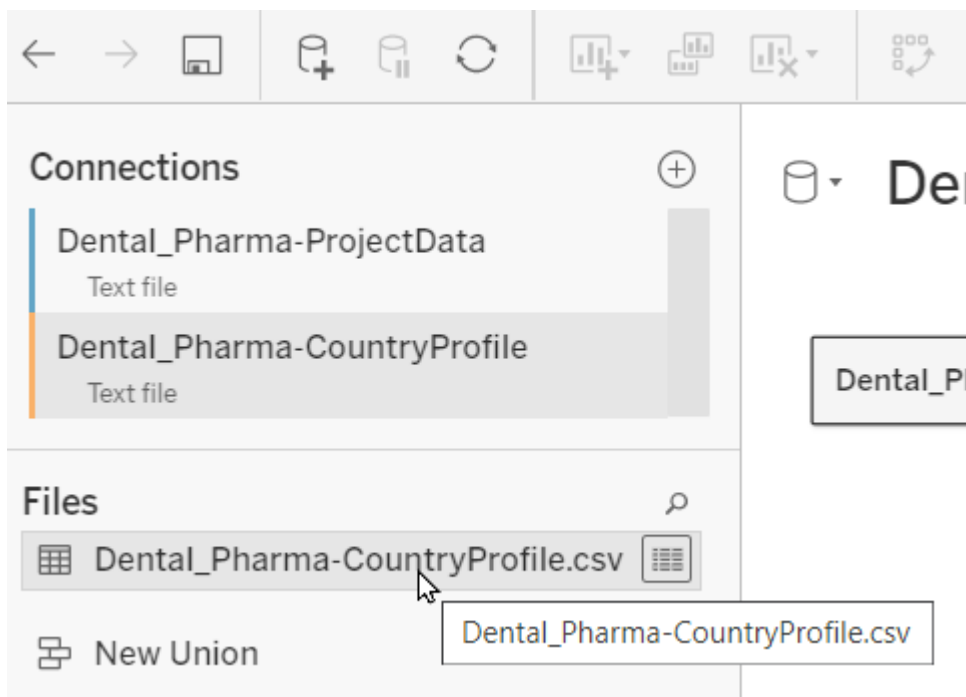
b) **Join the country profile data**

Now you can join the CountryProfile data to the ProjectData.
This will bring in the region and country type information.

Switch to the **Data Source** tab:



You can then drag and drop the **CountryProfile** .csv file over.
It will appear in the files list:



Drag the CountryProfile from the files list to the data area to
join the country profile data to the project data. Now there is a
relationship between the tables:





You can click on the boxes and rename the tables to something more friendly (it's good practice to keep things neat and meaningful!):



c) **Save the data on Tableau's servers**

You need to extract the data to save it on Tableau's servers rather than kept externally in the CSV files. To do this, you need to click on the Create Extract link:

[Create Extract](#)

Extract will include all data. ⓘ

d) **Save the project**

At this point, it is a good idea to save the project. A message box will appear when you do. Check the **Show sheets as tabs** option to ensure all tabs are shown when the dashboard is published:

Save Workbook

Name:

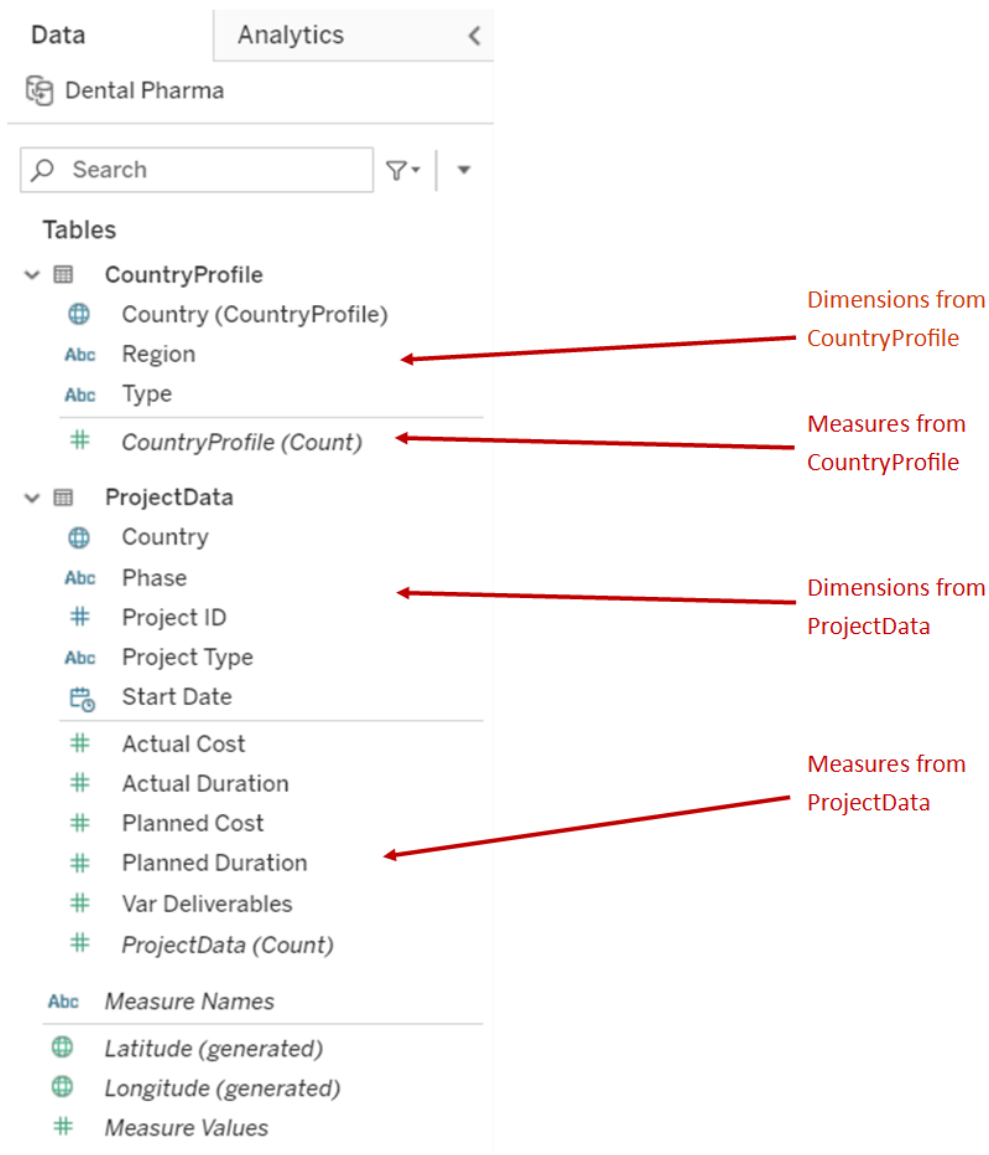
Dental Pharma

☒ Show sheets as tabs

☐ Embed password for data source

Cancel Save

Now your dashboard will contain the raw data from the CSV files. Switch to the **Sheet 1 tab** to see it:

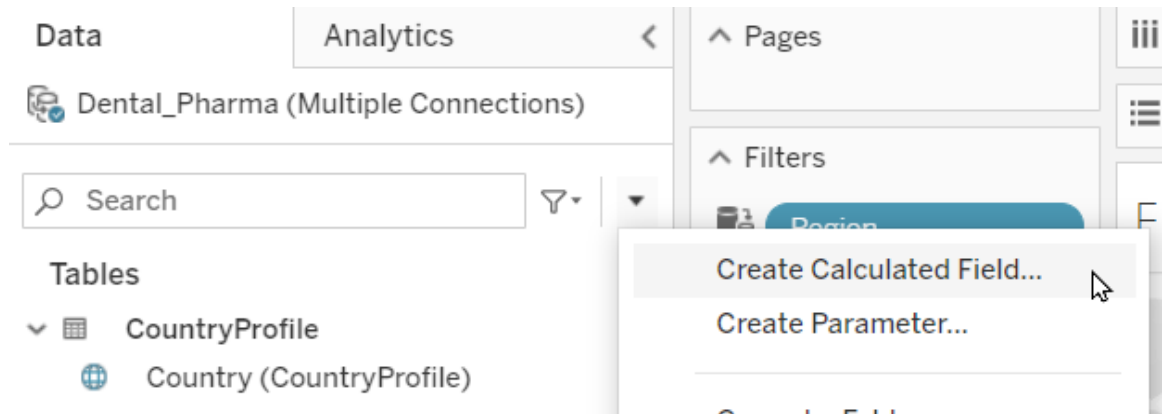


The screenshot shows the 'Data' tab in the 'Analytics' view of the Dental Pharma interface. It displays a list of tables and their dimensions. Red arrows point from text labels to specific fields in the table list.

| Table | Field | Category |
|-----------------------|--------------------------|--------------------------------|
| CountryProfile | Country (CountryProfile) | Dimensions from CountryProfile |
| | Region | Dimensions from CountryProfile |
| | Type | Dimensions from CountryProfile |
| | CountryProfile (Count) | Measures from CountryProfile |
| ProjectData | Country | Dimensions from ProjectData |
| | Phase | |
| | Project ID | |
| | Project Type | |
| | Start Date | Measures from ProjectData |
| | Actual Cost | |
| | Actual Duration | |
| | Planned Cost | |
| | Planned Duration | |
| | Var Deliverables | |
| ProjectData (Count) | | |
| Measure Names | | |
| Latitude (generated) | | |
| Longitude (generated) | | |
| Measure Values | | |

4. Create the calculated fields you need

The dashboard will require some **calculated fields** to encode the logic for the actual vs target costs and the actual vs target durations. You can create calculated fields by clicking the drop-down arrow next to the search field:



You can create calculated fields using other calculated fields, and sometimes it is useful splitting up complex calculations into multiple smaller calculated fields if they are independently useful.

Create calculated fields as follows:

a) **Calculate actual vs target costs**

Compute the percentage that projects are over cost as a calculated field. Call the new measure **Percentage Over Budget**.

b) **Compute actual vs target durations**

Compute the percentage that projects are over duration as a calculated field. Call the new measure **Percentage Over Duration**.

c) **Rename Var Deliverables**

For the percentage that projects are under-delivering on the deliverables, there is already a measure called Var Deliverables. You don't need to calculate anything. However, Var Deliverables is perhaps not the most friendly of names. Let's rename this to **Percentage Under Delivered**.

d) **Add other calculations**

Add any other calculated fields that you need for your dashboard design.

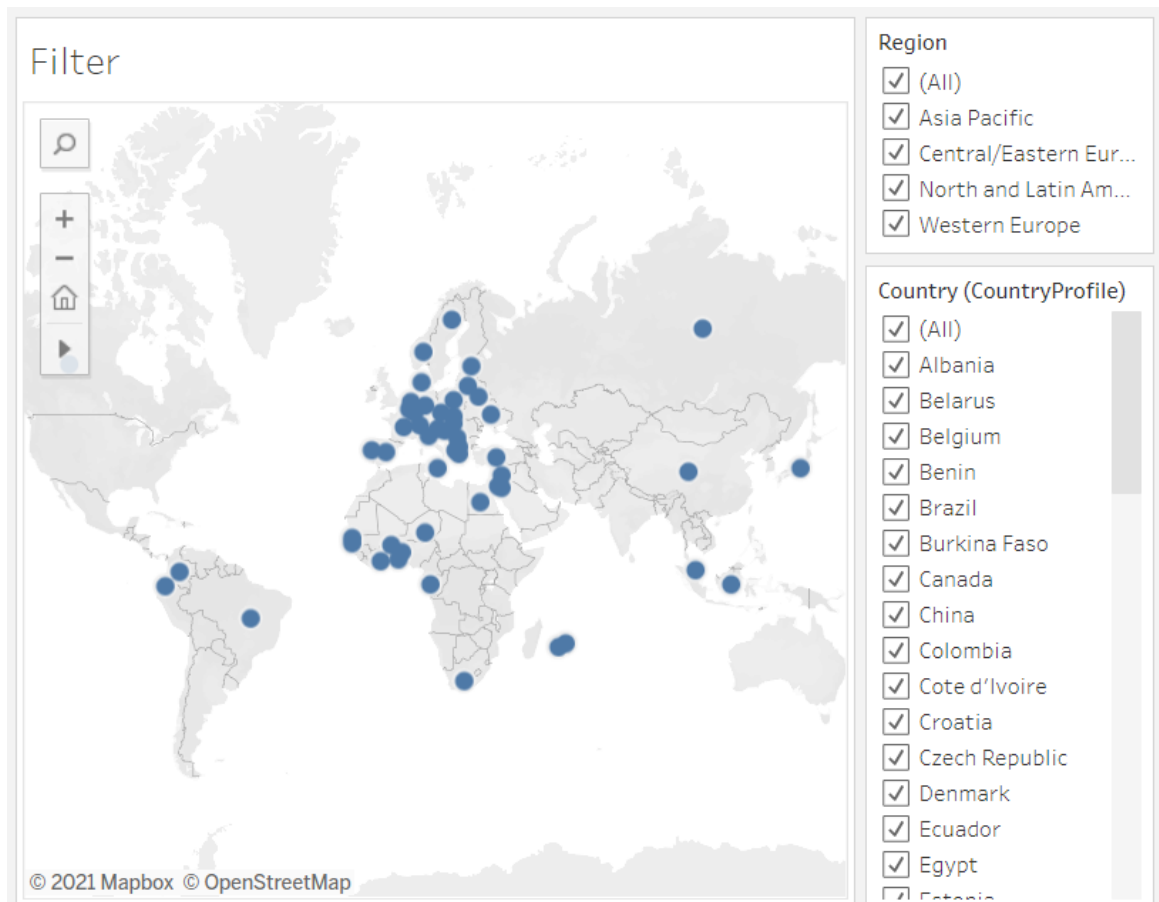
You should now have three measures that give you an indication of the project performance:

| | |
|-------|----------------------------|
| ▼ | ProjectData |
| 🌐 | Country |
| Abc | Phase |
| # | Project ID |
| Abc | Project Type |
| 📅 | Start Date |
| <hr/> | |
| # | Actual Cost |
| # | Actual Duration |
| =# | Percentage Over Budget |
| =# | Percentage Over Duration |
| # | Percentage Under Delivered |
| # | Planned Cost |
| # | Planned Duration |
| # | ProjectData (Count) |

Make sure you save the project before you move on to the next step.

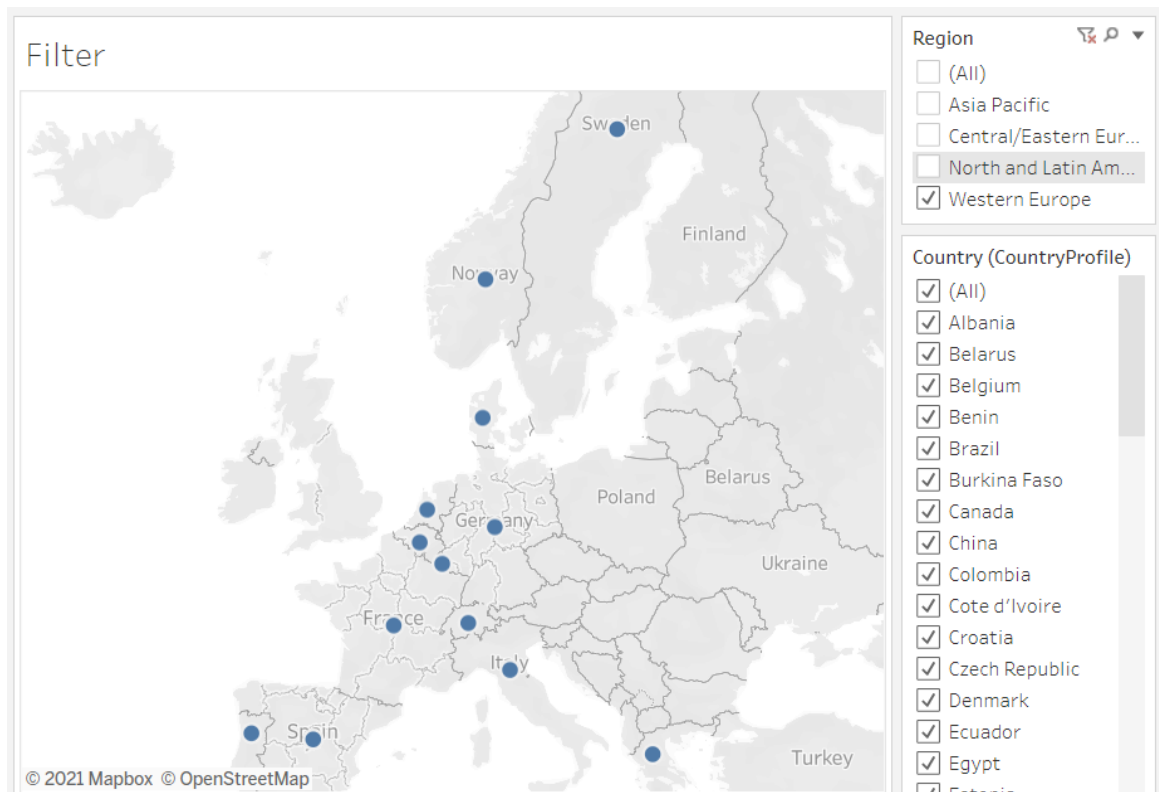
5. **Create a way for the user to identify themselves**

General managers, regional managers and country managers all use the dashboard. As each user arrives on the dashboard, we'd like them to identify themselves so they only see the data relevant to them. Because the identification is geographic, it makes sense to use a map to drive this. So your identification worksheet may look something like this:

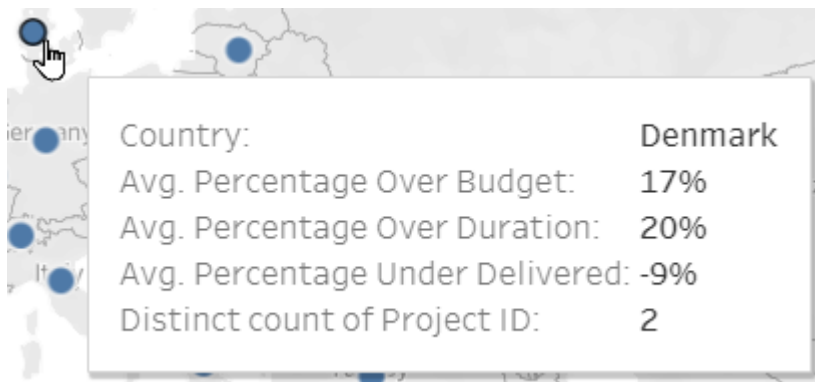


Here you can see the map with dots representing all the countries that Dental Pharma operates in and the filters on the side.

By selecting and deselecting the filters, each user can choose their area of interest. For example, here, the regional manager for Western Europe has chosen just their area of interest:



In addition, each data point can allow some interaction and provide additional information. For example, you can hover over a country to see some information:

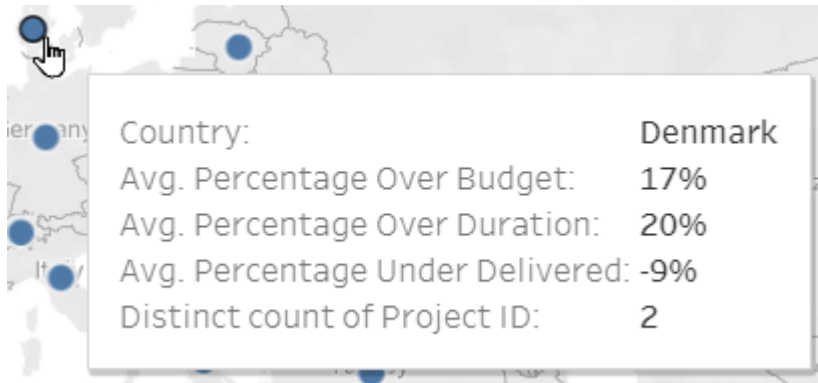


The tasks to do are:

a) **Create a map worksheet**

Create a map worksheet that uses the map/filter method described above to allow users to identify themselves as general managers, regional managers or country managers. You can just rename the existing Sheet 1 and call it Map. You can use the generated longitude and latitude on the **columns** and **rows**. Add some **marks** to get information

about the number of projects and project performance. So when you hover over a data point, you see something like this:

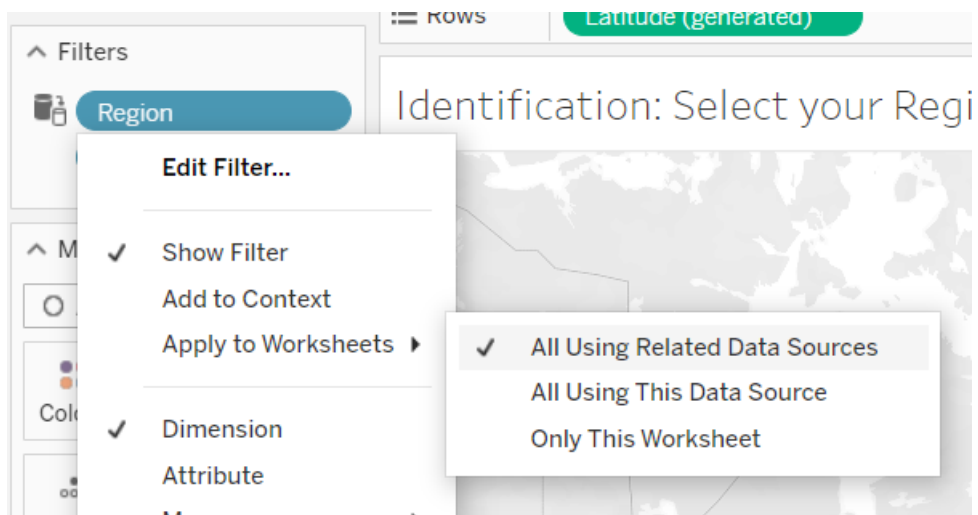


b) **Add some filters to the map**

Add some filters to the map so the user can identify themselves by selecting the regions and/or countries that they are responsible for. You will need to select the **Show Filter** option on each filter to make them visible on the right side of the page.

c) **Apply the filter**

Apply the filter you created to the *entire* dashboard to enforce the security to everything the user sees. Select Apply to Worksheets > All Using Related Data Sources:



Save the project.

6. **Create your charts and tables**

Use your designs to create charts and tables. The exact steps will



depend on the design you came up with! Remember to filter all elements by the region and country selected at the start.

Here's a reminder of the minimum you will need to do to deliver the requirements:

- A **map** showing the countries that Dental Pharma operate in.
- A **table of the projects**, showing the region, country, country type, project type, phase, date, planned and actual cost, planned and actual duration.
- A chart showing countries where the **cost has overrun**.
- A chart showing countries where the **duration has overrun**.
- A chart showing countries **under-delivering** (i.e. where the deliverables are below the target).
- A chart showing the **percentage over budget by time**.
- An attractive chart showing the **duration of projects by country and phase**.

So your tasks are:

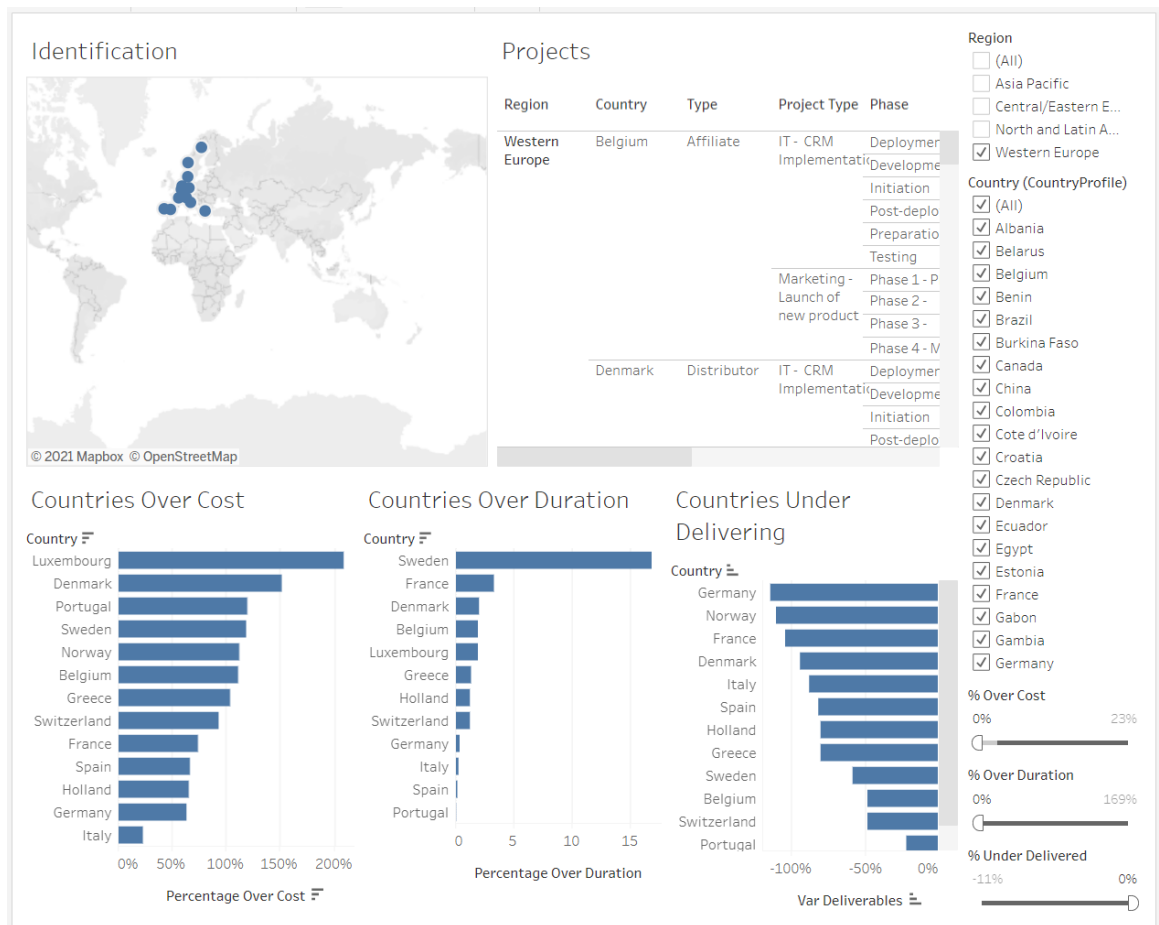
- a) Create one or more charts according to your design
- b) Create one or more maps according to your design
- c) Create one or more tables according to your design
- d) Refine the formatting of any numbers (e.g. percentages show as percentages, currency shows as currency)

Save the project.

7. **Create your dashboard**

You should now have a selection of charts and tables, each one in a separate worksheet. You can now create the dashboard.

Here's an example of what it might look like (but remember, the design is up to you!):



The tasks you need to complete are:

- Bring the charts, maps and tables together in a dashboard
- If necessary, go back and refine the worksheets so they work better in the dashboard

Save the project as you go.

8. Wrap up

Now it's time to tidy up the dashboard and do some final testing.

- Hide any tabs that you don't want to appear
- Make sure all names are meaningful and readable
- Test the dashboard as if you were a user, from end-to-end