

2023



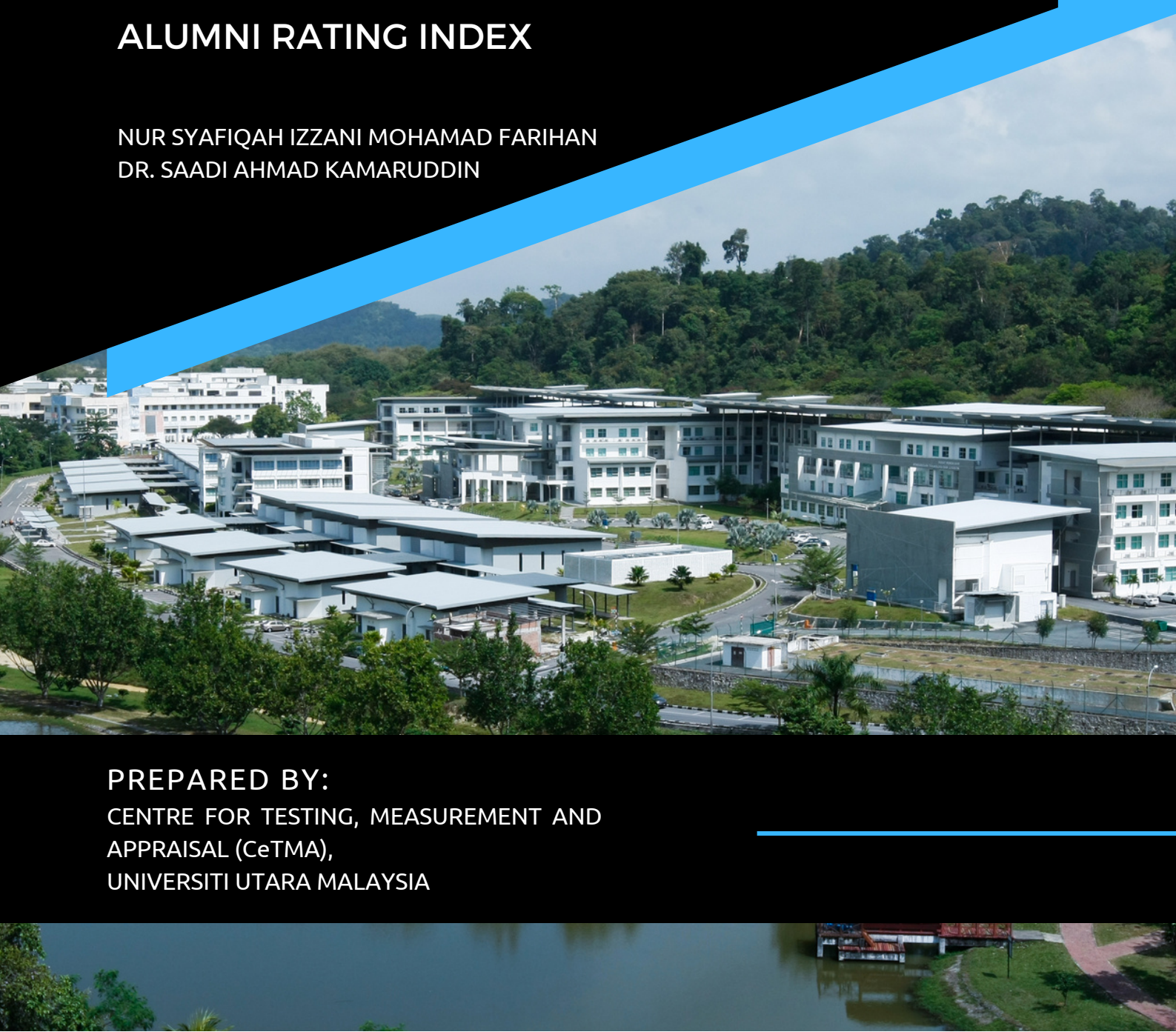
**UUM**  
Universiti Utara Malaysia

# DASHBOARD DEVELOPMENT MANUAL

ALUMNI RATING INDEX

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# INTRODUCTION

## What is a dashboard?

A dashboard is a user interface that displays important information in an easy-to-read format. Dashboards are often used to provide at-a-glance views of key performance indicators (KPIs) and other data. They can be used in a variety of contexts, such as business, finance, healthcare, and technology. Dashboards can be interactive, allowing users to drill down into the data for more detailed analysis. They can also be customized to show specific data sets or metrics that are relevant to the user.

## Function of a dashboard

The specific function of a dashboard will depend on its intended use and the specific data it is displaying. Some common functions of dashboards include:

- **Monitoring key performance indicators:** Dashboards can be used to track important metrics, such as revenue, profits, or customer satisfaction.
- **Identifying trends and patterns:** Dashboards can help users identify trends and patterns in data over time, allowing them to make more informed decisions.
- **Supporting decision-making:** Dashboards can provide the information needed to make informed decisions, such as identifying problems or opportunities for improvement.
- **Tracking progress towards goals:** Dashboards can be used to monitor progress towards goals, such as sales targets or cost savings.

# DASHBOARDS TOOLS

Dashboard development tools:

- Google Looker Studio
- Tableau Public
- Microsoft Power BI
- Google Sheets
- Microsoft Excel

What is Google Looker Studio?

Google Looker Studio, formerly known as Google Data Studio, is a business intelligence platform that provides a suite of tools for data exploration, analysis, and visualization. Looker Studio is a component of the Looker platform that enables users to create and customize dashboards, reports, and other data visualizations.

There are various software options for developing a dashboard, but we'll choose Google Looker Studio as an example because the platform is designed to be user-friendly and intuitive, making it easy for non-technical users to access and analyze data.

Google Looker Studio allows you to do the following:

- Make use of images, tables, or bar charts.
- Customize your own dashboard design.
- Work with metrics and dimensions to develop dashboards based on your objectives.
- It is possible to share them with other users.

How to access Google Looker Studio?

To access Google Looker Studio, you will need to have a Looker account and be logged in to the platform. Here are the steps you can follow to access Looker Studio:

- Go to the Looker website and click on the "Sign In" button in the top right corner.
- Enter your Looker login credentials (email address and password) and click "Sign In."

# DASHBOARD DEVELOPMENT

How to start develop a dashboard?

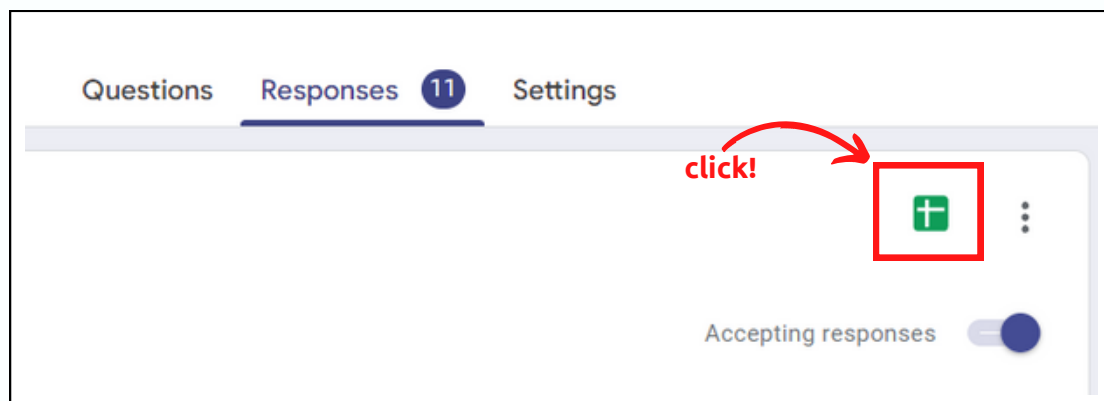
Developing a dashboard involves several steps. Here are the general steps you can follow to develop a dashboard:

## Step 1: Define the purpose and goals of the dashboard

The first step in developing a dashboard is to determine its purpose and what you want to achieve with it. This will help you identify the key performance indicators (KPIs) and metrics that should be included on the dashboard and the data sources you will need to access.

## Step 2: Gather and prepare data

Once you know what data you need, you will need to gather and prepare it for analysis. This may involve extracting data from different sources, cleaning and formatting the data, and ensuring that it is accurate and up-to-date. One of the best examples of collecting data is Google Forms survey. In Google Forms, go to the Response tab, then click to create a spreadsheet.



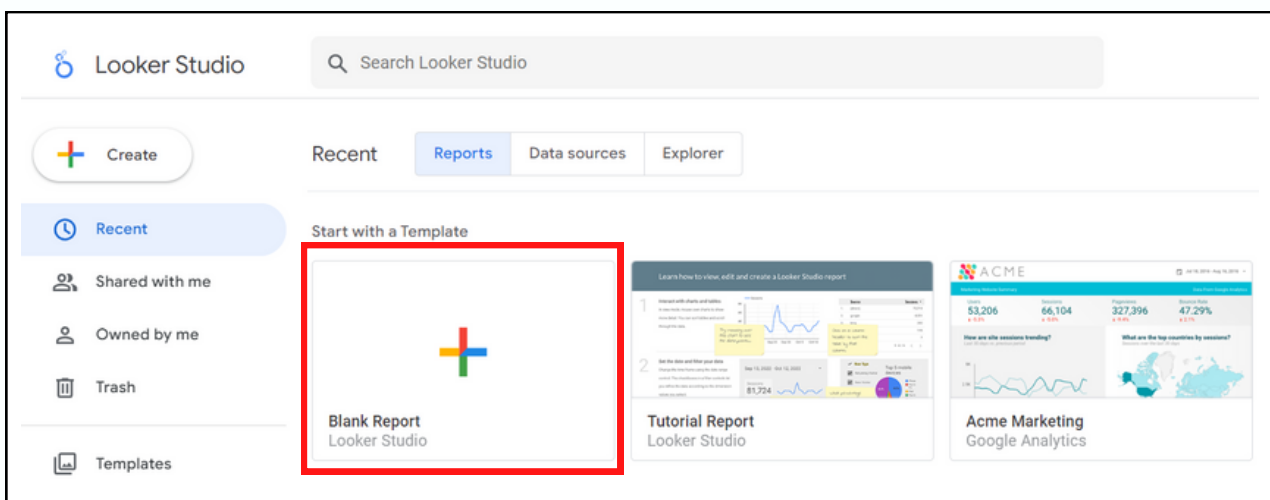
Once you have collected your data, you will need to prepare it for use in your dashboard. This may involve cleaning and formatting the data, as well as performing calculations or aggregations to create the metrics and KPIs that you want to display.

### Step 3: Design and build the dashboard

The first step in developing a dashboard is to determine its purpose and what you want to achieve with it. This will help you identify the key performance indicators (KPIs) and metrics that should be included on the dashboard and the data sources you will need to access.

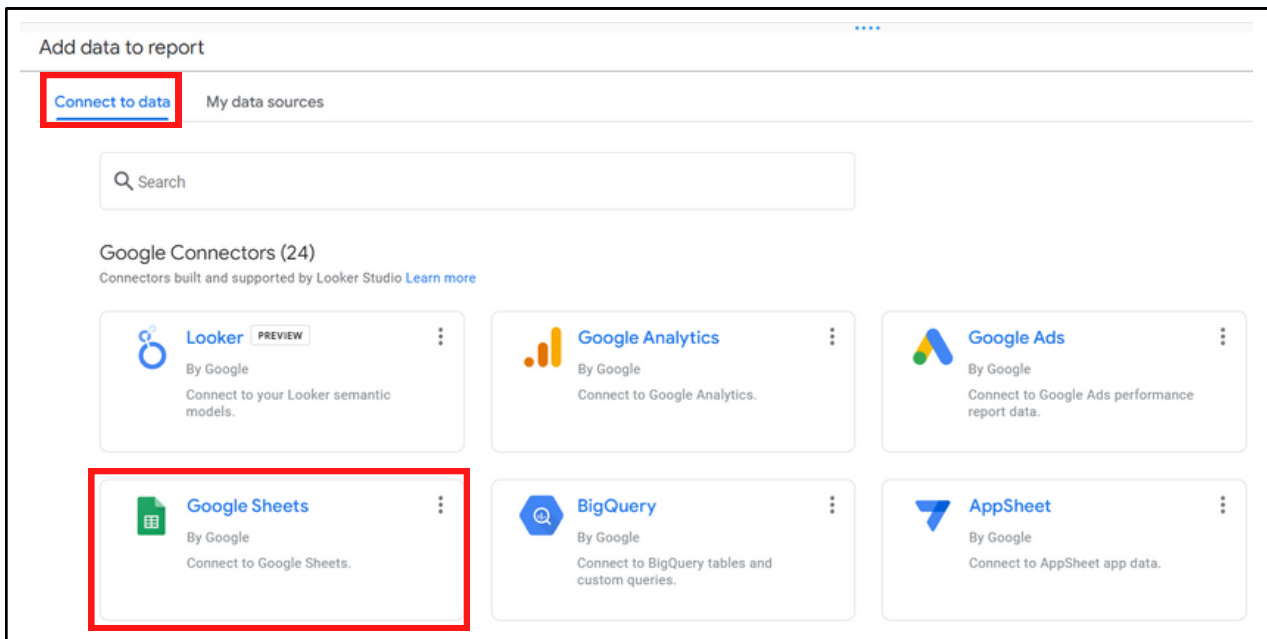
#### 1) Create a blank report

After you log in to your Google Looker Studio account, from the main menu, select "Reports" and then click "Blank Report."

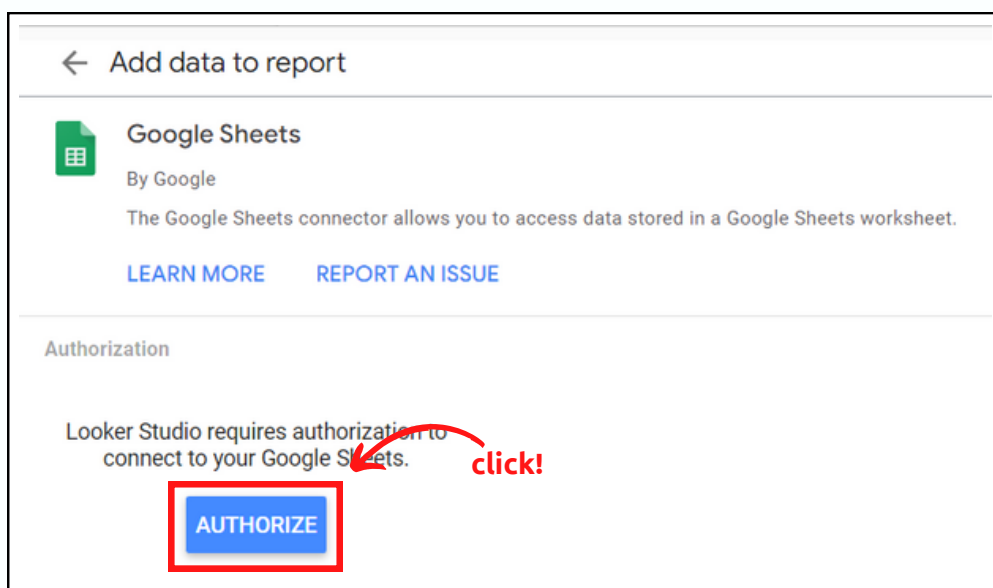


## 2) Add data to the report

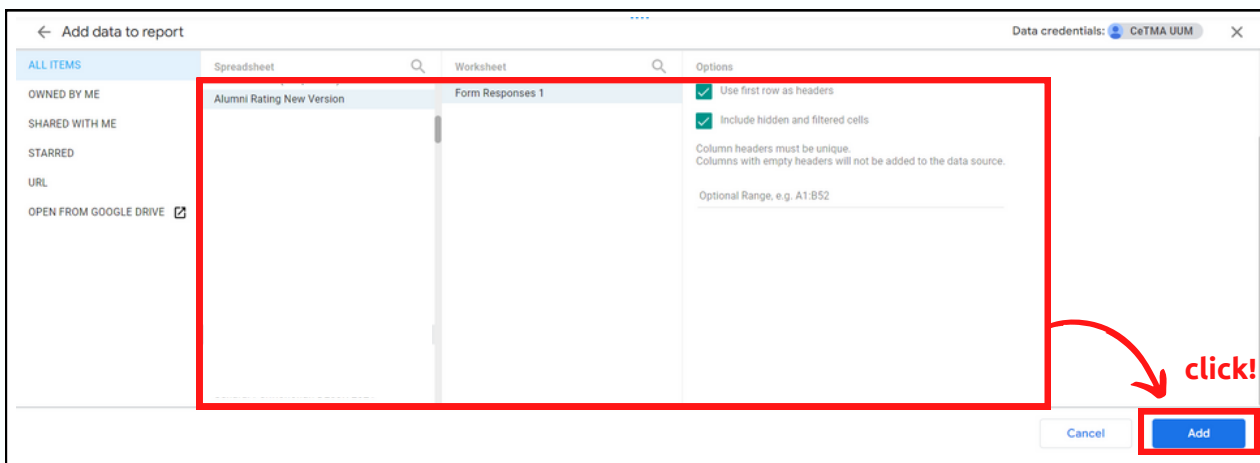
In the "Add data to report" panel, you'll be able to select the data source for the report by selecting the connector that you want to include in the report, such as a Google Sheet.



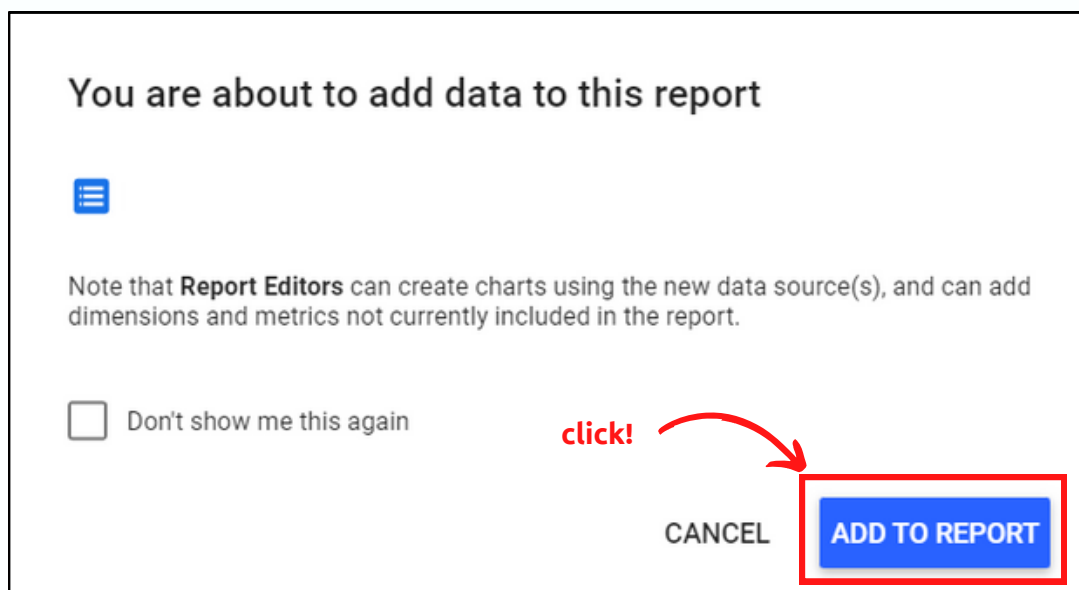
You'll then be prompted to authorize Google Sheets or whatever "connector" you've added to Looker Studio in order for it to access your data. All you have to do is click the "Authorize" button.



Then, choose the desired data source and the available options. When you're finished, click the "Add" button in the bottom right corner.



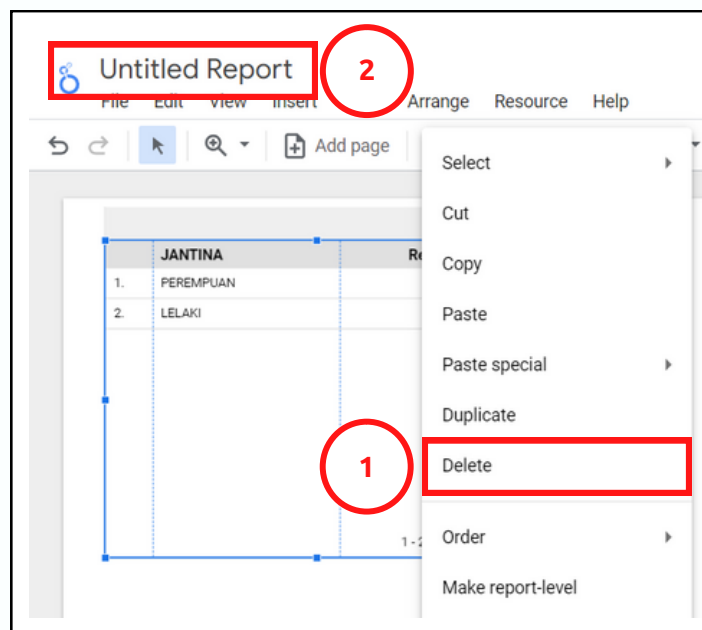
After that, you must confirm whether or not you want to include that data in the report. If you want to confirm it, simply click the "ADD TO REPORT" button.





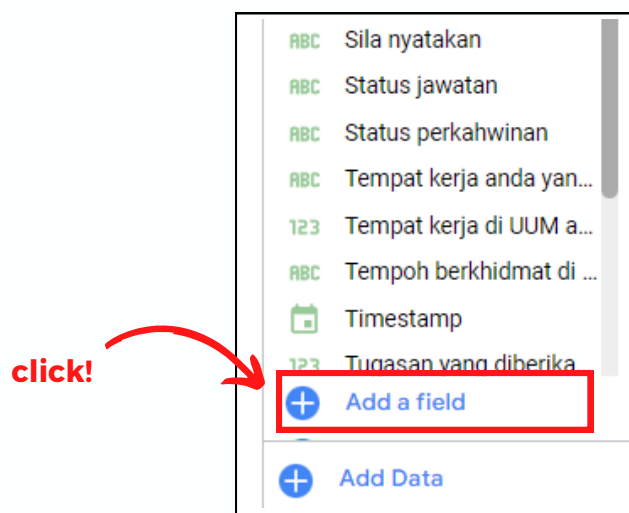
After the data is successfully connected, a table will appear. You have the option of customizing or deleting the table. You can then rename your dashboard.

- Right-click the table and choose "Delete."
- Rename your dashboard by clicking on the word "Untitled Report" in the top left and entering "Alumni Rating Dashboard."

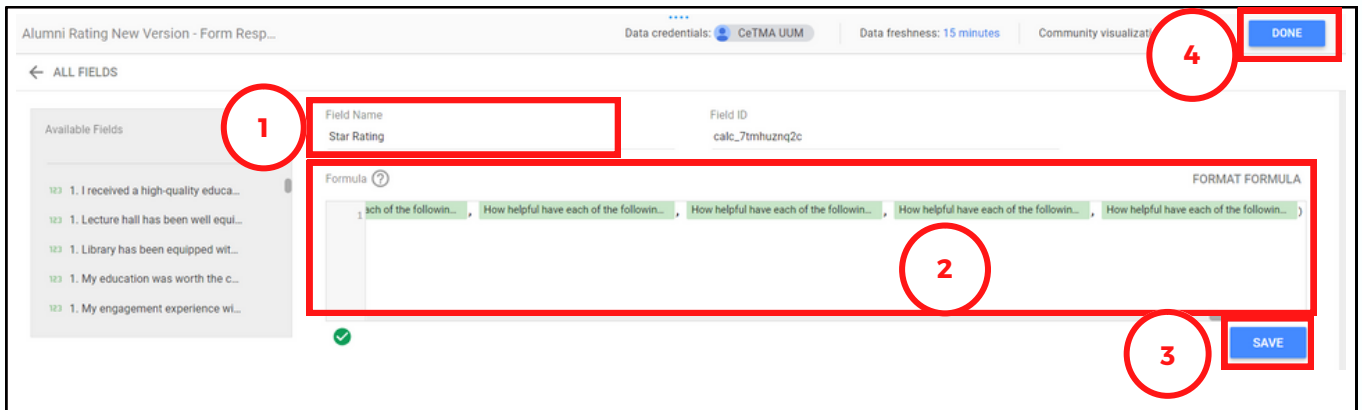


### 3) Add field to the report

Click "Add a field" at the bottom right of the data field.



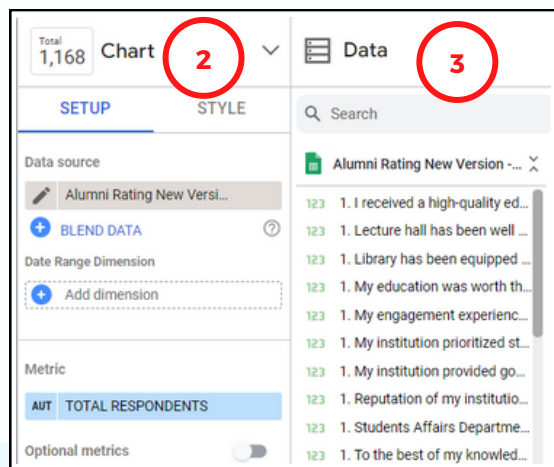
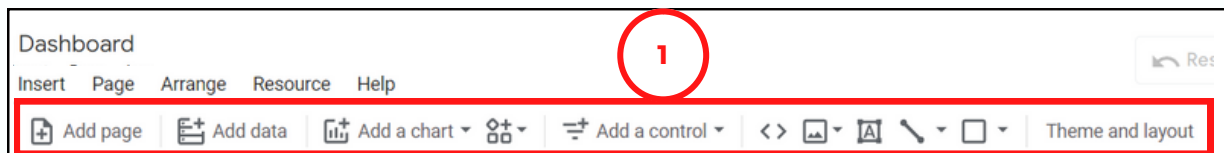
Then, enter a new name for your field and formula, select or type the field you want to include in the formula, and then click "Save" and "Done."



#### 4) Add components to the report

Dashboard components can be pages, maps, charts, controls, text, shapes, and images. Customize the visualization by dragging and dropping fields into the appropriate sections. All those components are in the toolbar at the top. You can also customize the components using the properties panel and data panel on the right side of the dashboard editor.

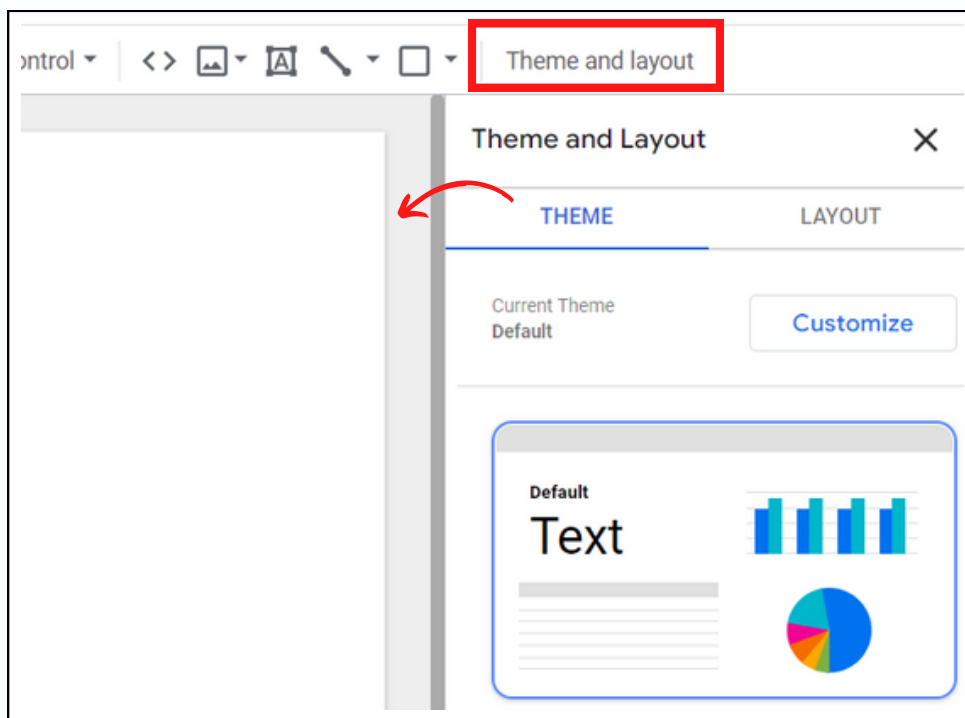
- **Toolbar:** For adding components as well as selecting a theme and layout.
- **Properties panel:** To customize the setup and style of the component.
- **Data panel:** To customize the data of the component.



## PAGE 1: MAIN PAGE

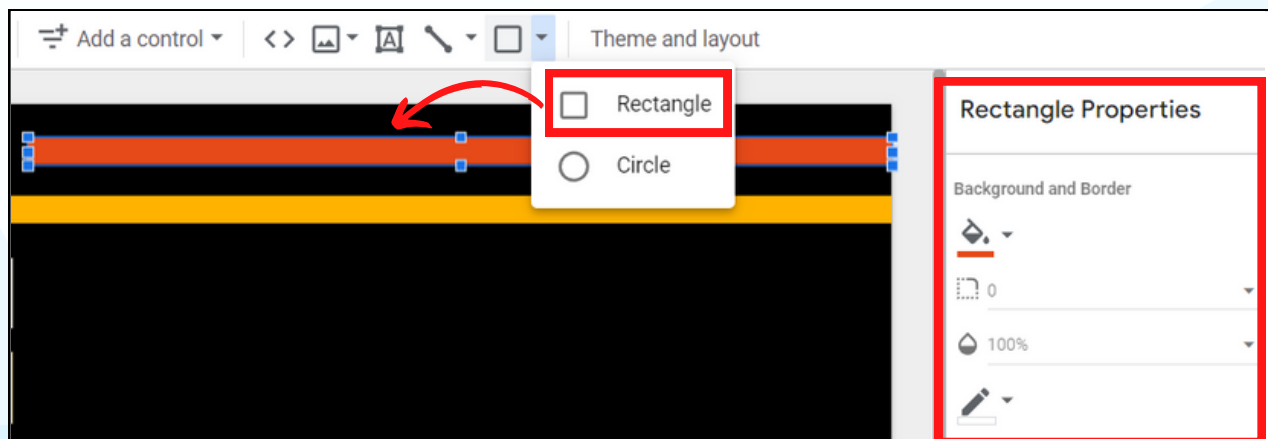
### i. Choose theme and layout

Firstly, you can select your dashboard theme and layout by using the template provided, or you can customize it yourself as desired.



### ii. Add shape

In the toolbar, select the "Shape" option and choose the shape you want, for example, a rectangle. Drag and drop it where you want. You can change the properties like shape, color, size, and location of the shape in "Rectangle Properties".



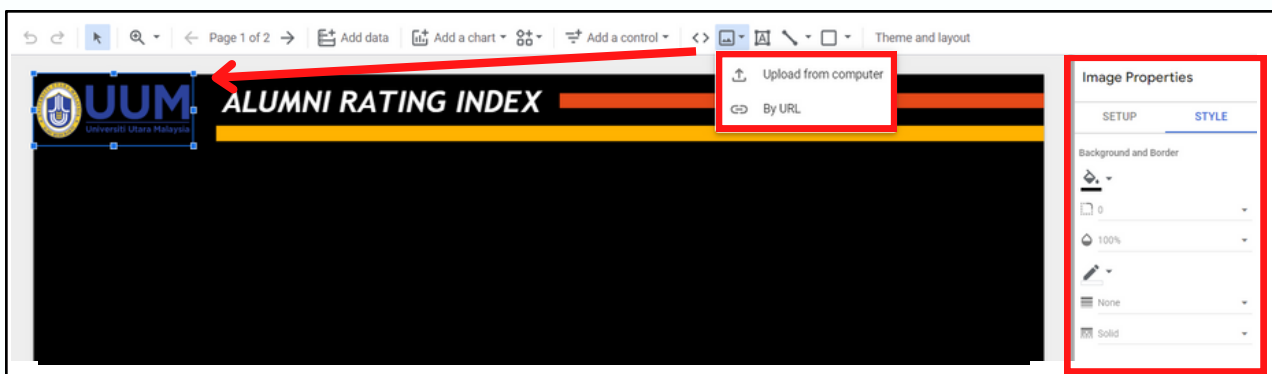
### iii. Add text

In the toolbar, select the "Text" option and place it where you want. Then, type the required text, such as your dashboard's title. In "Text Properties," you can change the font, colour, size, alignment, and location of the text.



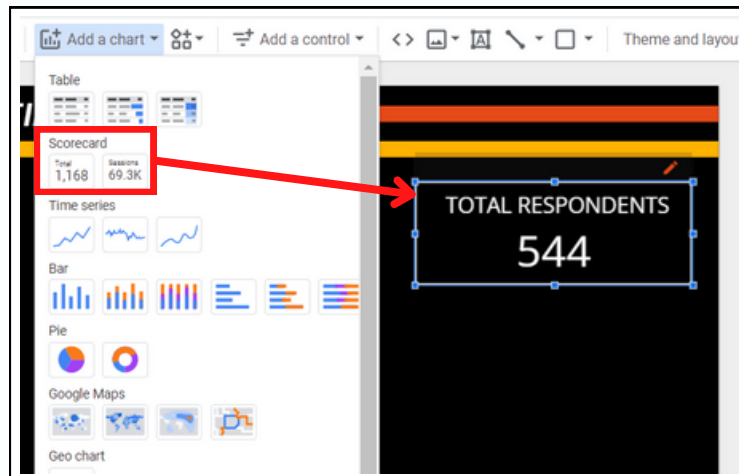
### iv. Add image

In the toolbar, select the "Shape" option and choose the shape you want, for example, a rectangle. Drag and drop it where you want. You can change the properties like shape, color, size, and location of the shape in "Rectangle Properties".

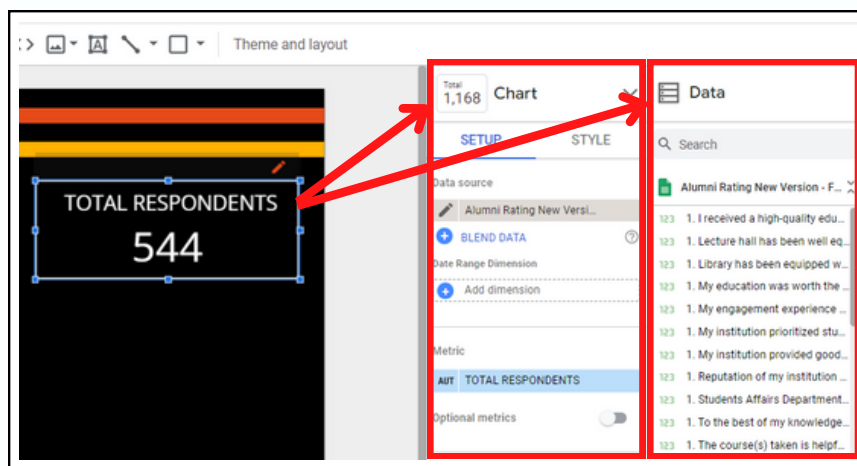


v. Add a scorecards

Click on the drop-down list on "Add a chart" in the toolbar, then select the "Scorecard" and place it where you want.

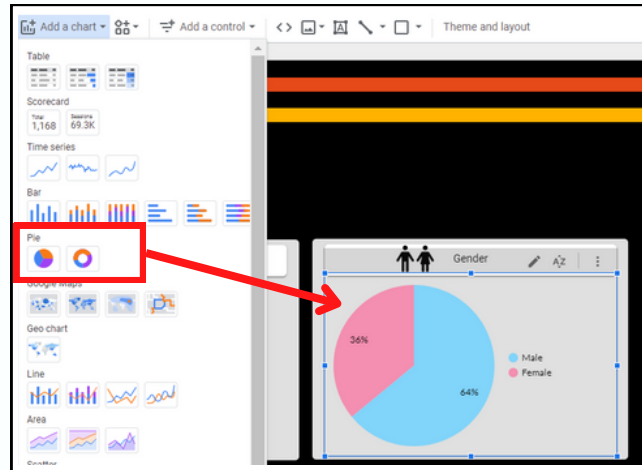


When the scorecard is selected, you can select the field you want to display in the scorecard and set the aggregation type (e.g. sum, average, etc.) in the "Data" panel. In the "Chart" panel, you can customize the appearance of the scorecard, such as font size and color, number formatting, and whether to display a trend arrow.

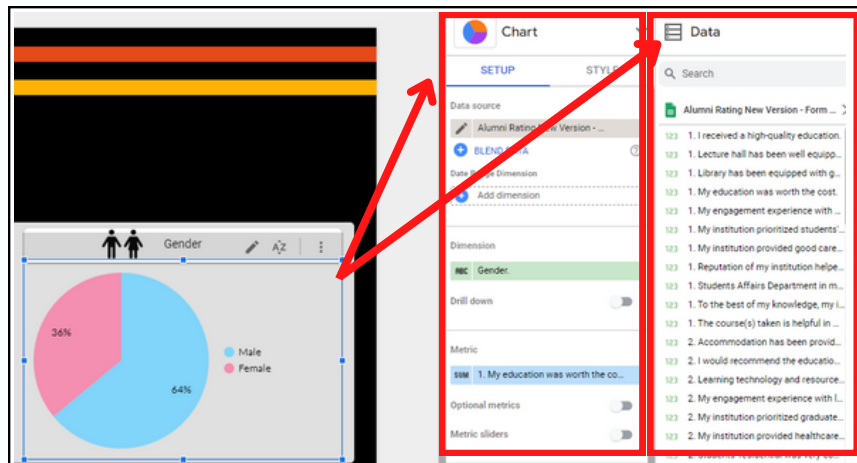


vi. Add a pie chart

Click on the drop-down list on "Add a chart" in the toolbar, then select the "Pie chart" and place it where you want.



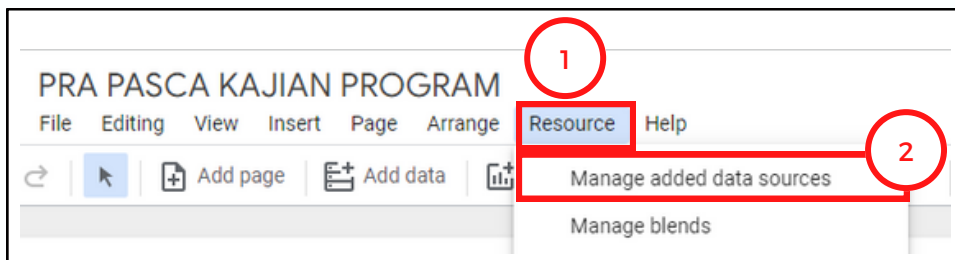
After selecting the pie chart, you can select the field you want to group by and the field you want to use for the values in the "Data" tab. You can also add additional fields to the slice or legend of the chart. In the "Chart" panel, you can customize the appearance of the pie chart, such as colors, labels, and whether to display a legend.



vii. Add a geo chart

You need to set the variable type to 'Geo' first. For map settings you can follow the steps below or refer to the youtube link: <https://youtu.be/y1usHXRoD50>.

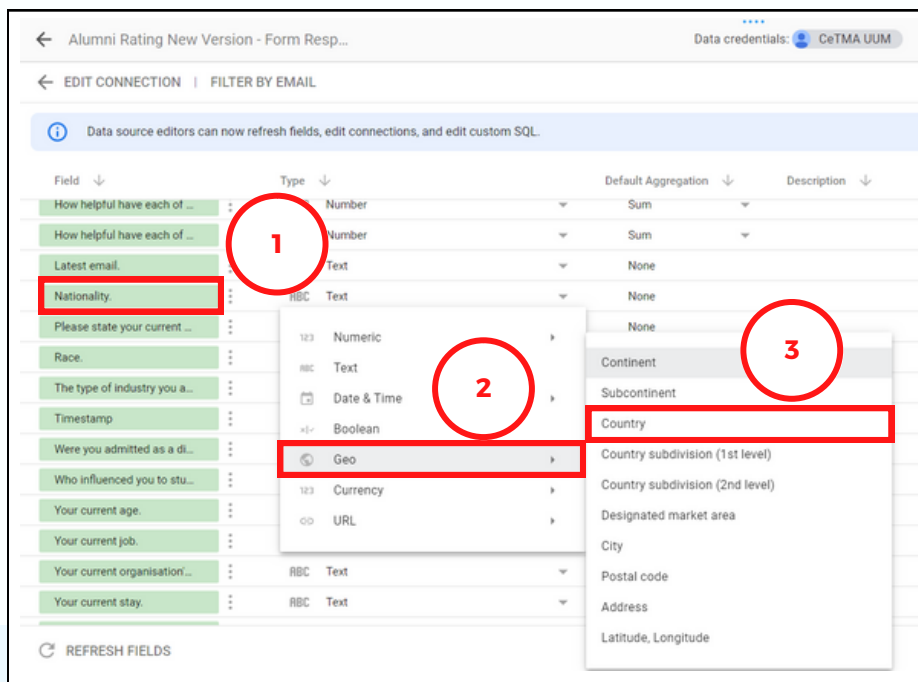
First, click on "Resource" located in the toolbar and click on "Manage added data sources". Then, you will be taken to the "Data Source" page so please click on "EDIT".



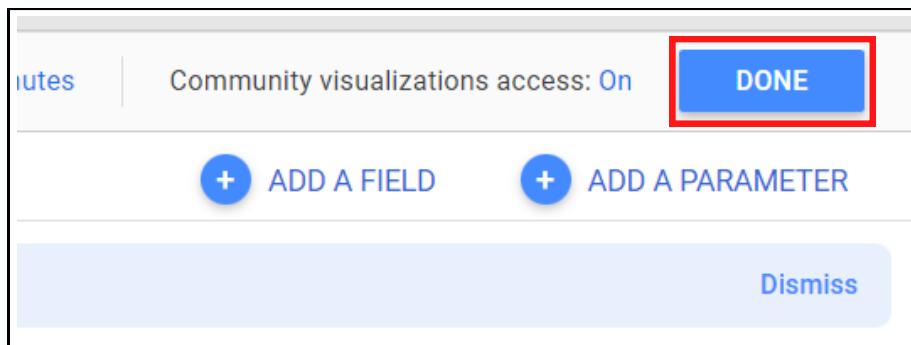
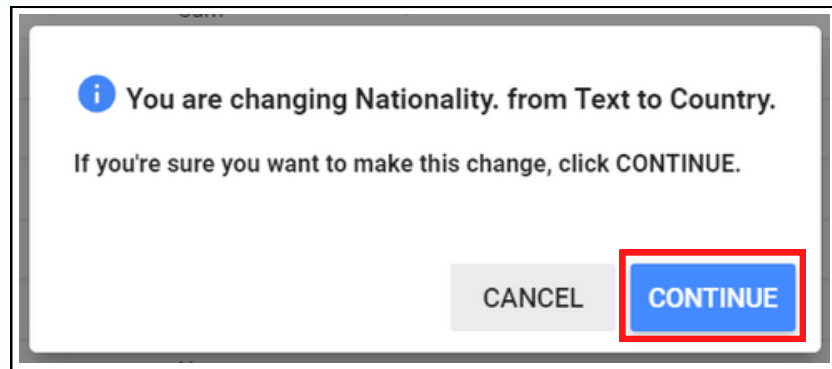
A screenshot of the "Data sources" table. The table has columns: Name, Connector Type, Type, Used in report, Status, and Actions. The second row is highlighted with a red box, and its "EDIT" button is circled in red with the number "3".

Name	Connector Type	Type	Used in report	Status	Actions
Alumni Rating (Baru) - Form responses 1	Google Sheets	Embedded	0 charts	Working	EDIT, DUPLICATE, REMOVE
Alumni Rating New Version - Form Res...	Google Sheets	Embedded	36 charts	Working	EDIT, DUPLICATE, REMOVE, MAKE REUSABLE

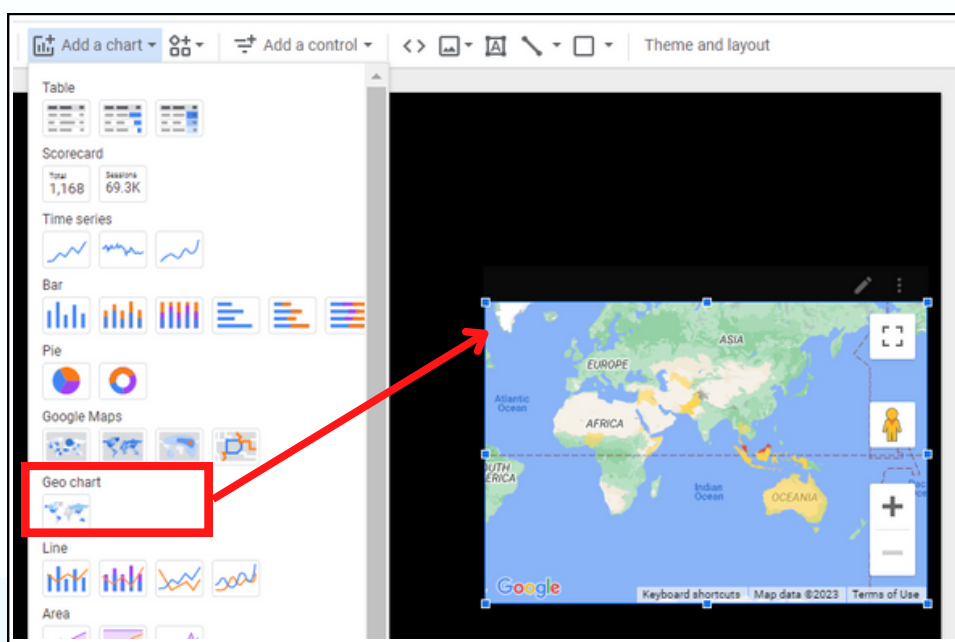
Next you need to select the variable you want to make into a map, for example, "Nationality". Click on the drop-down on the type of variable then point your cursor to "Geo" and select "Country".



Then, there will be a pop up for you to continue changing the type of variable so, you just have to click on "CONTINUE" if you want to continue and click on the "Done" button.

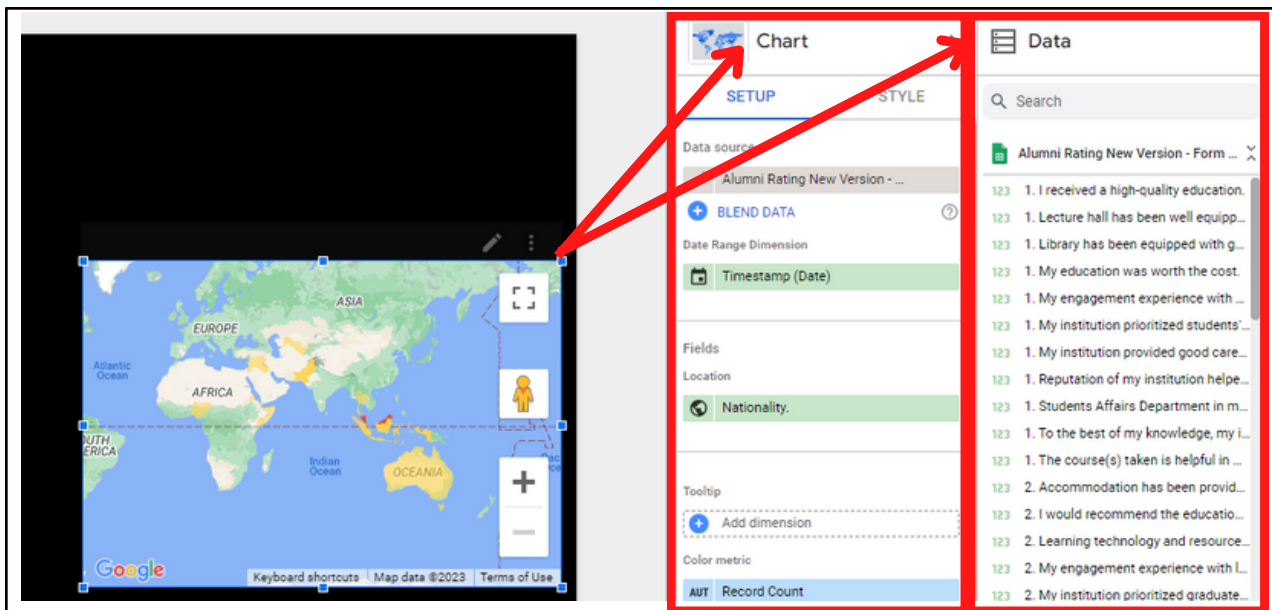


Click on the drop-down list on "Add a chart" in the toolbar, then select the "Geo chart" and place it where you want.



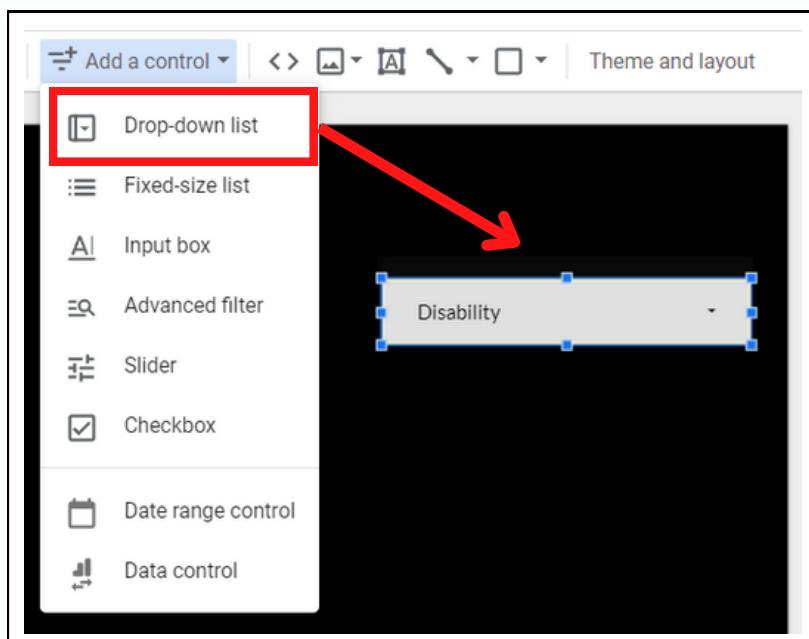


After selecting the map, you can drag the variable you changed earlier from the "Data" panel to your geo chart. In the "Chart" panel, you can design your geo map as you like.

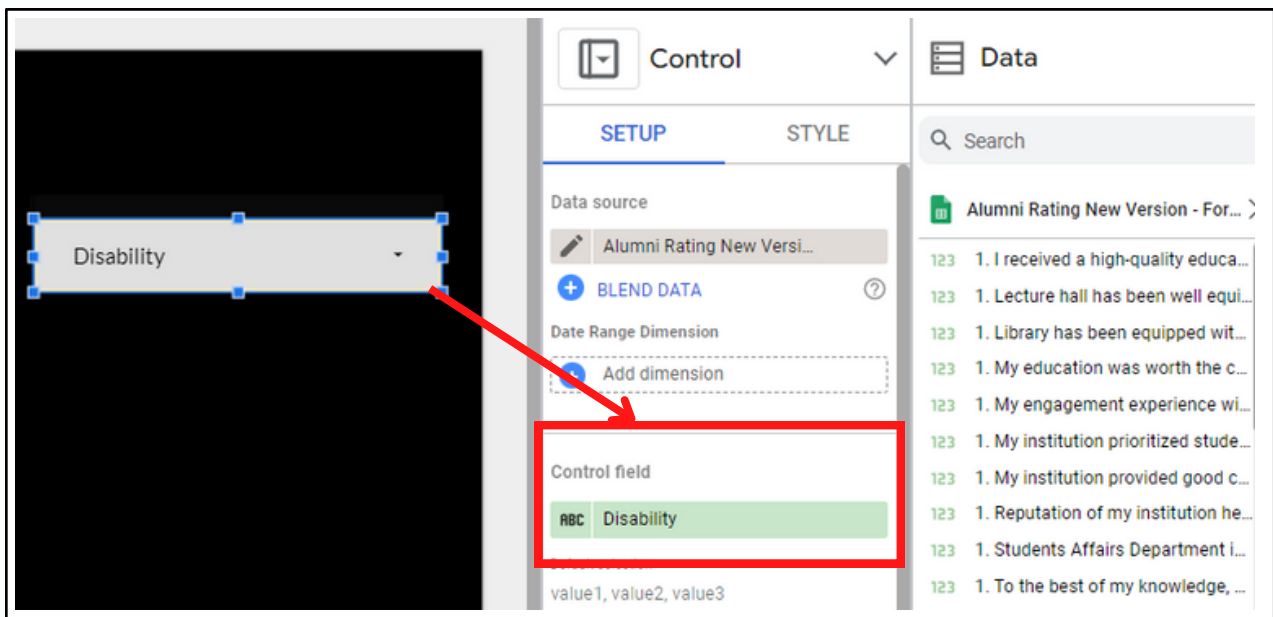


#### ix. Add a drop-down list

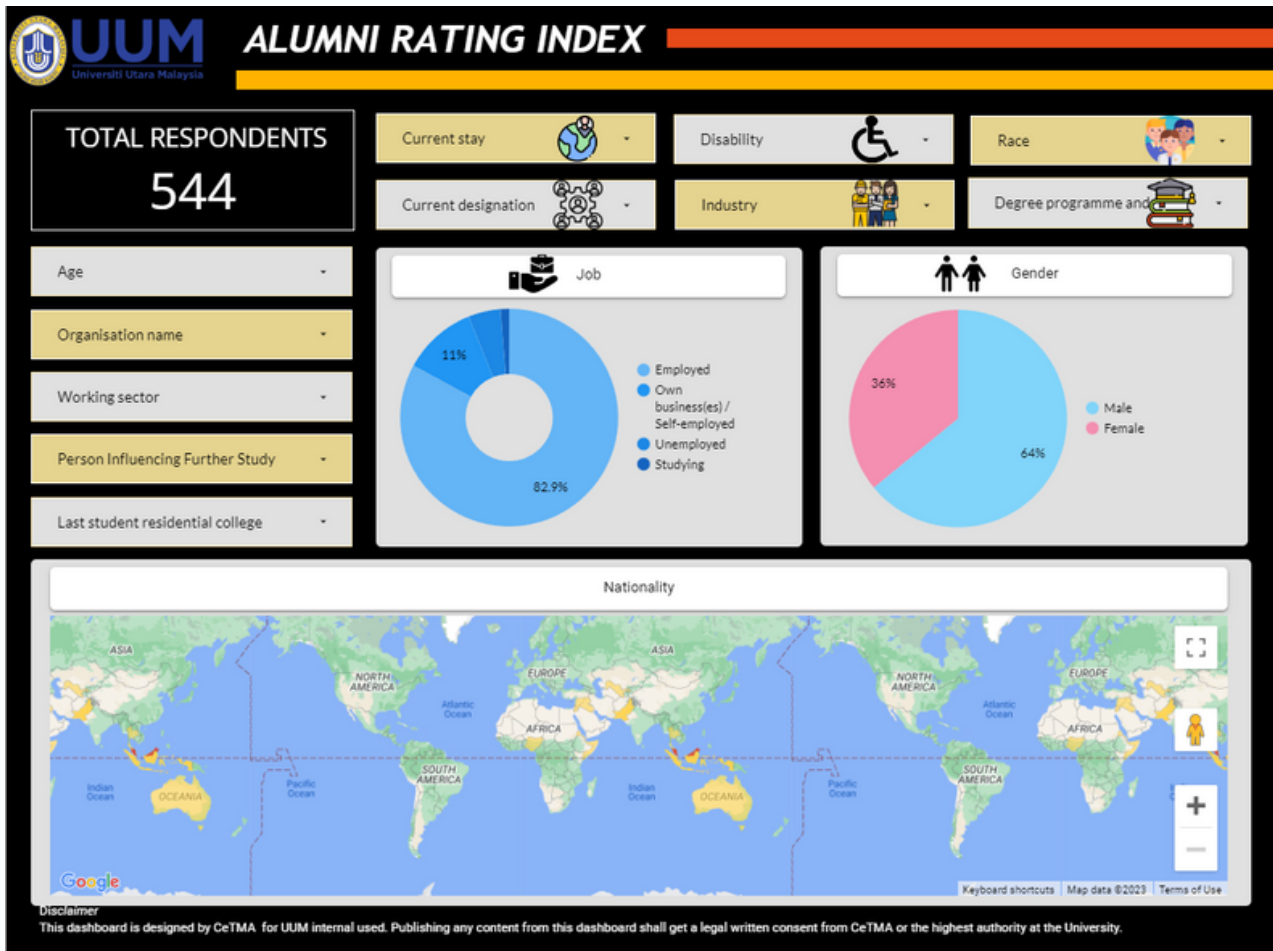
Go to the "Add a control" button on the toolbar and select the "Drop-down list" option. Drag and drop it wherever you want.



You need to select the required variable to be included in the "Control field". Next, you can customize the filter options such as the default value, the label and the list of values that will be available in the drop-down list.



So, this is what the main page of this dashboard looks like after it has been arranged and some icons have been added as decoration.

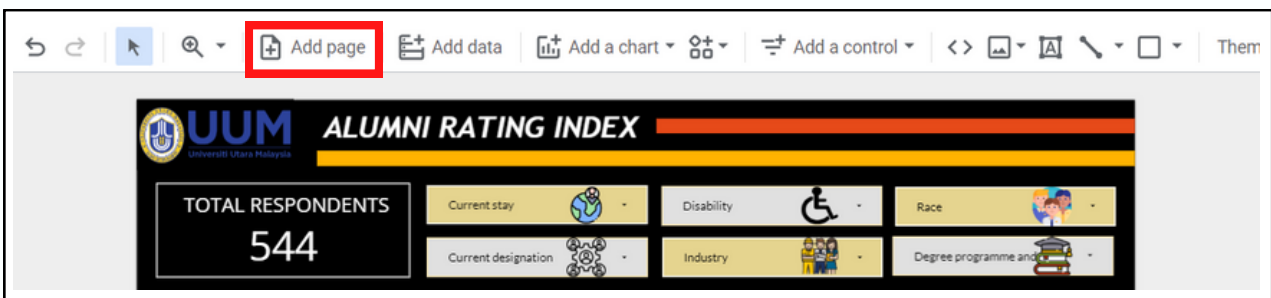


## PAGE 2: SECOND PAGE

This second page contains the same type of component as the main page, but we only need to add one new component, which is the gauge.

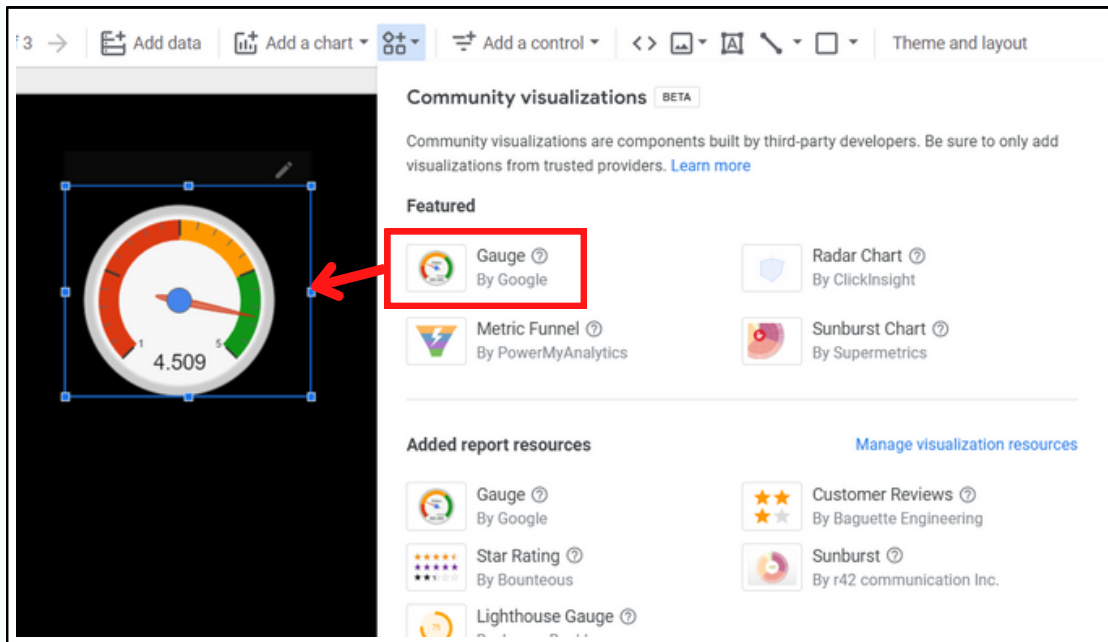
### i. Add page

To start this second page, we need to add a new page. You can click on "Add page" on the toolbar.

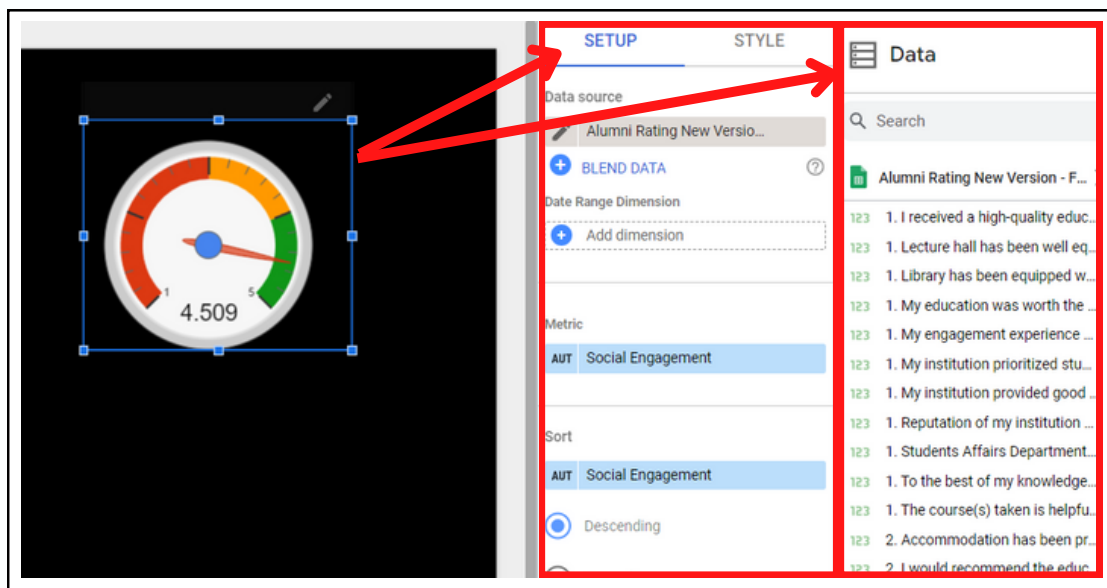


### ii. Add a gauge

Click on the drop-down list on Community visualizations and components in the toolbar, then select a gauge and put it wherever you want.

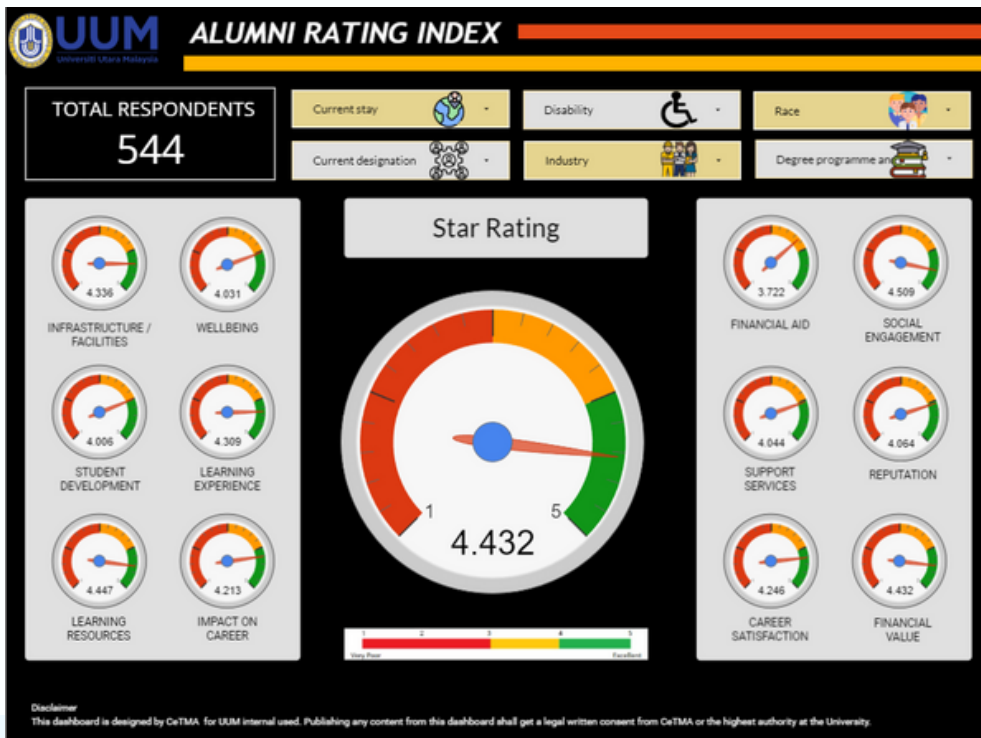
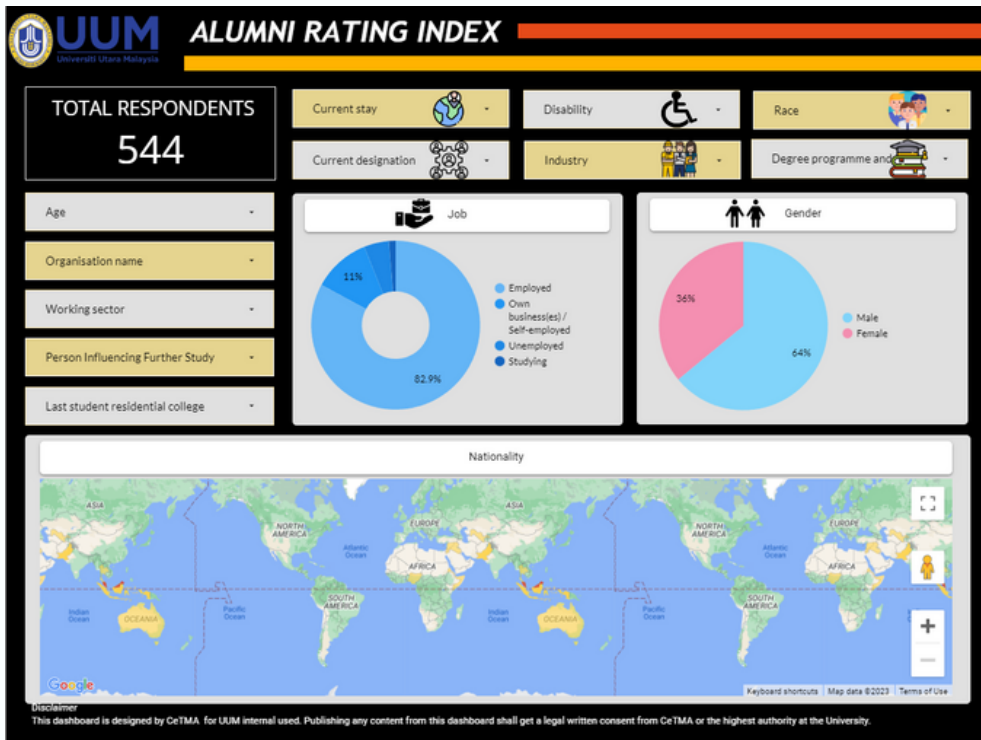


After selecting the gauge, you can configure its dimensions and metrics in the Setup section of the properties panel, as well as change its appearance in the Style section of the properties panel. You can set the colored bands to represent the ranges, such as poor, average, and good.



Finally, you can customise the layout of your dashboard components by adding interesting icons and changing the colours and patterns to your preferences.

This is what the dashboard looks like at the end, which is a dashboard visualizing the Alumni Rating Index, made with Google Looker Studio.



# REFERENCES

Chart Guide

<https://chart.guide/>

Google Looker Studio help

[https://support.google.com/looker-studio/answer/9171315?hl=en&ref\\_topic=6267740#zippy=%2Cinstructions](https://support.google.com/looker-studio/answer/9171315?hl=en&ref_topic=6267740#zippy=%2Cinstructions)