

# Storytelling with Data: MLS-1 Case Study

## Business Context:

EdX is an American massive open online course provider created by Harvard and MIT. It hosts online university-level courses in a wide range of disciplines to a worldwide student body, including some courses at no charge. The analytical team will do research in how people uses its platform.

## Objective:

As a Data Scientist, You are suppose to create a analytical report for academic year 2012-13. By Creating the following Dashboard for the director's to take further action for Next academic year.

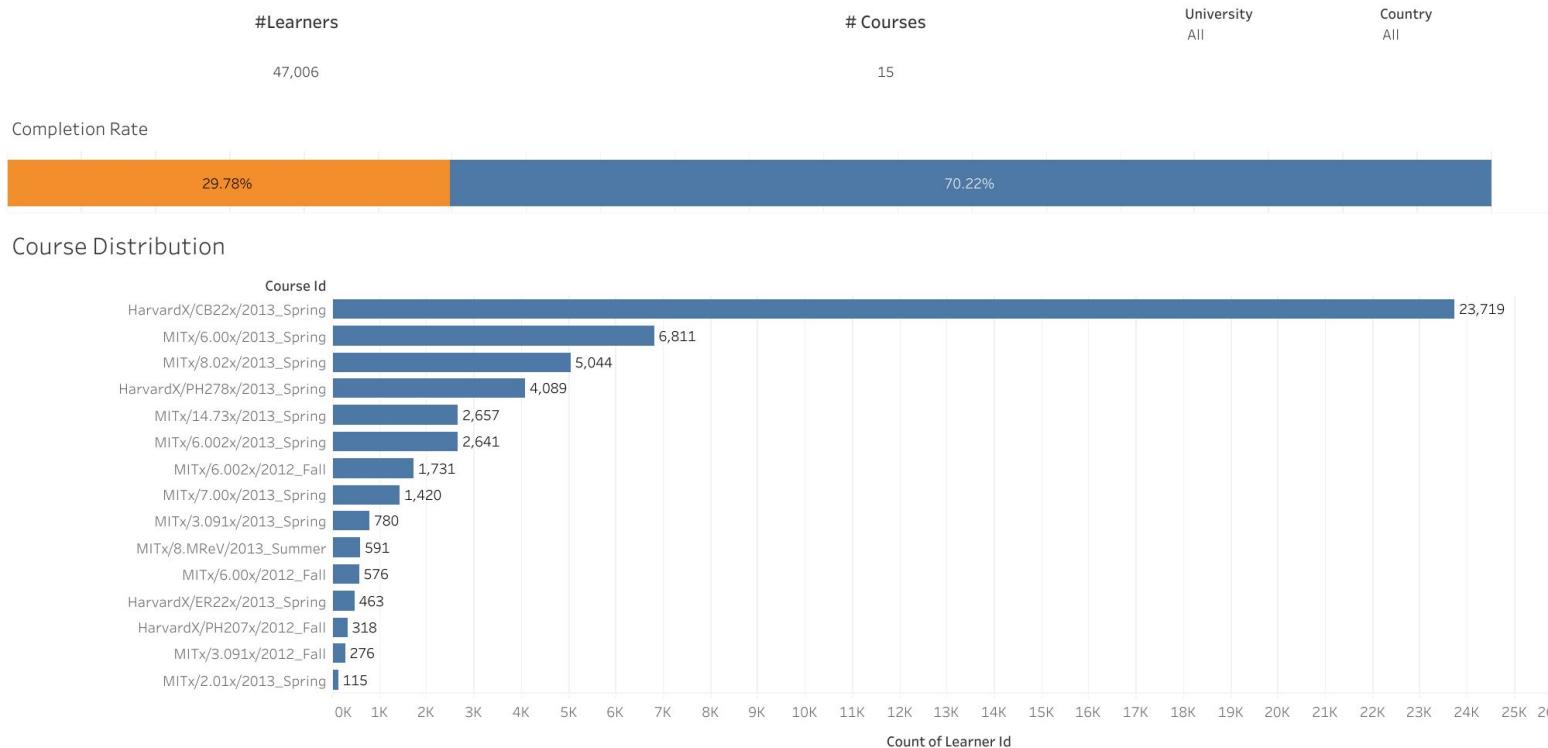
- **Edx - Academic Business Report - Summary**
- **Edx - Academic Business Report - Geographical**
- **Edx - Academic Business Report - Learners Attributes**

# DASHBOARD : 1

[Click here](#)

# Edx - Academic Business Report - Summary

## Edx - Academic Business Report - Summary



# Edx - Academic Business Report - Summary

In order to create the Summary Dashboard four sheets need to be created with the following information

- Total learners
- Number of courses offered
- Course completion status(in %)
- Course Distribution across learners

with the filters and marks respectively.

[Click here](#)

# Edx - Academic Business Report - Summary

## Sheet-1: Learner

Below Image is the expected sheet result.



# Edx - Academic Business Report - Summary

## Sheet-1: Learner

Drop the Learners ID to “text marks” and make sure options displayed in the image are selected

The screenshot shows the Tableau Public interface with the following details:

- File Menu:** File, Data, Worksheet, Dashboard, Story, Analysis, Map, Format, Window, Help.
- Data Source:** MLS\_week-1, edx\_batch\_2013.
- Tables:** Age (bin), Certification Id, Certified, Country, Course Id, Course Long Title, Course Short Title, Gender, Grade (bin), Incomplete Flag, last event DI, last\_date\_DI, Learner Id, Learner Qualification, start time DI, Measure Names, Age, Calculation1, Completion Rate, Grade.
- Filters:** University, Country.
- Marks:** Automatic, Color, Size, Text.
- Context Menu (highlighted by a red box):** The menu is open over a measure named "# Learners". The "Measure (Count (Distinct))" option is selected. Sub-options shown are Minimum, Maximum, Count, and Count (Distinct).
- Dashboard:** Shows a single card with the value 47,006.
- Bottom Navigation:** Data Source, Summary, Add Table Calculation..., Learners, Courses, Completion, Course Distribution, Geo Distribution, Age\_distribution, qualification, gisandbox.

# Edx - Academic Business Report - Summary

**Step-2:** Below image shows the option for the title, Hit-on to Edit title to align the text according to your need

The screenshot shows the Tableau desktop application. On the left, there's a 'Search' bar and a 'Tables' section containing 'University', 'Country', 'Course Id', 'Course Long Title', 'Course Short Title', and 'Marks'. Under 'Filters', 'University' and 'Country' are selected. In the center, a chart titled '#Learners' is displayed. A context menu is open over the chart area, with 'Edit Title...' highlighted in blue. Other options in the menu include 'Reset Title', 'Hide Title', and 'Format Title...'. The overall interface is light-colored with blue highlights for selected items.

**Step-3:** After you click on Edit titles you will be able to see the image as shown below to align your title.

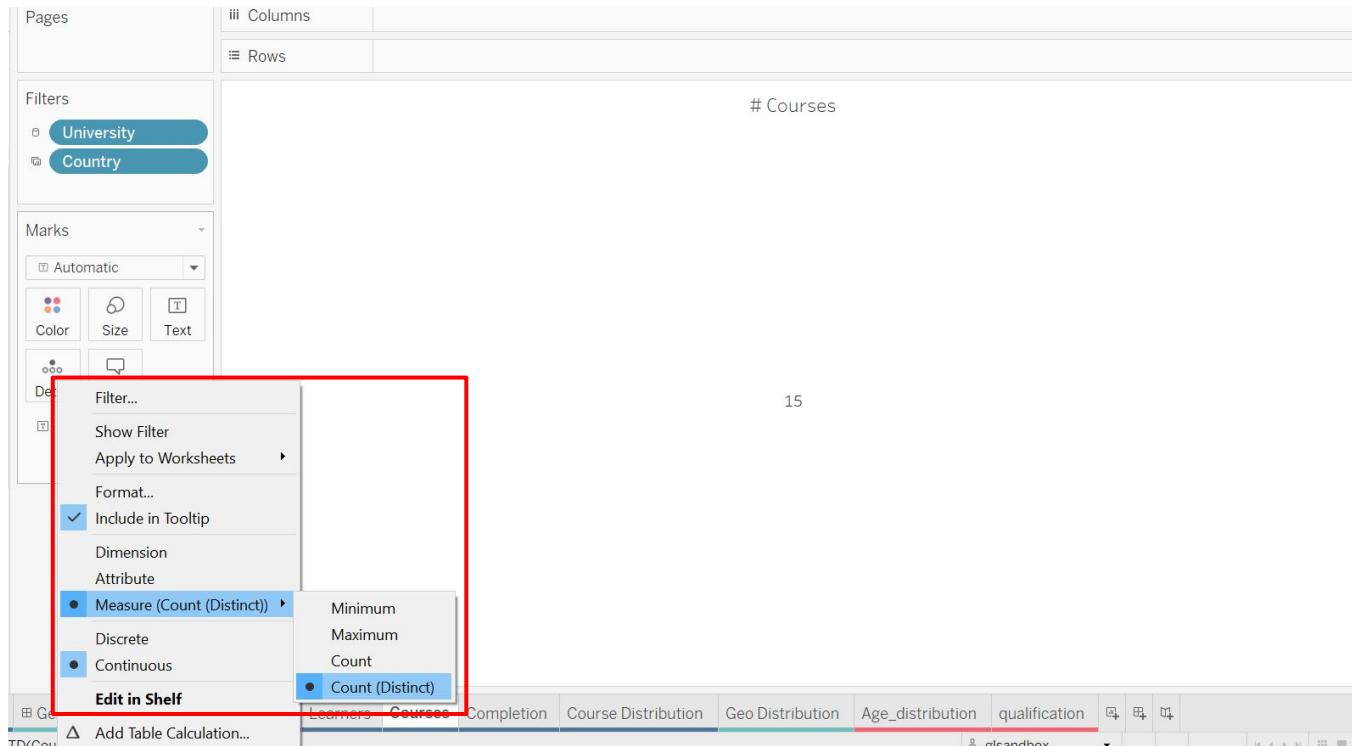


**Note:** Let's add the filter command after creating other sheets

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## Sheet-2: Courses

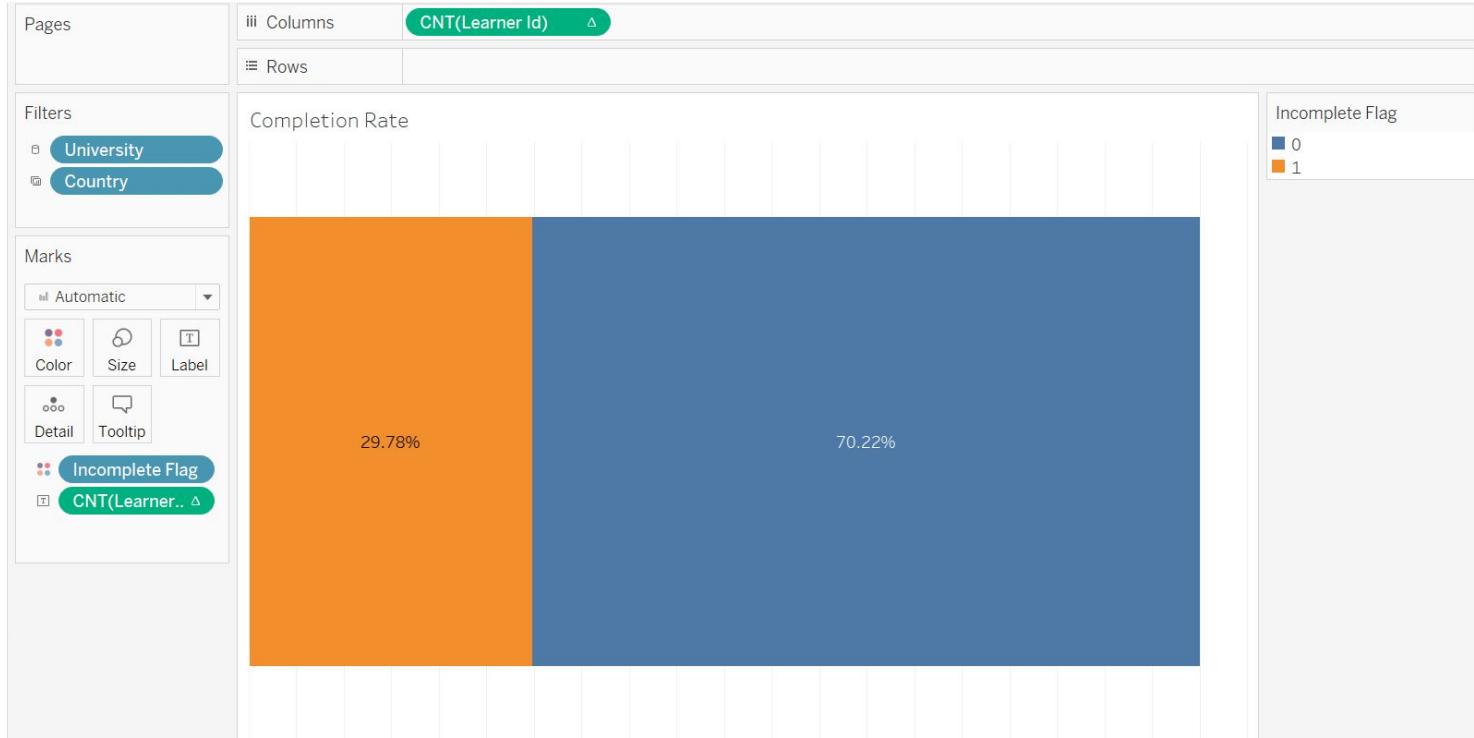
In similar way create a sheet for the course as well with the following options are checked as shown in image



# Edx - Academic Business Report - Summary

## Sheet-3: Completion Rate

Below Image is the expected sheet result. It's a stacked bar chart which shows the percentage difference between the completed and incomplete flag with the couple of filters to it.



# Edx - Academic Business Report - Summary

**Step-1:** Add the “Learner Id” to the columns and the Incomplete Flag to marks section. Make sure you have all the attributes selected as shown in the image.

The screenshot shows the Tableau Data Prep interface with the following details:

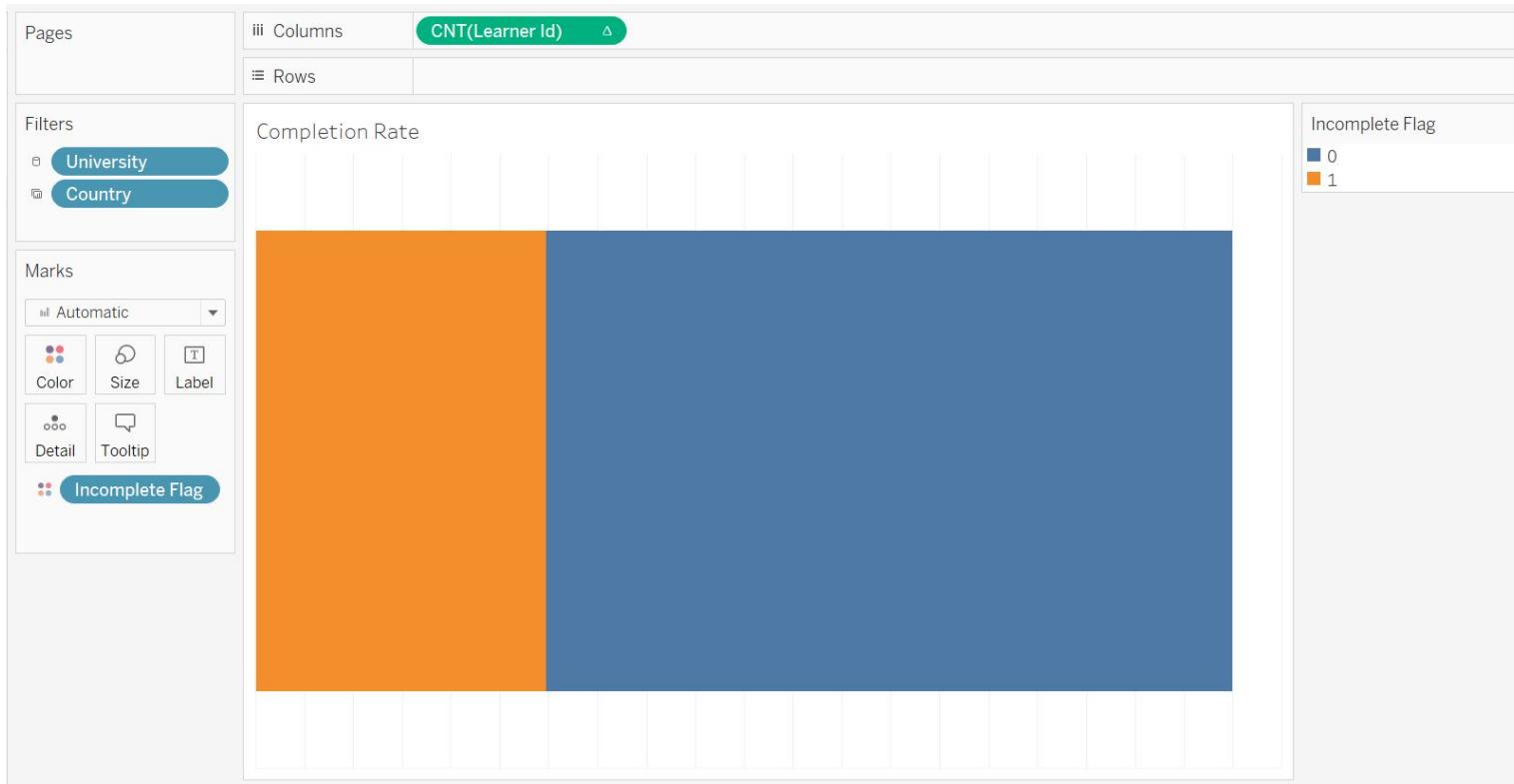
- Pages:** Completion Rate
- Filters:** University, Country
- Marks:** Automatic, Color, Label, Detail, Tooltip
- Columns:** CNT(Learner Id)

A context menu is open for the 'CNT(Learner Id)' column, with the following options:

- Filter...
- Show Filter
- Format...
- Show Header
- Include in Tooltip
- Dimension
- Attribute
- Measure (Count)
- Discrete
- Continuous
- Edit in Shelf
- Compute Using
- Edit Table Calculation...
- Clear Table Calculation
- Quick Table Calculation
  - Running Total
  - Difference
  - Percent Difference
  - Percent of Total
  - Rank
  - Percentile
  - Moving Average
  - YTD Total
  - Compound Growth Rate
- Remove

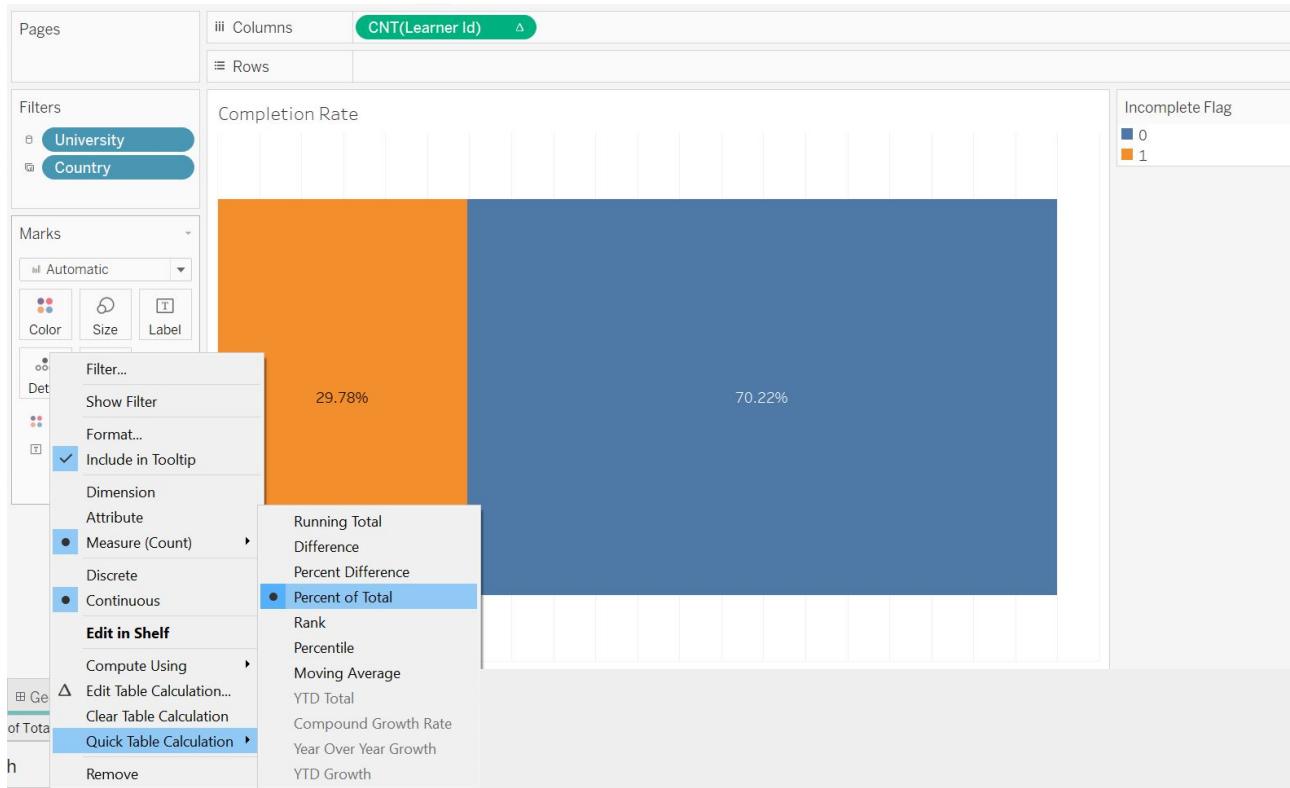
# Edx - Academic Business Report - Summary

Step-2: Then “Incomplete Flag” to the marks section as shown below



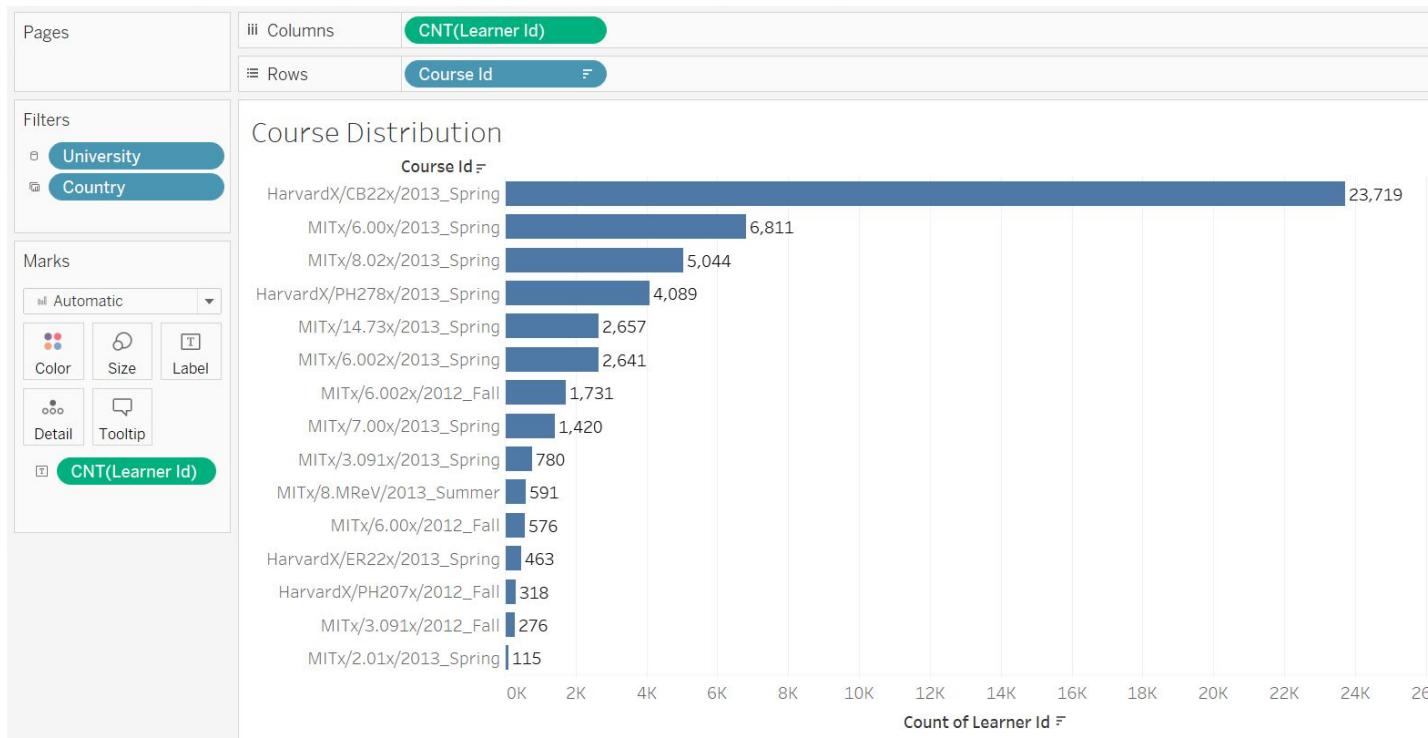
# Edx - Academic Business Report - Summary

**Step-3:** Then “Learner Id” to the marks section. Make sure you have all the attributes selected as shown in the image in order to Display in percentage.



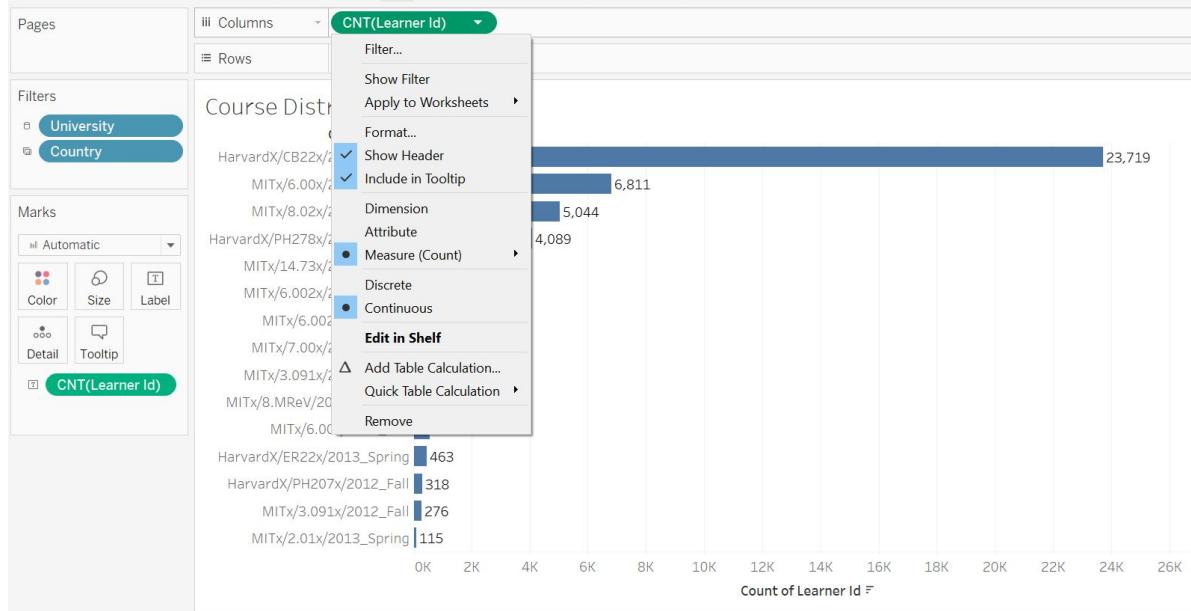
## Sheet-4: Course Distribution

Below Image is the expected sheet result. It's the distribution of the learners among the course with couple of filters & marks in it.



# Edx - Academic Business Report - Summary

**Note:** Make sure the attributes are selected as shown in below image for Learner Id



## Adding Filters:

### Filter-1 : University

**Step-1:** Use the below formula in calculated Field to create the Field “University”. This field helps to segregate the data based on universities

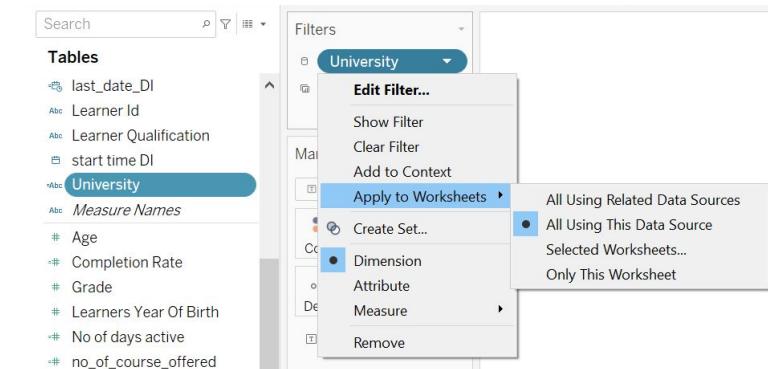
IF CONTAINS([Course Id],"Harvard") THEN "Harvard"

ELSEIF CONTAINS([Course Id],"MIT") THEN "MIT"

ELSE "Others"

END

**Step-2:** Drag and Drop **University** from the Tables field drop it to **Filter** and make sure below options are enabled.



Step-3: Drag and Drop **Country** from the Tables field drop it to **Filter** and make sure below options are enabled.

The screenshot shows a data visualization interface with a 'Tables' pane on the left and a main workspace on the right.

**Tables Pane:**

- Search bar
- Tables section:
  - # Certified
  - Country (highlighted with a blue background)
  - Course Id
  - Course Long Title
  - Course Short Title
  - Gender
  - Grade (bin)
  - Incomplete Flag
  - last event DI
  - last\_date\_DI
  - Learner Id
  - Learner Qualification
  - start time DI
  - =Abc University
  - Abc Measure Names

**Main Workspace:**

Filters panel:

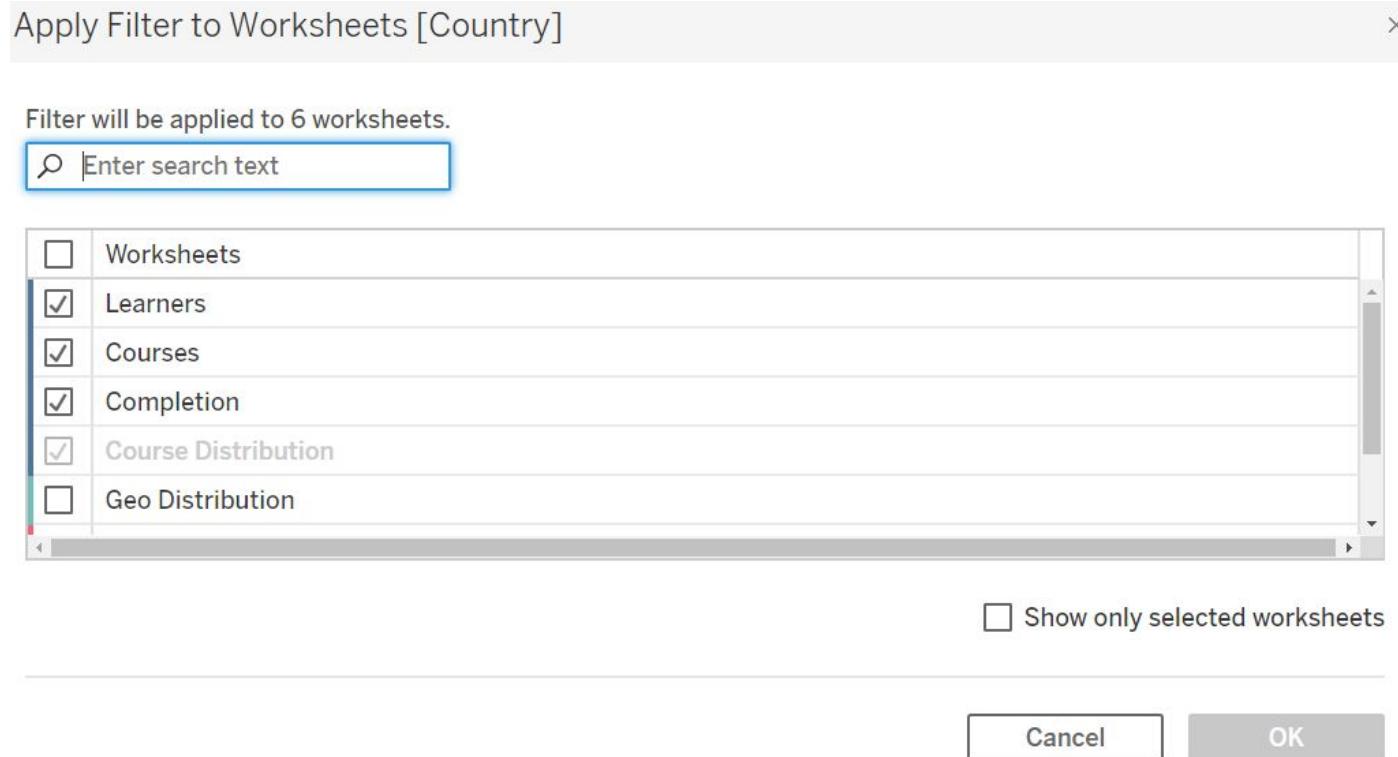
- University
- Country (selected)

A context menu is open for the 'Country' filter, showing the following options:

- Edit Filter...
- Show Filter
- Clear Filter
- Add to Context
- Apply to Worksheets ▾
  - All Using Related Data Sources
  - All Using This Data Source
  - Selected Worksheets... (selected)
  - Only This Worksheet
- Create Set...
- Dimension
- Attribute
- Measure
- Remove

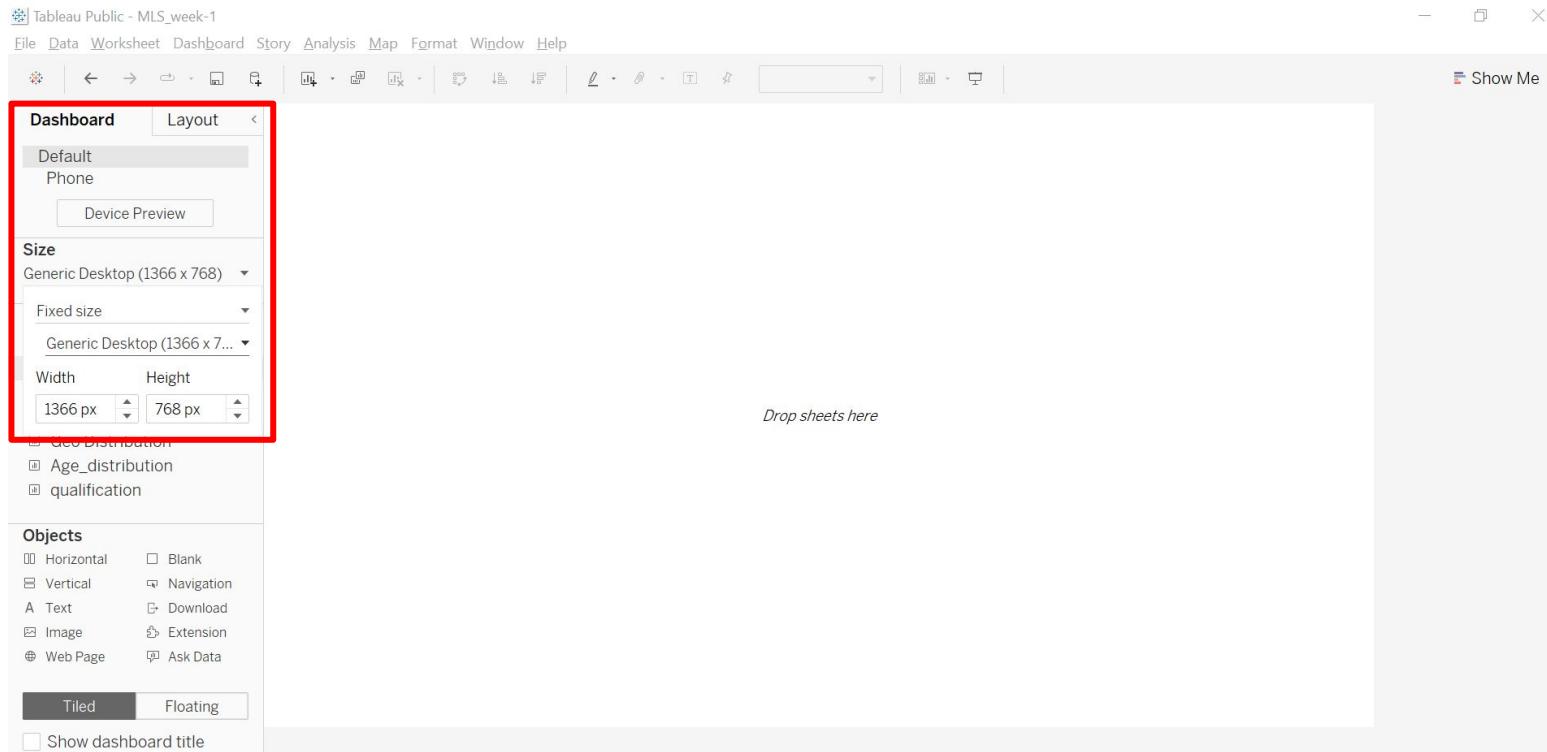
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**Step-4:** Now when you select “Selected worksheets” There will be a new table opened as shown below. Select the sheet for which this filter needs to be used



# Edx - Academic Business Report - Summary

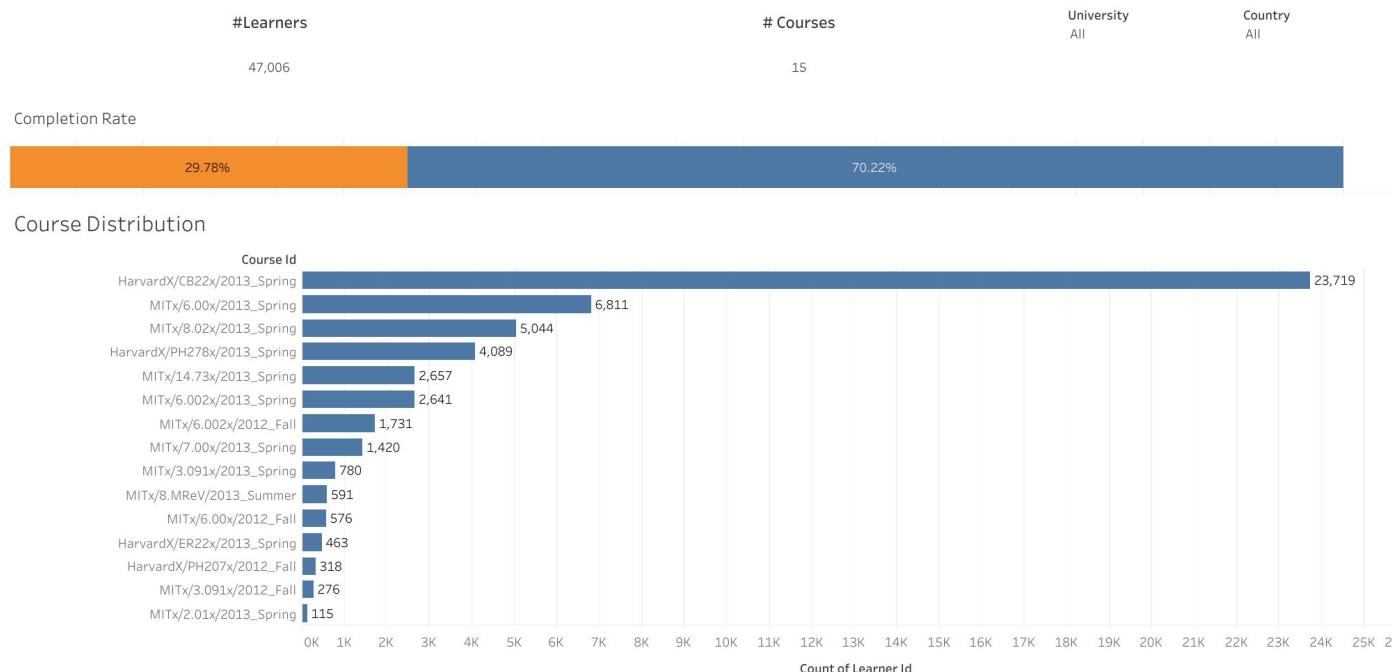
Now all the sheets are made it's time to put them together and make a dashboard and the below image shows the settings needs to be fixed. This Dashboard setting is common for all



# Edx - Academic Business Report - Summary

Now all the sheets are made it's time to put them together and make a dashboard on Summary as shown below.

## Edx - Academic Business Report - Summary



# DASHBOARD : 2

[Click here](#)

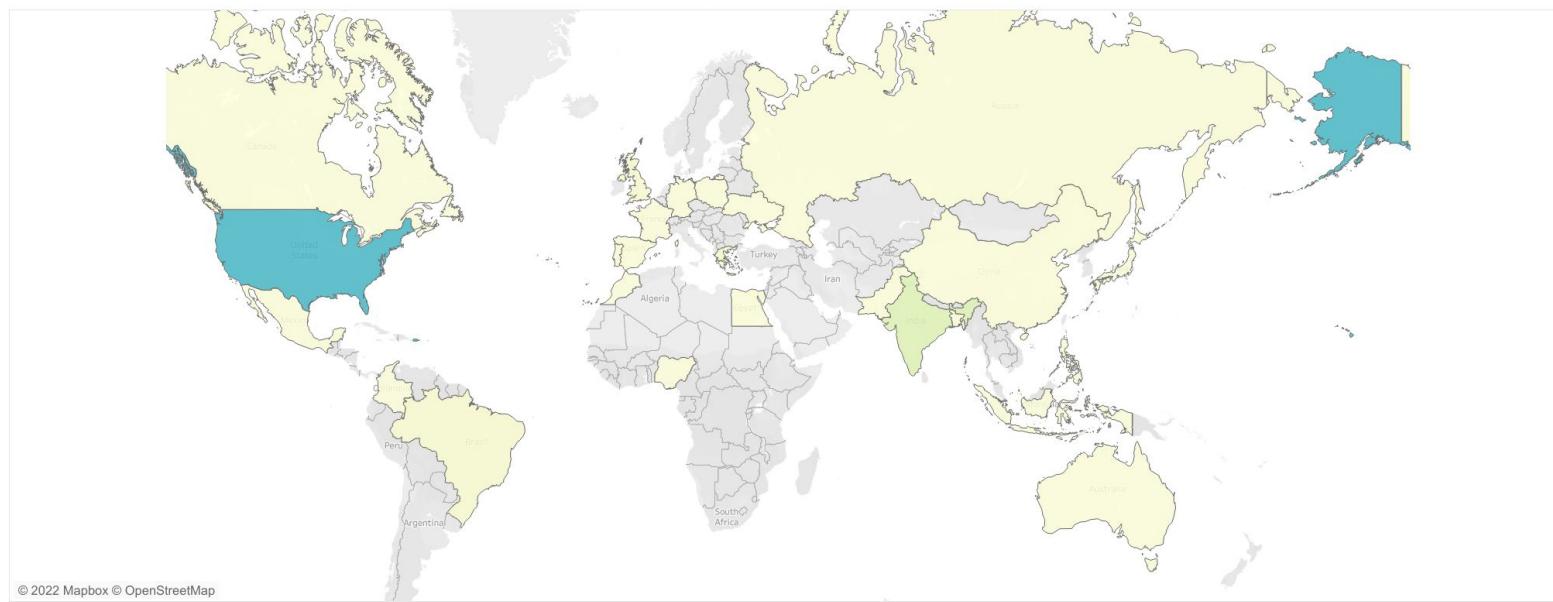
# Edx - Academic Business Report - Geographical

## Edx - Academic Business Report - Geo

University  
All

Course Id  
All

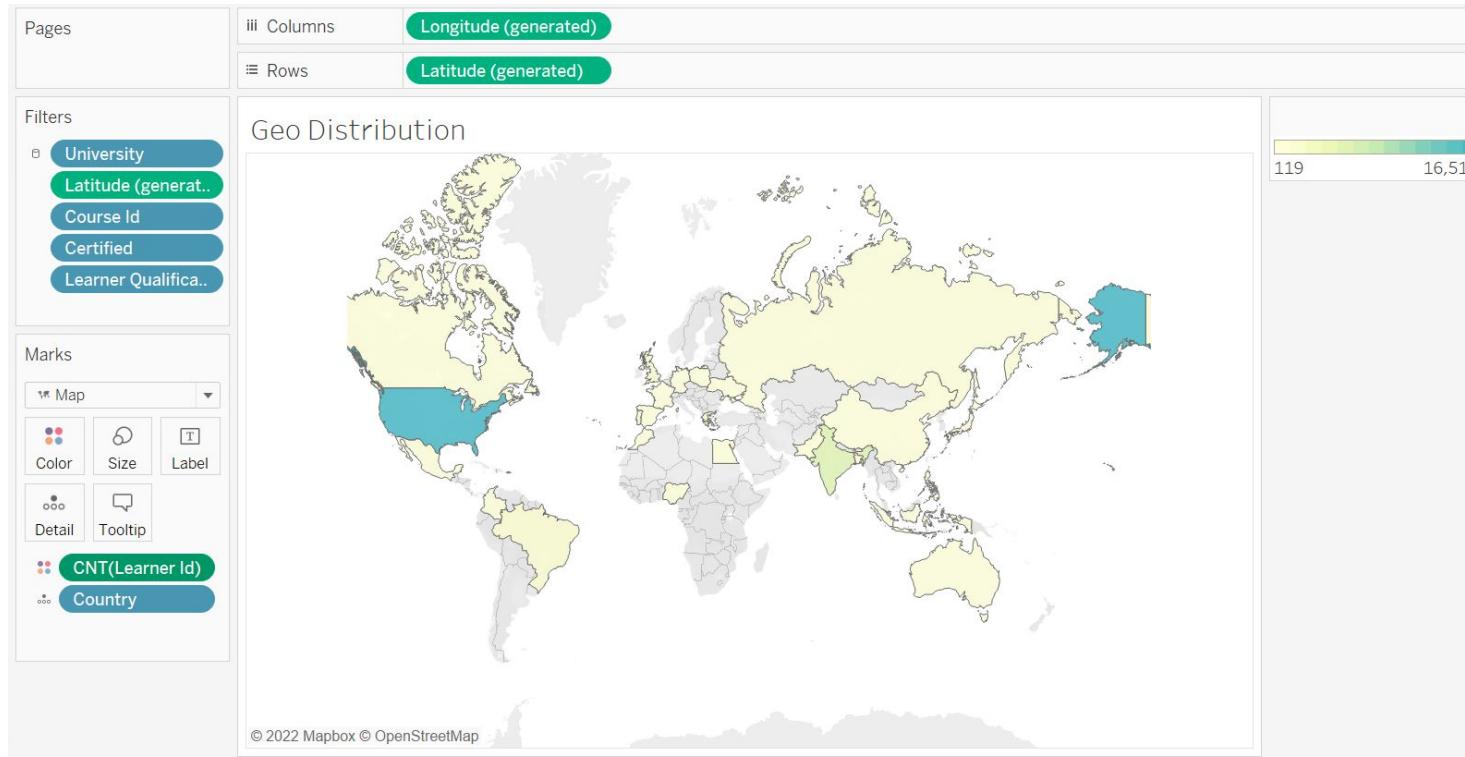
Certified  
All



[Click here](#)

# Edx - Academic Business Report - Geographical

In order to do a Geographical map need to create a map with the learner's distribution along with filters & marks as shown below



# DASHBOARD : 3

[Click here](#)

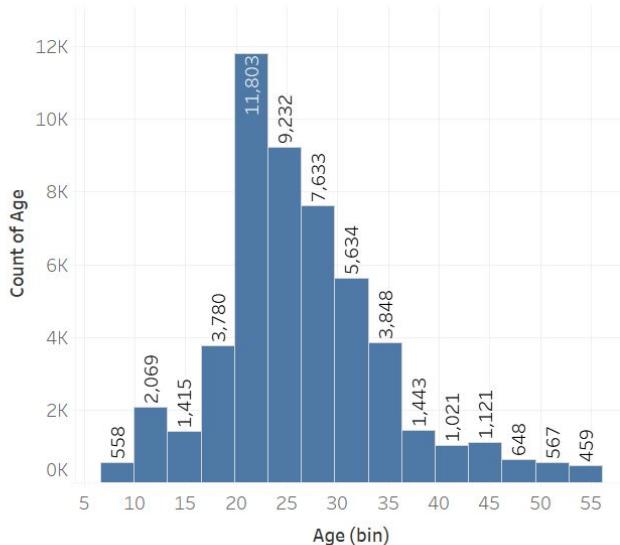
# Edx- Academic Business Report- Learners Attributes

In order to do a Learners attributes two sheets need to be created one on Age distribution & other on Qualification

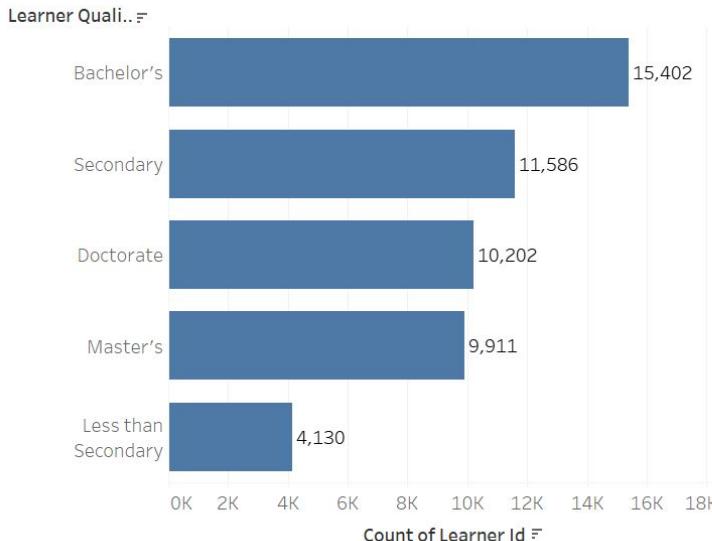
## Edx - Academic Business Report - Learners Attributes

University	Incomplete Flag	Country	Gender
(All)	(All)	(All)	(All)

Age\_distribution

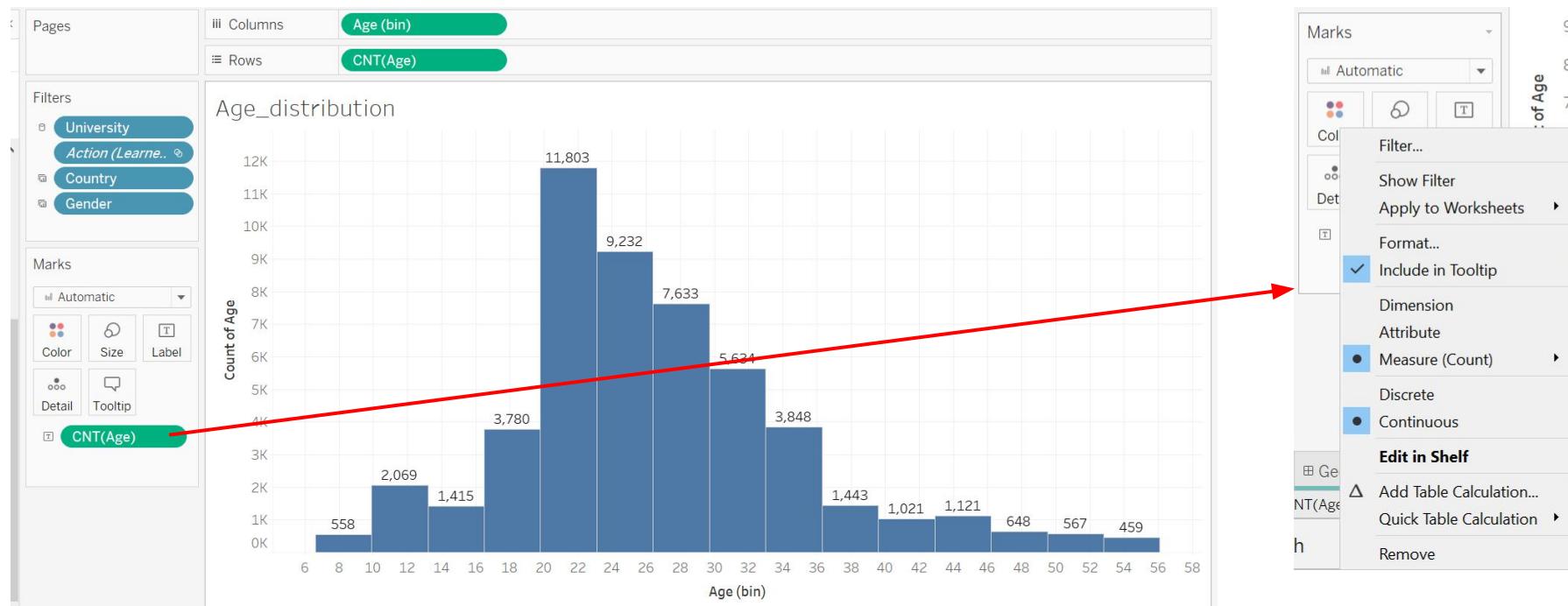


qualification



# Edx- Academic Business Report- Learners Attributes

Refer to the image below for the learners age distribution using the Histogram. Image on the right for the options selected in the marks



# Edx- Academic Business Report- Learners Attributes

Refer to the image below for the Qualification distribution using the Barplot. Image on the right for the options selected for the “Learners Id”



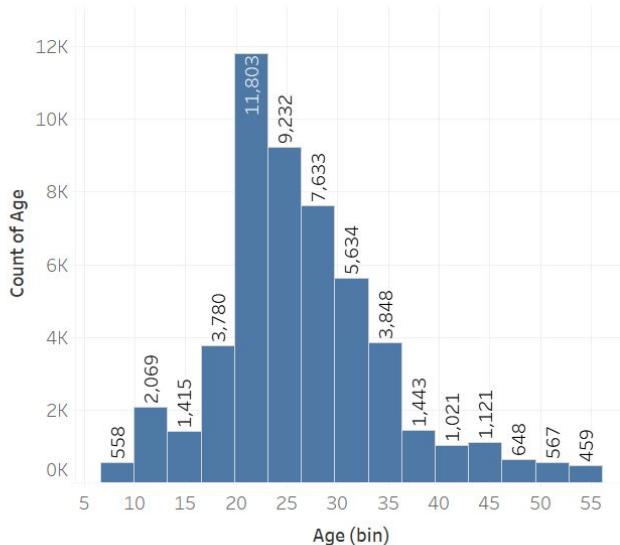
# Edx- Academic Business Report- Learners Attributes

As the Final step drag all the sheets with respect to filters and create a dashboard as shown below.

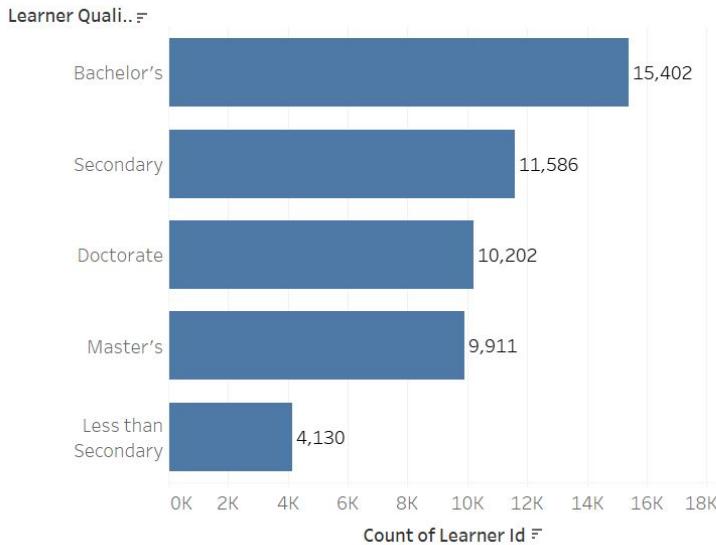
## Edx - Academic Business Report - Learners Attributes

University	Incomplete Flag	Country	Gender
(All)	(All)	(All)	(All)

Age\_distribution



qualification





# Happy Learning !

