

PLOT-A-THON

EDUCATION DATASET

Submission link: <https://forms.gle/2Nkty2STt2na6Mzz7>

Instructions:

- Merge the files and pre-process the database.
- Create visuals based on the following questions.
- The Visualization output should be in pdf format.
 - There should be creativity in the visuals.
 - The logical questions should be solved.
 - There should be an explanation for each visual.

Preprocessing Task:

The candidate will be required to:

1. **Merge Datasets:** Combine all four datasets using Entity (Country) and Year as primary keys.
2. **Handle Missing Values:**
 - Replace missing values in numeric columns with the median of the respective columns.
 - Drop rows with missing values in Entity or Year.
3. **Standardize Column Names:** Ensure column names are consistent (e.g., lowercase, underscores, concise names).
4. **Create Derived Metrics:**
 - Calculate the **total out-of-school population** by summing male and female counts (Total Out of School = Male + Female).
 - Compute the **gender gap in tertiary education enrolment** as the absolute difference between male and female ratios.
 - Calculate the **share of population with formal education** (Share with Formal Education = $100 - \text{Share with No Formal Education}$).

Visualization Questions (5 Questions):

1. **Share of world population with no formal education by year:**
 - Create a **line chart** to show the global trend of the share of the population with no formal education from 1820 to 2020.
2. **Top 10 countries with the highest out-of-school children (male + female):**
 - Use a **horizontal bar chart** to visualize the countries with the highest combined out-of-school population.

3. **Gender disparity in primary and secondary net enrolment rates:**

- Create a **grouped bar chart** to compare male and female enrolment rates in primary and secondary education for the top 5 countries with the largest disparity.

4. **Out-of-school children trend over time:**

- Plot a **line chart** showing the total number of out-of-school children (male + female) globally over time. Highlight key peaks or drops.

5. **Global map of the gender gap in tertiary enrolment:**

- Create a **choropleth map** to visualize the absolute gender gap in tertiary education enrolment for each country. Use colour gradients to indicate the severity of the gap.