Module 2 Lesson 2 - Project: Crafting a Narrative with Global Inequality and Development Data

Start Assignment

- Due Sunday by 11:59pm
- Points 100
- Submitting a file upload

Objective

You will use the Global Inequality and Development dataset to craft a data-driven narrative that highlights disparities in human development across regions. The project will involve data analysis, visual storytelling, and the creation of an interactive dashboard to present insights effectively.

Dataset

- **Source**: __UN Development Programme (UNDP)__ ⤷ **(https://hdr.undp.org/data-center)**
- Description: The dataset contains metrics such as:

  - Human Development Index (HDI)
  - Income inequality (Gini Index)
  - Life expectancy
  - Mean years of schooling
  - Gross National Income (GNI) per capita

- Link: __Download the UNDP Dataset__ ⤷ **(https://hdr.undp.org/data-center)**

Project Instructions

Step 1: Define the Narrative Focus

- **Task:** Select a focus area for your narrative. Options include:

  1. Regional disparities in HDI
  2. The impact of education on income inequality
  3. Trends in life expectancy across income groups

- Write a **one-paragraph introduction** outlining your focus area and its significance.

Step 2: Perform Data Analysis

- **Task:** Use Python or R to clean and explore the dataset.

  1. Handle missing values and standardize formats.

  2. Perform EDA to uncover key trends.

- **Required Visualizations:**

  1. A line chart showing HDI trends over time by region

  2. A scatterplot analyzing the relationship between income inequality (Gini Index) and life expectancy

  3. A bar chart comparing education metrics (e.g., mean years of schooling) across regions

Step 3: Create an Interactive Dashboard

- **Task:** Build an interactive dashboard to present your findings dynamically. Use one of the following tools:

  1. Plotly Dash (Python)

  2. Shiny (R)

  3. Tableau Public (for a no-code option)

- **Dashboard Requirements:**

  1. Include interactive elements (e.g., drop-downs, sliders) for filtering by region or year.

  2. Display key metrics (e.g., HDI, Gini Index, life expectancy) dynamically.

  3. Incorporate at least three visuals:

     - A trend chart for HDI

     - A scatterplot for relationships between variables

     - A bar chart for regional comparisons

  4. Add a summary text box that updates based on user selections.

Step 4: Compile and Submit

- **Deliverables:**

  1. Jupyter Notebook or R Markdown:

     - Include all code, visualizations, and markdown annotations explaining the steps.

  2. Interactive Dashboard:

     - Host the dashboard (if using Plotly Dash or Shiny) or provide a Tableau workbook (.twbx).

  3. Report:

     - A 2–3 page PDF or Word document with the following:

       - An introduction explaining the focus area
       - Key insights with embedded visuals
       - Recommendations based on findings

Assessment Criteria

1. **Data Analysis (30%)**

   - Completeness of EDA
   - Depth and relevance of insights

2. **Visualizations (30%)**

   - Clarity, accuracy, and relevance to the narrative
   - Creativity in designing engaging visuals

3. **Interactive Dashboard (30%)**

   - Functionality and interactivity of the dashboard
   - Clear and user-friendly interface

4. **Narrative and Report (10%)**

   - Coherence and persuasiveness of the narrative
   - Alignment with the chosen audience

⬆ Submit your work by the due date listed in the course calendar.