

# Usecase 3 - (Project 2)

By: eng. Esraa Madhi

---

Utilizing your knowledge of NumPy, pandas, matplotlib, seaborn, and Plotly, proceed with the analysis of the provided data.

This project must at least satisfy the following minimum requirements:

## Usecase 3

For any **Data project** we should go through these steps:

### Step 1: Defining the Problem Statement

- Which universities are ranked in the top 10 globally?
- Which universities are ranked in the top 10 for employment outcomes?
- What positions do universities in Saudi Arabia hold within the global rankings?
- Considering various factors such as employment rankings, research rankings, and others, which has the most significant impact on a university's overall ranking?
- Is there a correlation between national and global university rankings, and based on this information, can you recommend a country that appears to have a high concentration of top-ranked universities?
- Bonus: Develop two additional questions that could be explored using the data set at your disposal.

### Step 2: Collecting Data

- Use the following dataset.

- <https://www.kaggle.com/datasets/ourfuture/world-university-rankings>

## Step 3: Data Quality Checking and Remediation

## Step 4: Exploratory Data Analysis

- For these two steps, make sure to do:
  - a. Data Profiling: apply the 7 types of data profiling
  - b. Data Cleaning: handle missing values, correcting errors, and dealing with outliers.
  - c. Univariate Analysis & Bivariate/Multivariate Analysis: to understand their distribution and look at the relationships between variables. For your visualizations make sure to:
    - Drive meaningful insights (at least 10 different charts).
    - Choose a specific style for your charts.
      - Apply one color palette from your choice on all charts.
      - Use the title, x-y labels, font size, figure size, and legends.
      - Bonus: Create your charts using Plotly.

## Step 5: Building Machine Learning Models

Not applicable

## Step 6: Model Evaluation

Not applicable

## Step 7: Communicating Results

- Report your final conclusion and findings in one page (readme markdown file).
  - Team members.
  - Introduction (Problem, Objectives)
  - Dataset Overview and Source.
  - List of EDA steps that applied on data with description
  - Describe the final ten insights with their charts

## Step 8: Model Deployment

Not applicable

## Step 9 : Model Performance Maintenance in Production

Not applicable

---

---

**Note:** the red steps means they are Not applicable in the project