**📘 Final Project Report**

**Project Title:** Python   
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**Tool Used:** Python (Google Colab)

**🔹 1. Introduction**

This project was completed as part of the Python internship under Cloud Counselage. The primary aim was to analyze a student dataset containing information related to educational background, technical skills, event participation, and personal aspirations. Using Python and relevant data analysis libraries, this project delivers insights based on predefined analytical questions.

**🔹 2. Objectives**

* To understand and clean a real-world dataset.
* To derive actionable insights by answering analytical questions.
* To visualize key data trends using Python libraries.
* To practice professional documentation and code presentation.

**🔹 3. Methodology**

**3.1 Data Collection**

* Dataset provided in .xlsx format titled **"Python Data (1).xlsx"**
* Uploaded manually into Google Colab environment.

**3.2 Data Analysis Tools**

* **pandas:** For data manipulation
* **numpy:** For numerical operations
* **matplotlib & seaborn:** For data visualization

**3.3 Key Steps**

* Reading and exploring the dataset
* Handling missing values
* Filtering and grouping data based on specific conditions
* Plotting graphs for easier insight interpretation
* Answering specific questions (e.g., count of unique students, top CGPA holders, city-wise participation, etc.)

**🔹 4. Observations and Results**

* Successfully identified the number of unique students and events.
* Analyzed CGPA trends and highlighted students with strong academic performance.
* Explored relationships between experience, income, salary expectations, and leadership skills.
* Visualizations helped clarify trends in city, college, and expected outcomes.
* Solved all required questions through code and plots in the Jupyter notebook.

**🔹 5. Challenges Faced**

* Inconsistent formatting in the dataset (e.g., spacing in city names).
* Columns with sparse data, like "Specify in 'Others'" had to be excluded.
* Clarifying ambiguous questions required careful interpretation of column values.

**🔹 6. Conclusion**

This project strengthened practical Python skills, especially in handling and analyzing datasets. It also emphasized the importance of readable, documented code and visualization in storytelling through data. The structured approach from loading the dataset to final insights mirrors real-world data analysis scenarios, making this internship experience both enriching and professionally valuable.

**🔹 7. Future Scope**

* Applying machine learning models for predictions (e.g., expected salary based on profile).
* Automating reports and exporting visualizations.
* Expanding the dataset for trend analysis over time or across institutions.