Girls@Axpo: Learning Day Program

8:30 - 9:30: Welcome and Introduction

- Introduction to the team
- Overview of the day's schedule.
- Discussion about your interest and goals for today.

9:30 - 9:45: Insights Daily

Insights daily is a daily reoccuring meeting with the Insights Core team to discuss what was done the previous day and what will be done today. Any urgernt matters, blockers or issues are brought up in this meeting.

Theoretical Explanation

9:45 - 11:00: Introduction to Cloud Computing with Azure and Insights

- Basic concepts of cloud computing.
- Overview of Azure services and their use cases within Insights scope.
    - What is cloud computing?
    - Benefits of using cloud services (scalability, reliability, cost-effectiveness).
    - Key services provided by Azure (compute, storage, databases, networking).
- Example use cases and scenarios where cloud computing is advantageous.
- Q&A to address any questions about cloud computing.

Python Exercises

11:00 - 11:30: Setting Up Jupyter Notebooks

- Introduction to Jupyter Notebooks and their benefits.
- Basic features and functionalities (cells, markdown, code execution).
- Setting up a local development environment (Anaconda, JupyterLab).
- Creating a simple "Hello World" notebook.

11.30 - 12.45: Lunch Break

12:45 - 14:00: Data Manipulation with pandas

- Introduction to pandas library and its use cases.
- Importing datasets into Jupyter Notebooks.
- Basic data manipulation (reading, writing, filtering, sorting data).
- Hands-on exercise: Analyzing a sample dataset.

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14:30 - 15:00: Data Visualization with Matplotlib and Seaborn

- Introduction to data visualization libraries (matplotlib, seaborn).
- Creating basic plots (line plots, bar charts, histograms).
- Customizing plots (titles, labels, colors).
- Hands-on exercise: Visualizing the sample dataset.

15:00 - 15:15: Break

15.15: 16:00: Data Analysis with pandas (Continued)

- Loading the scraped data into a pandas DataFrame.
- Basic data cleaning and transformation.
- Hands-on exercise: Analyzing the scraped data using pandas (e.g., finding trends, visualizing data).

16:00 - 17:00: Q&A and Wrap-Up

- Recap of the day's activities.
- Q&A
- Discuss potential next steps and resources for further learning.
- Feedback session on what was most interesting and any improvements for future learning days.

Optional: Introduction to Web Scraping

- Overview of web scraping and its use cases.
- Introduction to BeautifulSoup and requests libraries.
- Writing a simple web scraper to collect data from a website.
- Hands-on exercise: Scraping data from a chosen website (e.g., e-commerce site, news site).

Practical Exercise: Web Scraping and Analysis

- A practical guide to web scraping exercise.
- Collect data from a specific website of interest.
- Analyze the collected data using pandas (e.g., finding trends, visualizing data).
- Create a final Jupyter Notebook report with analysis and visualizations.