PROJECT STANDUP 1 REPORT

COURSE : COS30045

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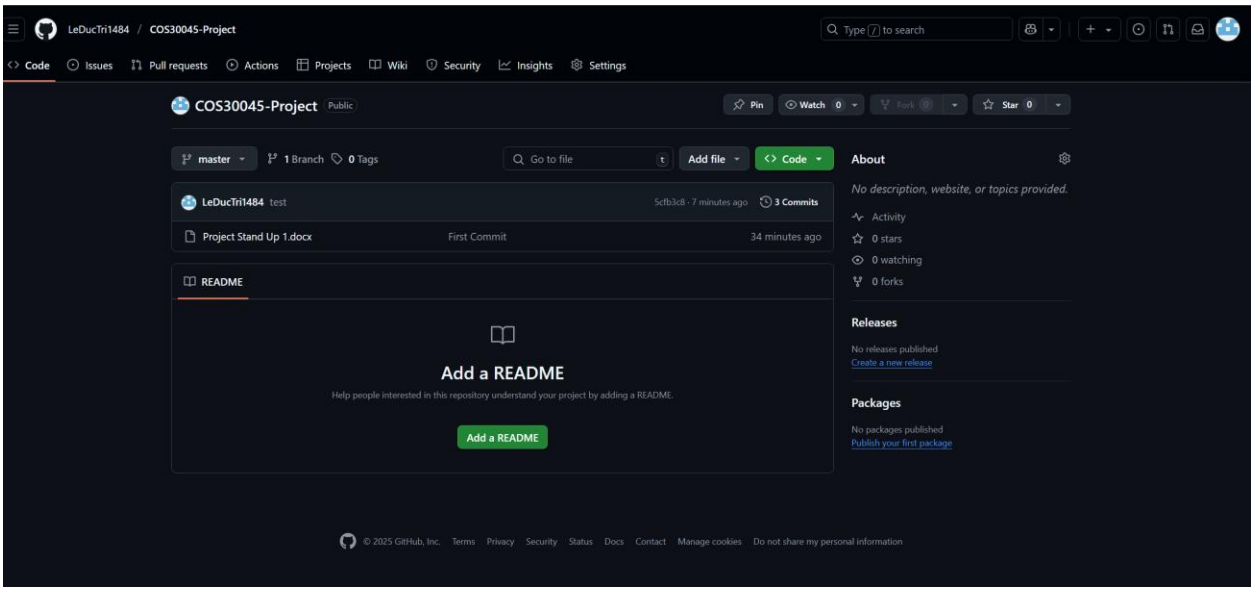
NOTE : Since I'm unable to find cooperators, this task is done by myself, and I will announce further changes like about team members and work if there are.

PLAN:

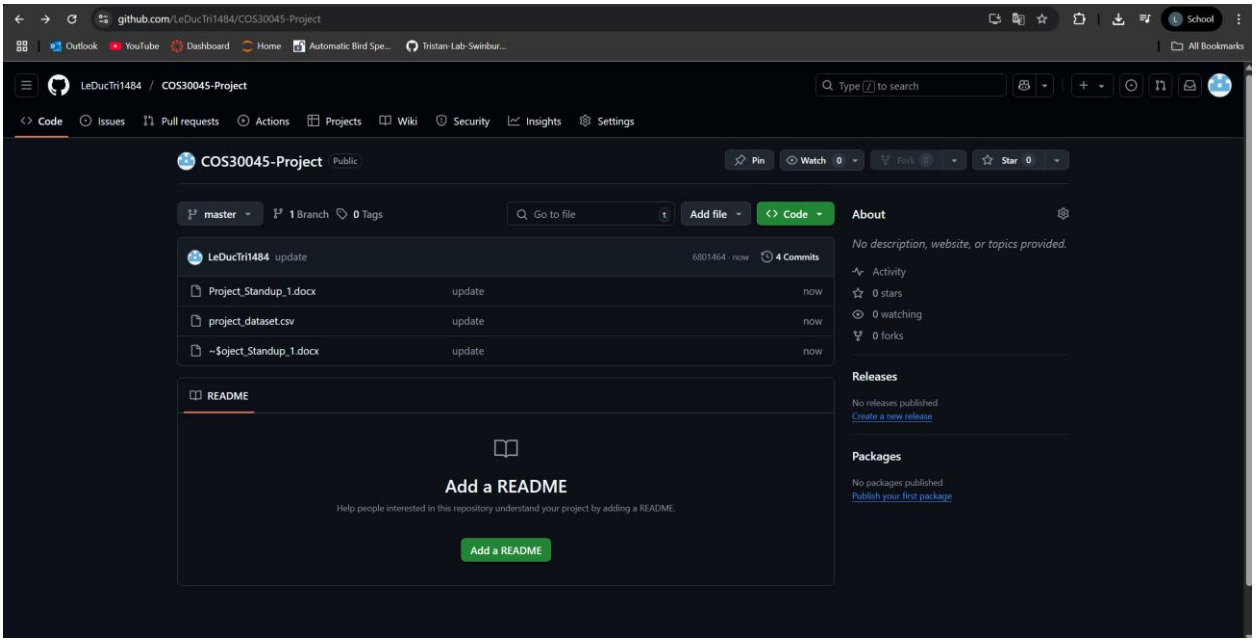
1. **Set up local GitHub repositories**



This will help to push the content that I do or change in this repository so that colleagues can see what I'm doing.

2. Download necessary documentation and analyze the Assignment request

2.1 Download dataset and push in GitHub



Since the name is a mess so I rename it to project_dataset.csv

2.2 Analyze Assignment context and task

Context:

This dataset includes indicators such as the nutrient balances (nitrogen and phosphorus surpluses), agricultural land use, crop production, and farm economic performance data for OECD countries.

Task: The Assignment has 4 main requirements as well 1 optional requirement which I will analyze deeper later.

Assignment Requirements

1. Data Exploration and Preparation

- Download and examine the dataset structure, variables, and time coverage (mainly from 2012 onwards).
- Identify key variables related to agricultural producer protection, nutrient balances, crop types, and farm economic indicators.
- Clean the data as necessary (handle missing values, filter relevant countries/years).

2. Data Analysis

- Examine nutrient balances (nitrogen and phosphorus surpluses) by country and year to assess environmental impacts of agriculture.
- Investigate relationships between crop types, livestock density, and nutrient inputs/outputs.
- Optionally, explore farm economic variables such as income, subsidies, and costs if available.

3. Visualization Tasks

Create at least 4 different types of visualizations to illustrate your findings:

- **Time Series Plot:** Show the trend of Producer Nominal Protection Coefficient over years for selected countries.
- **Choropleth Map:** Display nutrient surpluses or protection coefficients by country to visualize geographic patterns.
- **Scatter Plot / Bubble Chart:** Explore relationships between nutrient inputs and crop/livestock composition or farm income.
- **Bar Chart / Box Plot:** Compare nutrient balances or protection coefficients across groups of countries or crop types.

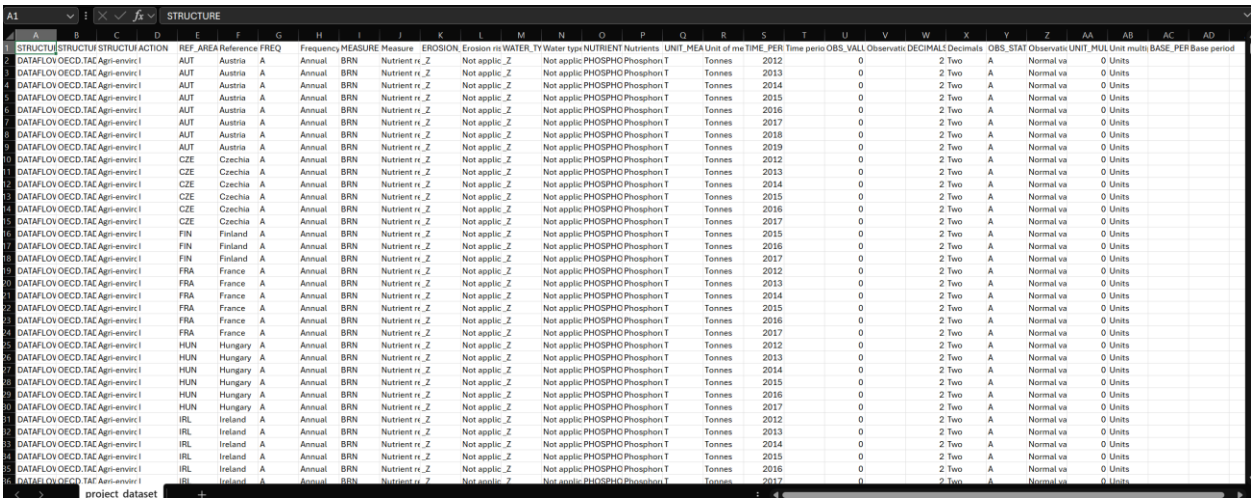
4. Interpretation and Reporting

- Provide clear titles, axis labels, and legends for each visualization.
- Write a brief interpretation (2-3 sentences) for each chart explaining the insights it reveals.
- Summarize key findings about agricultural price protection, nutrient management, and environmental implications.
- Discuss any limitations or data quality issues encountered.

5. Optional Advanced Analysis

- Use statistical or econometric methods to explore factors influencing nutrient surpluses or price distortions (e.g., impact of policy zones, crop mix).
- Create interactive dashboards or use tools like Tableau, Power BI, or Plotly for enhanced visualization.

3. Examine and analyze dataset through Excel



STRUCTURE	STRUCTURE_ID	STRUCTURE_NAME	ACTION	REF_AREA	Reference area	FREQ	Frequency	MEASURE	Measure	EROSION	Erosion risk	WATER_TYPE	Water type	NUTRIENT	Nutrients	UNIT_MEASURE	Unit of measure	TIME_PERIOD	Time period	OBS_VALUE	Observation Value	DECIMALS	Decimals	OBS_STATUS	Observation Status	UNIT_MULT	Unit multiplier	BASE_PER	Base period
DATAFLOW	OECD.TAD.AGR	Agri-environmental indicators	I	AUT	Austria	A	Annual	BRN	Nutrient removal	_Z	Not applicable	_Z	Not applicable	PHOSPHO	Phosphorus	T	Tonnes	2012		0		2	Two	A	Normal value	0	Units		
DATAFLOW	OECD.TAD.AGR	Agri-environmental indicators	I	AUT	Austria	A	Annual	BRN	Nutrient removal	_Z	Not applicable	_Z	Not applicable	PHOSPHO	Phosphorus	T	Tonnes	2013		0		2	Two	A	Normal value	0	Units		
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The dataset looks nice and clean from the head, but we have to run some commands to check later, it describes multiples column with a pair column which one will be code or number and other is description on what that code is. The correlation between variables will be examined later.

4. Conclusion and planning

Workflow: work will be done on the local folder and then will be committed and pushed into GitHub repositories

Dataset : Use some popular tools and libraries which available on python to analyze and challenge on the integrity of the dataset (pandas,...). After that, wrap things up about the correlation between columns before moving to programming task.

Web interface: Will be considered

Human resources : need to look for more colleagues for this assignment

Task : Data preparation => Data Exploration => Analyze Dataset => Do Research => Working on project => Deliveries

Submission : 2 PDF files, a link to Mercury website.

THIS IS THE END OF THE REPORT