**Task1:**

Request data from the website of the Elering regulation market here: <https://baltic.transparency-dashboard.eu/>and draw a graph based on returned data it and give an assessment of regulation activities.

1. Inherit data on Baltic imbalance amounts: <https://baltic.transparency-dashboard.eu/node/44?mode=table>
2. Inherit data regarding Baltic activations: <https://baltic.transparency-dashboard.eu/node/35>
3. Make a graph showing the imbalance in the Baltics, the upward and downward adjustments for the Baltics.
4. Give an assessment of whether the adjustment activities were always done correctly in the period from 2024-08-01 00:00 CET to 2024-09-01 00:00 CET, i.e. the imbalance should have decreased after the activation action.

**Hints:**

1. Basis for regulation actions of system balancing is Baltic aggregated value
2. The Python modules requests, pandas and matplotlib are helpful.
3. API documentation is here: <https://baltic.transparency-dashboard.eu/documentation/api>

**Result:**

1. Code that retrieves the data from dashboard and makes a graph from the data. Shared either as a text file or a link to github repository (prefered).
2. Brief textual analysis of the data retrieved and visualization in prefered way (p 4)

**Task2:**

Assess the provided EQ profile instance (CGMES model format in xml containing information on network physical elements)

1. What is the total production capacity of the generators in the model
2. What are the nominal voltages of the windings of the transformer NL\_TR2\_2 (ID: \_2184f365-8cd5-4b5d-8a28-9d68603bb6a4)
3. What is permanently allowed limit for line segment NL-Line\_5 (ID: \_e8acf6b6-99cb-45ad-b8dc-16c7866a4ddc ) and temporarily allowed. What is difference between those limits.
4. Which generator is set as slack in the model? Why does model need slack node?
5. Find mistakes in the model (both semantic, power system related and logical errors are present)

**Hints:**

1. Current limits for ACLineSegment (" currentlimit ") are located under Terminal -> OperationalLimitSet
2. Suggest using notepad ++ for finding elements or python (if using python, please provide sample code with the task. Python is prefered)
3. The Python modules triplets or rdflib can be helpful.
4. CGMES structure and principles to help if stuck are explained also here: <https://www.youtube.com/watch?v=FjpyO0iWhWo>

**Result:**

1. Answers to the questions with image snips to support the answers.

**Task3:**

Discuss/Research how to achieve time and time period interoperability.

1. Why and where should one use UTC time?
2. Why and where should one use local time?
3. Which notation of time period definition would you use? (briefly explain possible issues)
   1. left closed, right opened. Example: [2022-08-01T**00:00**Z, 2022-08-01T**01:00**Z)
   2. left closed, right closed. Example: [2022-08-01T**00:00**Z, 2022-08-01T**00:59**Z]

**Result:**

1. Answers to the questions