**DELOS Aqua Questions:**

1. For these tests, we are going to assess thought processes related to data science frameworks in real time use cases. Few pointers:

- Explain the reasoning behind the taken approach
- If you are using assumptions, state the assumptions clearly in the answers
- You can use any tools that you prefer, but please state clearly which tools are you using to solve the problem.

Question:
How can you generate a random number between 1 – 7 with only 1 dice?

2. The data provided (another excel attachment) is synthetic data created from real world datasets. **Definitions and Notes:**
    - Days of production means the number of days the shrimp have been in the pond for
    - Pond identifier, is the unique identifier for the pond the shrimp are cultivated in
    - Inputs:
        1. Feed per day is given by the farmer, and is adjusted to feeding behaviour, observed growth and to some degree water conditions
        2. Water Temperature is not influenced by Feed or any other parameter
    - Parameters: TAN (Total Ammonia Nitrate), Phosphate and Phytoplankton density
    - Correlation does not mean causation, for example, ammonia and phosphate increase, due to feed input (causation), as well as other factors, however phosphate does not increase due to ammonia. Please show awareness of these limitations in your answer.
    - There are no interactions or relationships between ponds

For the provided data please:

1. Comment on the data set and any considerations needed to be factored in to any analysis (cleaning, limitations, assumptions etc.)
2. Create and run an analysis to answer: “What relationships do you infer from the provided parameters, which would explain how TAN and Phosphate change over time”
    - Be aware that a change in one parameter or input will likely impact other parameters
    - We would expect all parameters to be considered in your analysis

3. With more time and more control over the data points collected, what would you change? and what additional analysis or processes would you undertake to understand the factors driving changes in TAN and Phosphate? Please refer to big data and ML techniques.