ST2IBI Case Study

Learning Outcomes=evaluation criteria

Analyse needs, Design and use a BI solution (the case of electric school bus in USA). Three learning outcomes will be validated:

- A / A - Analyse needs to design or improve digital products and services
  A201 / A201 - Formalize needs in scientific and technical terms by mobilizing the knowledge necessary for their interpretation
- B / B - Design numerical solutions based on the state of the art
  B203 / B203 - Set objectives in terms of quality of service and user experience
- D / D - Managing the operation of solutions as part of a continuous improvement process
  D201 / D201 - Use quality indicators and participate in their monitoring

Data Sources and descriptions:

- The dashboard https://electricschoolbusinitiative.org/electric-school-bus-data-dashboard is a Business Intelligence application for electric school buses, at the national/state level in USA.
- The file technical-note-dataset-electric-school-bus-adoption-united-states.PDF describes the use case.
- Additional descriptions and data sets can be downloaded from: https://electricschoolbusinitiative.org/dataset-us-electric-school-bus-adoption

Technical workflow (by class session):

1- Consider the case of electric school bus in USA, to answer the Opening Vignette questions and **analyze needs to design (A201)** the Pressure-Response-Support Model.
2- Consider your team as an executive board of a student association. Focus on the student use case in the technical notes, to choose a decision-making problem(s)/opportunity(ies) according to Gory and Scott-Morten model. Select only one page in the dashboard that can support you as a decision maker.
3- **Formalize needs (A201)** of the executive board of the student association, using the decision-making process of Simon. The use of UML to formalise the needs is a bonus.
4- Choose a decision phase according to Simon Process. Select 3 other KPIs in the dashboard that can complement the previous one. **Use these quality indicators and participate in their monitoring as a decision maker (D201).** Give the story telling of the 4 KPIs (UML use is a bonus).
5- Extract, Transform and Load the data set mentioned below. Understand the data set and give its UML Class-diagram. Prepare your data and calculate your KPIs.
6- Design a dashboard (with your 4 KPIs) to support the decision maker. **Set objectives in terms of quality of service and user experience equivalent to those of the initial dashboard (B203).**

Deadlines and Deliverables:

- End of each class session: Report resuming the current workflow task
- **Mardi 21 octobre, 14H**:
  - PPT presentation of the decision-making needs
  - Demo of your BI solution (NoteBook, PowerBI, Streamlit, Web, …)