Systems Analysis & Design
Semester 2025-I
Workshop No. 1 — Kaggle Systems Engineering Analysis

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Welcome to the first workshop of the *Systems Analysis* course!

Your mission is to conduct a thorough **systems analysis** of one of the open-priced Kaggle competitions available at `https://www.kaggle.com/competitions?hostSegmentIdFilter=1`.

This analysis will incorporate **systems engineering**, **elements**, **inter-element relationships**, **system sensitivity**, and aspects of **chaos theory**, among other key considerations.

Workshop Scope and Objectives:

- **Identify Key Elements:** Select one open-priced Kaggle competition and describe all critical components (e.g., datasets, features, target variables).

- **Mapping Relationships:** Show how these elements interact, including data flows, constraints, and system boundaries.

- **Systems Engineering Perspective:** Apply systems engineering principles to frame the competition problem (requirements, architecture, and lifecycle considerations).

- **Sensitivity Analysis:** Examine how changes in input parameters affect the competition outcomes and discuss potential techniques to quantify these effects.

- **Chaos Theory and Complexity:** Discuss any unpredictable or chaotic aspects you observe in the competition. Where might random, nonlinear, or feedback processes appear?

Methodology and Deliverables:

1. **Competition Overview:** Provide a succinct summary of the competition goal, dataset structure, and any significant constraints.

2. **Systems Analysis Report:**

   - *Systemic Analysis:* Outline all elements and relationships within the context of the competition.

   - *Complexity & Sensitivity:* Present potential constraints, conflicts, or points of variability that can influence outcomes.

   - *Chaos and Randomness:* Note any observed or anticipated chaos theory aspects (e.g., unforeseen interactions or feedback loops).

   - *Conclusion:* Summarize key findings, highlighting potential strengths and weaknesses of the system.

3. **GitHub Repository:**

   - Create a folder in your `GitHub` repository to store all files related to this workshop (and for the future workshops).

   - Include a `README.md` describing how the analysis was carried out, any code used, and a link to your final PDF report.

Deadline: Saturday, April 5th, 2025, 8:00 AM. Failure to submit by the deadline may result in penalties according to course policy.

Notes:

- The report and any supplementary documentation must be in **English** and submitted in **PDF format**.

- Provide complete references if you use any external sources.

- This workshop emphasizes your *systems thinking* approach, so highlight any technical or theoretical frameworks you apply.

Good luck, and remember your goal is to apply **systems analysis** principles thoroughly, showcasing your analytical skills in tackling complex data competitions.