Assignment Rubric: Ensemble Classifiers in Supervised Learning

Rubrics:

• **Individual Work**: This is an individual assignment. Do not use any AI tools to answer these questions. Using AI-based tools to generate answers will result in a score of **0**. (You may use them as a *resource* only, not for writing solutions.)

• **Requirements for Each Question**:
For every question, you must provide:

1. **Code** that is well-structured, modular, readable, and follows a consistent style.
2. **Discussion** explaining what the code does and the approach you applied.
3. **Analysis** that briefly but insightfully covers:
    - The logic of the code.
    - Preprocessing decisions made and their rationale.
    - The effect of these decisions on the dataset.
    - Strengths, limitations, and possible improvements.

Missing any of these required items will result in a deduction of **2 points per missing item**.

• *Assignment Structure*:
The assignment contains **12 questions**, grouped into three sections:

1. Initial analysis and Exploratory Data Analysis (EDA)
2. Classification and Hyper-parameter Tuning
3. Propose Stacking Model

• *Expectations per Question*:
Each question must include:

- Code
- A short discussion of what you did and why
- A brief analysis of your results and what you learned

• *Final Reflection*:
After **Question 12**, you must also provide a concluding paragraph describing:

- The key insights you gained from the project, and
- What you learned in general.

Section	Question(s)	Total Points
Initial Analysis and EDA	Q1- Q7: Provide details on analysis (coding required for each question), and what do you learn from your results. Lack of coding or analysis results in -5pts for each question	35%
Classification & Hyper-parameter	Q8-Q11: Explanation and. Coding required. Analysis of each model results + using proper parameters for tuning techniques, and correct analysis of calibration plots are required. Lack of coding or analysis results in -5pts for each question	35%
Proposing Stacking Model	Propose stacking model, evaluate it correctly (coding required). Lack of coding or analysis results in -5pts for each question	20 %
Presentation & Organization	Code readability, structure, consistency, reproducibility	10 %
TOTAL		100 %