ALGOMATH DATATHON-2026
(Review and Evaluation Structure)

ALGOMATH DATATHON-2026 – Evaluation Criteria (Total: 100 Marks) (24 Hours)

Review 1: Problem Understanding & Approach Design (30 Marks) (0-8 hours)

Focus: *What problem are you solving and how will you solve it?*

Student Presentation Should Cover:

- **Problem Identification (8 Marks)**
  - Selected problem statement
  - Real-world relevance and impact
  - Clear definition of inputs and expected outputs
- **Data Collection (10 Marks)**
  - Dataset source(s) (public/private/simulated)
  - Description of features and target variable
  - Data size and format
- **Data Preprocessing Plan (5 Marks)**
  - Handling missing values
  - Outlier detection
  - Feature scaling/encoding
  - Data splitting strategy
- **Technique Identification (7 Marks)**
  - Chosen AI / ML / DL models
  - Justification for model selection
  - Problem type (Prediction / Classification)

Evaluation Criteria:

- Clarity of problem definition
- Appropriateness of dataset
- Logical preprocessing strategy
- Correct identification of AI/ML/DL techniques

Outcome: Clear roadmap for implementation

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Review 2: Mathematical Foundation & Implementation (8-16 hours) (40 Marks)

Focus: *Why does your model work and how is it implemented?*

Student Presentation Should Cover:

- **Mathematical Derivation (10 Marks)**
  - Core equations of the chosen model
  - Loss function and optimization method
  - Assumptions and constraints
- **Working Mechanism (15 Marks)**
  - Step-by-step explanation of how the algorithm learns
  - Data flow through the model
  - Training vs inference process
- **Python implementation or any preferred software (10 Marks)**
  - Libraries used (NumPy, Pandas, Scikit-learn, TensorFlow, PyTorch, etc.)
  - Model architecture / pipeline
  - Key code snippets and logic
- **Training Strategy (5 Marks)**
  - Hyperparameters
  - Training-validation split
  - Overfitting prevention (regularization, dropout, etc.)

Evaluation Criteria:

- Correctness of mathematical explanation
- Depth of understanding of the algorithm
- Quality and clarity of Python implementation
- Alignment between theory and code

Outcome: Working, theoretically justified model

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Review 3: Model Evaluation & Results (16-24 hours) (30 Marks)

Focus: *How good is your model and what do the results mean?*

Student Presentation Should Cover:

- **Model Evaluation (10 Marks)**
  - Evaluation metrics (Accuracy, Precision, Recall, F1, RMSE, MAE, R^2, AUC, etc.)
  - Confusion matrix / error analysis
  - Comparison with baseline model
- **Results & Interpretation (5 Marks)**
  - Key findings from the model
  - Feature importance or insights
  - Strengths and limitations
- **Visualization (10 Marks)**
  - Performance graphs
  - Prediction vs actual plots
  - Training curves (loss/accuracy)
- **Conclusion & Future Scope (5 Marks)**
  - Final outcome of the project
  - Possible improvements
  - Real-world deployment feasibility

Evaluation Criteria:

- Correct use of evaluation metrics
- Depth of result interpretation
- Quality of visualizations
- Practical relevance of conclusions

Outcome: Validated model with meaningful insights