BMSCE IEEE WIE on account of **Phase Shift** presents

DATAVERSE

A Datathon that puts your data science skills to test!

COMPETITION RULES

Teams may consist of up to 2 members. Individual participation is allowed.

Competition Duration:

The competition will last 8 hours. All submissions must be made within this timeframe.

Data Usage:

Only the provided dataset should be used for the competition. External data is not allowed unless explicitly allowed by the organizers.

COMPETITION RULES

Submission:

Each participant or team is allowed only one submission.

Submissions must include:

A Jupyter Notebook or Python script with the code.

A trained machine learning model (saved model file).

A presentation (PPT) summarizing your methodology, model performance, and recommendations.

Collaboration:

Collaboration is allowed within teams but not between teams.

COMPETITION RULES

Code of Conduct:

Plagiarism or unethical behavior will result in disqualification.

Tools:

Participants may use any programming language or library (Python with libraries like scikit-learn, XGBoost, TensorFlow, etc. is recommended).

PREDICT ENERGY EFFICIENCY:

Build a machine learning model that can predict the Energy Efficiency Rating of a building.

IDENTIFY INEFFICIENCIES:

Use the data to identify buildings with high energy consumption or inefficiencies and suggest actionable recommendations for improving energy efficiency.

GENERATE ACTIONABLE INSIGHTS:

Based on your model's predictions, provide actionable recommendations to improve energy efficiency. Recommendations might include upgrading lighting, HVAC systems, improving insulation, or implementing energy-saving technologies.

KEY TASKS:

DATA PREPROCESSING & FEATURE ENGINEERING:

Clean the data by handling missing values, outliers, and any inconsistencies.
Normalize or scale the data if necessary.
Engineer new features that may be predictive of energy inefficiency, such as energy consumption per square foot or per occupant.

KEY TASKS:

MODEL DEVELOPMENT:

Use machine learning techniques to build a model that predicts the Energy Efficiency Rating of buildings.
Test various algorithms like linear regression, random forest, gradient boosting, or neural networks.
Tune hyperparameters and validate the model's performance.
Insights & Recommendations:
Based on the model's predictions, identify buildings that are highly inefficient and suggest practical improvements. For example, reducing peak hour consumption, upgrading insulation, or increasing renewable energy use.