

## *Mine Automation and Data Analytics Lab Assignments*

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### **LAB-8**

#### ***Question 1***

Estimate Rainfall from Temperature and Humidity using Linear Regression **{Use weather dataset}** <https://www.kaggle.com/datasets/zaraavagyan/weathercsv>

- Objective: Use linear regression to estimate Rainfall based on MinTemp, MaxTemp, and Humidity values.
- Target Variable: Rainfall
- Features: MinTemp, MaxTemp, Humidity9am, Humidity3pm
- Use Case: Helps in understanding rainfall triggers and irrigation planning.

#### ***Question 2***

Classify Days as Hot or Not using Support vector machine (SVM) **{Use weather dataset}** <https://www.kaggle.com/datasets/zaraavagyan/weathercsv>

- Objective: Classify whether a day is hot (MaxTemp > 30°C) or not using features like MinTemp, Humidity, and Rainfall.
- Target Variable: Binary class: 1 = Hot Day, 0 = Normal/Cold Day
- Features: MinTemp, Humidity9am, Humidity3pm, Rainfall
- Use Case: Useful for issuing heatwave warnings in summer.

#### ***Question 3***

Classify States Based on Gender-Specific Cancer Risk using Support vector machine (SVM) **{Use cancer dataset}** <https://corgis-edu.github.io/corgis/csv/cancer/>

- Objective: Classify states as having a female-dominant or male-dominant cancer prevalence using gender-separated cancer rates.
- Target Variable: Binary class: 1 = Female rate > Male rate, 0 = otherwise
- Use Case: Gender-specific resource allocation for cancer awareness and treatment.