

Mine Automation and Data Analytics Lab Assignments

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 ($\text{MaxTemp} > 30^{\circ}\text{C}$) 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.