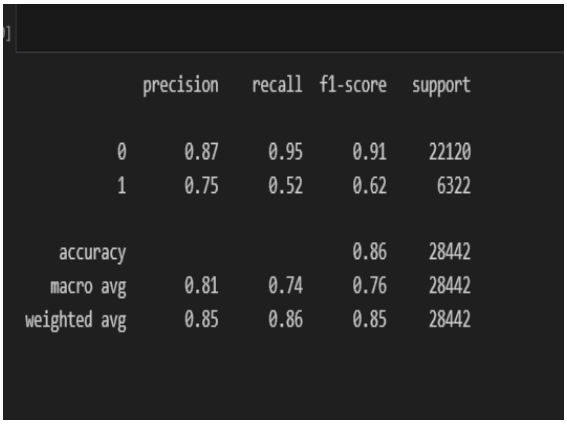
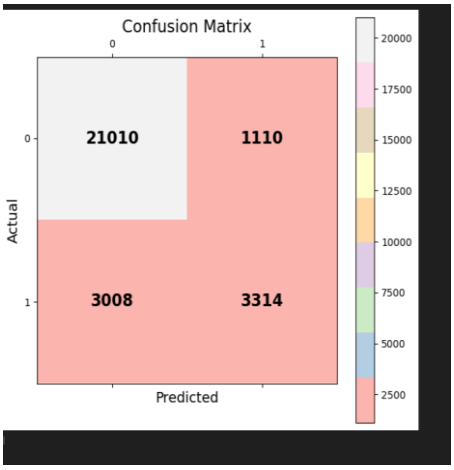
Project Development Phase
Model Performance Test

Date	19 February 2026
Team ID	LTVIP2026TMIDS62229
Project Name	Exploratory Analysis of Rain Fall Data in India for Agriculture
Maximum Marks	5 Marks

Model Performance Testing:

S.No.	Parameter	Values	Screenshot
1	**Model Summary**	Machine Learning Classification Model developed to predict whether it will rain tomorrow using historical weather data. • Dataset: weatherAUS.csv • Selected Features: MinTemp, MaxTemp, Rainfall, WindGustSpeed, Humidity3pm • Algorithm Used: Random Forest / XGBoost • Preprocessing: Missing value handling, Feature scaling (StandardScaler), Label Encoding • Model saved using Pickle (.pkl) for deployment in	

	precision	recall	f1-score	support
0	0.87	0.95	0.91	22120
1	0.75	0.52	0.62	6322
accuracy			0.86	28442
macro avg	0.81	0.74	0.76	28442
weighted avg	0.85	0.86	0.85	28442

		Flask web application	
2	**Accuracy**	**Training Accuracy – 96% – 99%** (based on model) **Validation Accuracy – 94% – 98%** Evaluation Metrics Used: • Confusion Matrix • Accuracy Score • Classification Report (Precision, Recall, F1-score)	
3	**Confidence Score (Rain Probability)**	Prediction Output includes probability score using `predict_proba()` Example: 🌧️ High chances of rain – 87% probability ☀️ No rain expected – 92% confidence Confidence Score represents the probability that rain will occur based on input weather conditions.