**Semester Project-III**

**TY CSE (DS) Logbook Contents**

**A.Y: 2025-26**

Date : 18/8/2025 to 30/8/2025

1. **Introduction**

**Problem Statement**

* Autism Spectrum Disorder (ASD) is a neurological disorder affecting communication, social interaction, and behavior.
* Current diagnostic methods are not standardized, subjective, and time-consuming.
* Delay in diagnosis impacts early intervention and support for children with ASD.
* Need for an automated and accurate system to assist in early prediction of Autism.

**Objectives**

* To preprocess data using cleaning, feature engineering, class balancing, and standardization.
* To apply machine learning algorithms (Logistic Regression, SVC, XG Boost) for Autism prediction.
* To evaluate models and select the one with the best accuracy and generalization.

**Application of you Project**

* Early screening tool in hospitals and clinics.
* Useful for schools/child development centers to identify children at risk.
* Helpful in rural and resource-limited areas where access to specialists is low.
* Decision-support system for doctors to reduce manual workload and improve accuracy.

Date:1/09/2025 to 13/09/2025

1. **Literature Survey**

**Background**

* Machine Learning is increasingly applied in healthcare for early prediction of diseases.
* Autism detection research focuses on behavioral, demographic, and clinical data.
* Combining multiple features improves prediction accuracy but raises challenges like data imbalance.

**Limitations of Existing Systems**

* Small and limited datasets affecting generalization.
* Imbalanced datasets leading to biased predictions.
* Models not scalable or accessible for wider use.