



## DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

### III B. TECH II SEM

#### TITLE and ABSTRACT SUBMISSION FORM

#### Application Development – Data Analytics Explore (MR22-1CS0174)

<b>Title of the Application</b>	<b>"Amazon Sales Forecasting &amp; Analytics: Trends, Insights, and Performance"</b>
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#### Batch Details:

S.No	Batch No.	Registered No.	Student Name
1	B-91	2211CS010379	M.SAIRAM
2		2211CS010438	P.NIKHITHA
3		2211CS010367	M.VINAY
4		2211CS010209	G.KISHORE

**Guide Name: MR.G.RAJU**

#### Abstract:

The Amazon Sales Data Analysis project is an interactive dashboard designed to explore and forecast Amazon sales trends using data visualization and predictive analytics. Built with Dash, Plotly, Pandas, and Machine Learning algorithms, the application provides insights into key sales metrics such as revenue, profit, units sold, and regional sales performance. The dashboard allows users to filter the data by product category, region, and order priority, providing customized insights into sales trends, price distributions, and profitability. Predictive modeling techniques, including Linear Regression and PyCaret, are used to forecast future sales trends and evaluate model performance with metrics like Mean Absolute Error (MAE), Mean Squared Error (MSE), and  $R^2$  score. The application preprocesses raw sales data, handling missing values and structuring fields such as total revenue, total cost, and unit price for analysis. The dashboard highlights important patterns such as order processing times, cost outliers, and sales trends based on order priority, helping businesses refine strategies. Machine Learning techniques like Lasso and Least Angle Regression (LARS) are explored for feature selection and model optimization. By integrating interactive visualizations with predictive analytics, this project empowers businesses to improve sales strategies, optimize inventory, and enhance profitability in the competitive e-commerce landscape.

**Signature of the Guide**