**(i) Problem Statement:**  
Predicting Online Shopper Purchase Intention Using Machine Learning

**(ii) Objectives:**• To build a classification model that predicts whether an online user will complete a purchase based on their session behavior.  
• To preprocess and encode categorical and numerical data for effective model training.  
• To compare the performance of Logistic Regression and Decision Tree models.  
• To evaluate model accuracy using metrics such as accuracy score, confusion matrix, and classification report.

**(iii) Methodology:**• Data Preparation: The Online Shoppers Intention dataset is cleaned by handling missing values and encoding categorical features (Month, VisitorType, Weekend) using Label Encoding. The target variable (Revenue) is converted to binary.  
• Feature Scaling: All numerical features are standardized using StandardScaler to normalize input for the model.  
• Modeling: The dataset is split into training and test sets. A Logistic Regression model is trained by default, with an option to switch to a Decision Tree Classifier.  
• Evaluation: The model is evaluated using accuracy, confusion matrix, and classification report (precision, recall, F1-score).  
• Prediction: A sample user profile is created to test the model’s prediction on whether a user will likely make a purchase.

**(iv) Outcomes:**• The model successfully classifies user sessions based on their likelihood of completing a purchase.  
• Logistic Regression showed consistent performance and interpretability, while the Decision Tree provided more flexibility for non-linear patterns.  
• Evaluation metrics confirmed the model’s ability to distinguish between converting and non-converting sessions.  
• Sample predictions demonstrate real-world applicability in identifying high-intent users for personalized marketing or interventions.