

### Project Name: Predicting Customer Purchase Behavior

Understanding and predicting customer purchase behaviour is crucial for businesses aiming to optimize their marketing strategies, improve customer retention, and increase sales. By analysing customer demographics, purchase history, and engagement with the website, it is possible to develop a predictive model that estimates the likelihood of a customer making a purchase.

### Objective

The objective of this project is to develop a machine learning model that can predict whether a customer will make a purchase based on various demographic and behavioural features. The model will be trained on historical customer data and will aim to provide accurate predictions to support business decision-making processes.

### Problem Statement

Given a dataset containing customer information, including the following variables, develop a predictive model to estimate the likelihood of a customer making a purchase:

- **Age:** Customer's age
- **Gender:** Customer's gender (0: Male, 1: Female)
- **Annual Income:** Annual income of the customer in dollars
- **Number of Purchases:** Total number of purchases made by the customer
- **Product Category:** Category of the purchased product (0: Electronics, 1: Clothing, 2: Home Goods, 3: Beauty, 4: Sports)
- **Time Spent on Website:** Time spent by the customer on the website in minutes
- **Loyalty Program:** Whether the customer is a member of the loyalty program (0: No, 1: Yes)
- **Discounts Availed:** Number of discounts availed by the customer (range: 0-5)
- **Purchase Status:** Likelihood of the customer making a purchase (0: No, 1: Yes)

### Deliverables

- Source code file from any IDE with all the steps.
- PowerPoint presentation
- Video explaining the tasks you have performed along with insights you have gained for Predicting customer purchase behavior.