

# PROJECT 8

## Project Description:

The Online Shopping System project facilitates an interactive platform for both administrators and users to manage and engage in shopping activities. Implemented in Python, it employs object-oriented programming principles to model users, administrators, categories of items, individual items, carts, and payment methods.

The core classes include:

1. **User:** Represents a user who can log in, view available items, add items to a cart, and make purchases. Each user has a unique username, password, and a cart for storing selected items.
2. **Admin (inherits from User):** Extends the User class with additional functionalities tailored for administrators. Admins can manage categories of items, add new categories, update existing categories, add items to categories, and update item details such as prices.
3. **Category:** Represents a category of items (e.g., Footwear, Clothing, Electronics). Each category maintains a collection of items belonging to it and provides methods to add new items and update existing item prices.
4. **Item:** Represents individual items available for purchase. Each item has a name and a price.

5. **Cart:** Stores items selected by users for purchase. It allows users to add items, remove items, and view the current list of items in the cart.
6. **Payment:** Represents a payment method. It provides a common interface for processing payments and is inherited by specific payment methods like UPI and Debit Card.
7. **UPIPayment (inherits from Payment):** Implements the UPI payment method, inheriting functionality from the Payment class and adding specifics for processing payments using UPI IDs.
8. **DebitCardPayment (inherits from Payment):** Implements the debit card payment method, inheriting functionality from the Payment class and adding specifics for processing payments using card numbers.

### **Summary:**

The Online Shopping System project integrates multiple classes to simulate an online shopping experience. Admins start by adding categories and items to the system. Users can then register, log in, browse available items across categories, add items to their cart, and proceed to checkout using different payment methods.

The Admin class enables administrators to manage the inventory by adding new categories, updating category names, adding items to categories, and adjusting item prices. Each category maintains its list of items, allowing for easy updates and additions.

Users interact primarily through their cart, which stores selected items until they are ready for purchase. They can add items, remove items, and view the current contents of their cart. Upon checkout, users can choose

between UPI or debit card payments, with respective classes handling payment processing.

The system maintains clarity and modularity, utilizing inheritance and encapsulation to organize functionalities effectively. It provides a robust foundation for extending features such as order history, user reviews, and advanced search functionalities in a future iteration. Overall, the Online Shopping System project demonstrates fundamental object-oriented programming concepts applied to simulate a comprehensive online shopping experience