 **BAHRIA UNIVERSITY (KARACHI CAMPUS)**

**(OEL-II) - SPRING 2023**

# OBJECT ORIENTED PROGRAMMING LAB (CSL-210)

Class: **BSE 2(B)** Time: 90 Minutes

Course Instructor: **Engr.Mahawish Submission Deadline: 13 June, 2023**

Lab Instructor: **Engr. Saniya Sarim** Max Marks: 6

**Q1:**In this scenario, you have to create an Online Shopping System that allows users to browse and purchase various products. **[CLO 3 : 6 Marks]**

***Follow* the provided instructions to create required classes.**

**Classes:**

1. **Product:**

The Product class represents a product available for purchase.it has the following attributes: name , price,description etc.It is an abstract class that defines common attributes and methods for different types of products.

It provides methods for displaying product details and calculating the total price.

1. **ElectronicProduct,ClothingProduct and Cosmetics.**

The ElectronicProduct and ClothingProduct classes are subclasses of the Product class.

They specialize in electronic and clothing products, respectively.

They override the displayDetails() and calculateTotalPrice() methods of the Product class to provide specific behavior.

Discount should be given on some products . Also tell the manufacturer of product.

1. **ShoppingCart:**

The ShoppingCart class represents a user's shopping cart.

It encapsulates information such as the user's ID, selected products, and the total price.

It provides methods for adding products, calculating the total price, and displaying the cart contents.

1. **PaymentGateway (Interface):**

The PaymentGateway interface defines a contract for implementing payment processing.

It includes methods for validating payment, processing payment transactions, and generating payment receipts.

1. **User**

The User class represents a user in the online shopping system.

It encapsulates information such as the user's ID, name, and associated shopping cart.

It provides methods for browsing products, adding products to the cart, and making payments.

**Association:**

The User class has an association with the ShoppingCart class, representing the user's shopping cart.

The ShoppingCart class has an association with the Product class, representing the selected products.

**All products in the shopping cart must be added to generate the total bill of user.**

**Implement the above mentioned classes and concepts. Show output of maximum methods and association . Exception Handling must be performed where necessary.**