**SDA Project:**

**Daraz (E-Commerce Store)**

**Design Methodology:-**

* The agile methodology encourages an iterative and collaborative approach to system design and development. For the e-commerce platform, we can adopt agile principles to create a flexible and adaptive system. Instead of creating extensive class structures, the focus will be on continuous development while gathering continuous feedback from user.
* In the agile approach, we'll start with a minimal viable product (MVP) that addresses core functionalities. For instance, the initial version might only include basic user registration, product listing, and a simple shopping cart. The focus is on getting a working version quickly and then refining it based on user feedback.
* The concept of classes will still exist, but the focus will be on creating small modules that can be easily adapted or replaced as the project develops. Object-oriented principles like encapsulation and modular design will help in creating maintainable code
* Instead of strictly following a rigid hierarchy of classes, the agile methodology encourages a more dynamic and responsive approach to software development, ensuring that the system remains relevant and adaptable in a rapidly changing environment.
* The system can be designed using object-oriented programming (OOP) principles. One possible approach is to create classes such as User, Product, ShoppingCart, PaymentGateway, Order, and CustomerSupport. The User class can have methods for registration, login, and profile management, while the Product class can store information about each item for sale. The ShoppingCart class can handle adding and modifying items, and the PaymentGateway class can manage secure payment processing. The Order class can handle order placement and confirmation, and the CustomerSupport class can provide support to users.
* Using OOP principles can make the system more modular, reusable, and maintainable. Each class can encapsulate its own data and functionality, reducing the complexity of the overall system. Inheritance and polymorphism can also be utilized to reduce code duplication and increase flexibility. Overall, OOP can provide a well-structured, organized, and extensible system design for this e-commerce platform.

**REQUIREMENTS :-**

* The system should allow users to register for an account and create a profile. The system should capture and store user data, such as name, email address, and password. The user profile should allow users to manage their account information, including personal details, shipping address, and payment methods.
* The system must allow user to login. If the user already has account he can login with email and password.
* The system should have a product catalog that displays all the products available for sale on the platform.
* The catalog should allow users to browse and search for products using various filters, such as category, price range, and brand. The product catalog should also display relevant information about each product, such as product images, descriptions, features, and specifications.
* The system should allow users to add products to their shopping cart and modify the cart as needed.
* Description: The shopping cart should display the selected products, quantities, and prices, and provide users with options to remove products, update quantities, and apply discounts. The shopping cart should also calculate the total order value, including taxes and shipping charges.
* The system should integrate with one or more payment gateways to process payments securely.
* The payment gateway should allow users to pay using various payment methods, such as credit/debit cards, mobile wallets, and bank transfers. The payment processing should be fast, reliable, and secure.
* The system should display detailed information about each product on the product detail page.