**CLASS DIAGRAM FOR OOP PROJECT (E-COMMERCE WEBSITE)**

User

(Abstract Class)

Shopping Cart

Book Store

Customer (Inherited Class)

Admin (Inherited Class)

Book

(Abstract Class)

Religious Book (Inherited Class)

Fictional Book (Inherited Class)

Academic Book (Inherited Class)

* Book and User are **abstract classes** with pure virtual functions.
* Academics, fictional and religious books **inherits** from Book class.
* Customer and Admin **inherits** from User class.
* **Polymorphism** is used through getDescription() method in the Book class where each derived class overrides the method with its own behaviors.
* Similarly, pure virtual getRole() method in the User class overrides in Customer and Admin classes.
* All the members are marked as private or protected in classes ensuring **encapsulation**.
* Shopping Cart is a component within Customer class showing **composition**.
* Users can interact with Book Store to browse and purchase books ensuring **association.**
* Book Store is implemented as **singleton** to ensure only one instance exists globally.