

Lab 03 Tasks

- Task 1:** Ahmed, a school teacher in Lahore, loves using **MarkerPens** to explain lessons on the whiteboard, but he often forgets to check if they still have ink. To avoid interruptions in his classes, he needs a system to track his markers. Create a **MarkerPen** class with attributes like **brand**, **color**, **inkLevel**, and **refillability**. Implement methods to **write**, which decreases the ink level, and **refill**, which restores the ink if the marker is refillable. Help Ahmed by designing a program where he can check the status of his markers and refill them when needed.
- Task 2:** Fatima, a university student in Karachi, loves drinking tea while studying, but she often loses track of how much is left in her mug. She needs a smart way to monitor her tea consumption. Design a **TeaMug** class with attributes for **brand**, **color**, **capacity**, and **currentFillLevel**. Implement methods to sip tea (reducing the fill level), refill the mug, and check if it's empty. Fatima needs a system to remind her when it's time for a fresh cup—can you create one?
- Task 3:** Hassan is a wedding planner in Islamabad, managing multiple events every month. He struggles to keep track of tasks for different clients. To organize his schedule, he needs a Planner that allows him to store one task per day, update it when needed, and review his schedule at any time. Implement a **Planner** class that contains an array for each month, stores one task per day, and includes methods to add, remove, and display tasks. Help Hassan create a system where he can efficiently manage wedding bookings and event schedules.
- Task 4:** Bilal and Ayesha, two friends from Lahore, are always debating about whose laptop is better. They need a system that can store and display the specifications of different laptop models. Create a **Laptop** class with attributes like **brand**, **model**, **processor**, **RAM**, and **storage**. Implement methods to turn on/off, run a program, and check specifications. Your task is to design a system where Bilal and Ayesha can enter details about their laptops and compare them.
- Task 5:** Zainab owns a small grocery store in Multan and wants to improve her inventory management. She needs a program to keep track of items and their prices, update prices when necessary, and generate a receipt for customers. Design a **GroceryStore** class with a list of items and prices, along with methods to add new items, update prices, view inventory, and generate a receipt. Help Zainab create a digital system to make her store more efficient and customer-friendly!