

Lab 03 Tasks

Task 01

Develop a class named "BoardMarker" possessing the subsequent characteristics:

- **Brand** (such as Dollar, etc.)
- **Shade** (black, red, etc.)
- **Refillable** (Boolean - indicating whether it can be refilled or not)
- **Ink Status** (Boolean - indicating if the ink is depleted or not)

Formulate appropriate **getter** and **setter** methods for the attributes of this class. Additionally, implement the following methods:

- A **writing method** with a check to verify if the ink has run out. This method should exhibit an appropriate message based on the ink status.
- A **refill method** for the board marker. This method should first confirm if the marker is refillable or not and then display a relevant message.

Illustrate the class functionality by creating an object, setting the values, and then invoking the methods.

Task 02

Establish a class termed "WaterBottle."

This class encompasses attributes like **company** (manufacturer), **color**, and **water capacity**. The **water capacity** is recorded in both **litres** (l) and **millilitres** (ml).

Define variables and methods for this class, incorporating **getters** and **setters**. Additionally, introduce a method to update the **water capacity** (both in **litters** and **millilitres**) after prompting the user regarding the amount of water consumed, presuming the input is consistently in **millilitres**.

Exhibit the functionality of the **water bottle** within the **main** method.

Task 03

Craft a class denominated "Calendar."

This **Calendar** class should possess 12 arrays, each representing a month of the year, along with a variable storing information about the current year.

Users can allocate **tasks** for each day, with one entry allowed per day.

Incorporate the following methods within this class:

- **Addition of a task**: This function accepts task details, **date**, and **month** as parameters and adds the **task** to the specified day.
- **Removal of a task**: Accepts the **date** and **month** as parameters to eliminate the **task**.
- **Display tasks**: This method traverses through all months and prints the allocated tasks.

Instantiate a calendar object, input 5-6 tasks manually, demonstrate task removal, and display the updated task list.

Task 04

Forge a class labelled "Smartphone" possessing the following attributes:

- Brand
- Model
- Display Resolution
- RAM
- ROM
- Storage

Develop `getter` and `setter` methods for these attributes. Additionally, define specific actions smartphones can perform, such as:

- Making phone calls
- Sending messages
- Connecting to Wi-Fi
- Browsing the internet

Create distinct smartphone objects, set their attributes using `setter` functions, and exhibit their attributes after retrieving them using `getter` functions.

Task 05

Construct a class for a stationary shop.

This class maintains lists for all items it sells (hint: an array of strings) and their corresponding prices (hint: an array of prices).

Design a menu-driven program to:

- Enable the shop owner to add items and their prices.
- Retrieve the list of items.
- Modify the prices of items.
- Display all items along with their prices.

Generate a receipt that the shopkeeper can share with customers. This receipt can only be generated after the shopkeeper inputs the items and their quantities bought by the customer.