

Interface-Based Implementation – Smart Device Control

Objective

Design a Java application that demonstrates the use of **interfaces** in object-oriented programming. The program should define an interface `RemoteControl` with common actions that can be performed on various smart devices such as **TV**, **AC**, and **Speaker**. Each device should implement this interface and provide its own behavior for the control operations.

Requirements

1. Define an interface `RemoteControl` with the following abstract methods:
 - o `void powerOn()`
 - o `void powerOff()`
 - o `void increaseVolume()`
 - o `void decreaseVolume()`
 2. Create the following classes that implement the `RemoteControl` interface:
 - o **TV**
 - Implements all methods with behavior specific to a television
 - o **AC (Air Conditioner)**
 - Implements all methods with behavior specific to an air conditioner
 - o **Speaker**
 - Implements all methods with behavior specific to a speaker
 3. In the `main()` method of a `SmartDeviceDemo` class:
 - o Create an interface reference (`RemoteControl`)
 - o Assign it to each class object (`TV`, `AC`, `Speaker`)
 - o Call all interface methods using that reference
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Sample Output

```
==== TV Control ====
TV is now ON.
TV volume increased.
TV volume decreased.
TV is now OFF.
```

```
==== AC Control ====
```

AC is now ON.
AC cooling increased.
AC cooling decreased.
AC is now OFF.

==== Speaker Control ====
Speaker is now ON.
Speaker volume increased.
Speaker volume decreased.
Speaker is now OFF.
