When a virtual port is mapped to a physical pin in your GPIO module, the behavior of the virtual port should dire

*1. Physical Pin Configured as Output

Data Flow: When the physical pin is configured as an output, the virtual port should mirror the behavior of the physi
The virtual port **writes** data to the same physical pin.
Any **write** to the virtual port should directly translate into setting the output value of the physical pin.
The direction of the virtual port is **implicitly output**, since it is attached to a physical output pin.
Enable Behavior: If virtual ports are supported and enabled, writing to the virtual port should behave as if you are v
The virtual port output should be enabled when the corresponding physical pin's output is enabled.

Example:

Physical pin p is configured as an output.
Virtual port v is mapped to pin p.
Writing 1 to virtual port v should output 1 on physical pin p.

*2. Physical Pin Configured as Input

Data Flow: When the physical pin is configured as an input, the virtual port should reflect the data coming **from** the
The virtual port can **read** the value of the physical pin but cannot write to it.
Any **read** from the virtual port should return the current value of the physical pin.
The virtual port direction is implicitly **input**, since it is attached to a physical input pin.
Enable Behavior: If virtual ports are supported and enabled, reading from the virtual port should behave as if you ar
The virtual port input should be enabled when the physical pin's input is enabled.

Example:

Physical pin p is configured as an input.
Virtual port v is mapped to pin p.
Reading from virtual port v should return the current state of physical pin p (either 0 or 1).

*3. Physical Pin Reconfiguration (Dynamic Behavior)

If the direction of the physical pin changes dynamically during runtime, the virtual port's behavior should immediately
If a physical pin switches from **input to output**, the virtual port should switch from **read-only** to **write-enabled**.
If a physical pin switches from **output to input**, the virtual port should switch from **write-enabled** to **read-only**.
The virtual port should also respect any changes to the physical pin's enable signal (e.g., when a pin is disabled or tri-st

*Summary of Correspondence

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Physical Pin Mode	Virtual Port Behavior	Direction	Enable I
Output	Writes to virtual port propagate to physical pin	Implicit Output	Enabled if physical p
Input	Reads from virtual port reflect the physical pin value	Implicit Input	Enabled if physical

*Additional Considerations

Virtual-to-Physical Map: Ensure that your `virtualToPhysicalMap` correctly identifies which physical pin a virtual
Enable Flag: The virtual port enable flag should be checked to ensure that virtual ports are supported in the current

By maintaining this mapping behavior, you can ensure that virtual ports act as an abstraction over physical pins, s