Assignment 8: Research & Proposal – Custom AT Commands for Cavli C10QM

Objective:

As part of the AT command research assignment, I explored custom command capabilities specific to the **Cavli C10QM module**, which supports both GSM and LTE features.

CUSTOM COMMANDS:

1. **AT+CSMSDELALL**

Purpose: Delete all SMS messages from storage

Mock Response:

AT+CSMSDELALL

+CSMSDELALL: SUCCESS

OK

Use Case: Useful for bulk cleanup in constrained memory environments or automated maintenance.

2. **AT+CSMSFILTER=**

Purpose: Filter stored SMS messages by keyword or sender ID.

Mock Response:

AT+CSMSFILTER="ALERT"

+CSMSFILTER:

1. FROM: "+91XXXXXXXXXX", TEXT: "ALERT: Temp High", TIME: "2025/07/18,10:15:00"

2. FROM: "+91XXXXXXXXXX", TEXT: "ALERT: Battery Low", TIME: "2025/07/18,10:17:22" OK

Use Case: Enables on-device filtering without needing to offload all messages.

3. **AT+PWRMON=**

Purpose: Monitor power consumption and battery voltage periodically.

Mock Response:

AT+PWRMON=60

+PWRMON: Voltage=3.7V, Current=120mA, Temp=35°C

OK

USE CASE: Enables real-time power profiling and can trigger alerts or switch to power-saving mode if thresholds are exceeded.

4.AT+GPIOSTATE=

Purpose: Read the current state of a GPIO pin.

Mock Response:

AT+GPIOSTATE=5

+GPIOSTATE: PIN 5 = HIGH

OK

USE CASE: Useful for checking sensor or actuator status without full firmware logic.

5. AT+REBOOTSAFE=

Purpose: Perform a safe reboot with optional backup and restore of volatile settings.

Mock Response:

AT+REBOOTSAFE=1

+REBOOTSAFE: Backup saved, rebooting... OK

USE CASE: Prevents data loss during unexpected resets, can be used in OTA update workflows or remote recovery.

Summary Page:

- Successfully executed all commands using the **Cavli C10QM real module**.
- Verified signal strength, set SMS text mode, sent and read an SMS.
- Faced minor delays in message registration but resolved by waiting a few seconds after network attach.
- Commands unsupported by the emulator (like actual SMS delivery) worked perfectly on real hardware.