**Pseudocodes**

**Getting the error code:**

-START

-FOR EACH device IN connected\_devices DO

-error\_code = get\_error\_code(device)

-IF error\_code IS NOT null THEN

-send\_to\_database(device, error\_code)

END

-END IF

-END FOR

-PRINT "No errors found."

-END

**Sending the error code to user:**

-START

-error\_data = get\_error\_from\_database()

-IF error\_data IS NOT null THEN

device = error\_data.device

code = error\_data.code

-message = "The error code " + code + " has been seen on device " + device

-send\_via\_wifi(message)

-IF message\_sent\_successfully THEN

-PRINT "Message has been sent successfully."

-ELSE

-PRINT "Failed to send the message."

-END IF

-ELSE

-PRINT "No error data found in the database."

-END IF

-END

**Check the maintenance:**

-START

-maintenance\_counter = get\_current\_maintenance\_value()

-maintenance\_counter = maintenance\_counter + monthly\_increment

-update\_maintenance\_value(maintenance\_counter)

-IF maintenance\_counter >= 100 THEN

message = "Maintenance time has been reached!"

send\_notification\_to\_app(message)

PRINT "User notified."

-ELSE

PRINT "No maintenance needed. Current counter: " + maintenance\_counter

-END IF

-END

**Showing device status:**

-WHEN user login the Mobile application DO

-send\_signal\_to\_database("request\_device\_status")

-database\_forward\_signal\_to\_cloud()

-cloud\_send\_signal\_to\_microcontroller()

-device\_status = microcontroller\_check\_device\_status()

-cloud\_receive\_status(device\_status)

-database\_store\_status(device\_status)

-app\_display\_status\_to\_user(device\_status)

-END

**Water Heater Control:**

-WHILE true DO

-currentTemp = readTemperatureSensor()

-targetTemp = getTargetTemperature()

-IF currentTemp < targetTemp THEN

increaseTemperature()

-ELSE

maintainCurrentTemperature()

-END IF

-END WHILE