**Project goal:**

The goal of this project is to implement temperature monitoring sensor

• The sensor should constantly check (1s) the current temperature

• The sensor should save the measured temperature every 1 minute in the file

• It should have two thresholds: warning and critical temperature thresholds

• When the temperature increases above the warning threshold it should switch on the red LED and write the event into the events log-in file

• When the temperature increases above the critical threshold it should start blinking the red LED, give the constant sound signal, and write the event into the events log-in file

• When the temperature decreases the threshold, it should disable corresponding notifications: LED, sound, and write the event in to the event log-in file

• The log record should have the following data: current date and time, the log severity, and the message

• The user could disable the buzzer signal by pressing the button

• The user should be able to perform the following commands:

◦ Set date and time

◦ Set warning threshold

◦ Set critical threshold

◦ Print log

◦ Clear log

• The monitor sensor after boot should use the latest settings (store them in a flash)

• Files for event and temperature logs shall be stored on SDCARD.

• It is possible to remove the SD card and read the logs in windows (just putting the SD card in the computer).

Use FATFS for that purpose.

The project should be implemented on FreeRTOS using C++