# Read temperature with an ARM32 development kit and transfer the value to a cloud service

## Requirements

The purpose of this project is to create a software for a development kit which monitors the temp. sensor every X min (this parameter can be changed later by the user) and transmits it to a cloud service.

The time of reading the sensor is recorded.

The dev. kit transmits the acquired data (seq. number, timestamp and the temperature) to the selected cloud service (through the internet).

The dev. kit shows the last monitored temp. value on the LCD screen (along with sequence number and time stamp).

The dev. kit transmits the last monitored temp. value through the LED by means of Morse code.

The dev. kit must save the last 20 monitored values to FLASH memory.

When the user presses the button, the dev. kit reads the previous values from the flash memory and shows on the LCD screen.

The user can set various parameters to dev. kit using a NFC device.

The user can send various commands to dev. kit using a NFC device.

The dev. kit shall save all configuration parameters to flash memory.

## Main use cases

1. Init Hardware
2. Init LCD screen
3. Init Ethernet and connect to internet time service
4. Connect to Claud Service
5. Read temperature sensor
6. Send data to cloud service
7. Save data to flash memory
8. Print data on LCD screen