HOCHSCHULE
RHEIN-WAAL
Rhine-Waal University
of Applied Sciences

LABORATORY

Microcontroller

4

EXPERIMENT:

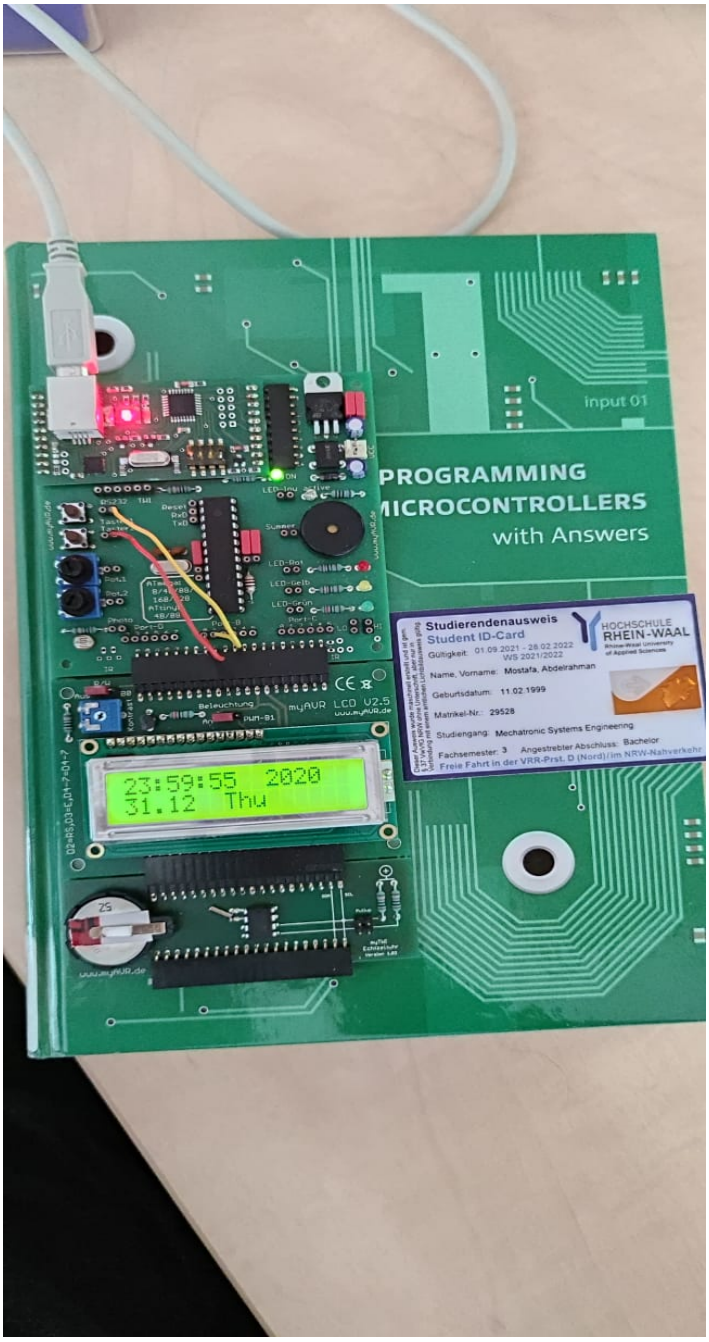
Real Time Clock

Write your name in every sourcefile you edit and compile the code with your matriculation number (variable in the template). All files should contain all names of the persons who made changes. Do use the @author tag for this (as available in the headline of template files).

Task 1:
Implement a clock with the LCD display and the DS1307. The two keys to be used are:

- **Key 1 (PB0):** Toggle the CH bit to run/freeze the clock
- **Key 2 (PB1):** Set the clock to a defined moment:
  - Second = 55;
  - Minute = 59;
  - Hour = 23;
  - Day = 31;
  - Month = 12;
  - Year = 20;
  - Weekday = 4;

The RTC clock should remember the last state (running or stopped) and continue in the same state after the MVR board is disconnected from the power supply and connected again. In the case of a running state, the updated time should be displayed after a such reconnection.



Task 2:
There is free ram memory in the RTC device (0x08 to 0x3F). Write your course and marticulation number to this ram memory as a string:

- "EL12345"
- "SE12345"

The main problem I faced was that there were no template file for task 2, so I copied task1 files and edited the main.c file. After I made a research and found that I can write a char to the RAM, I wrote this simple code.