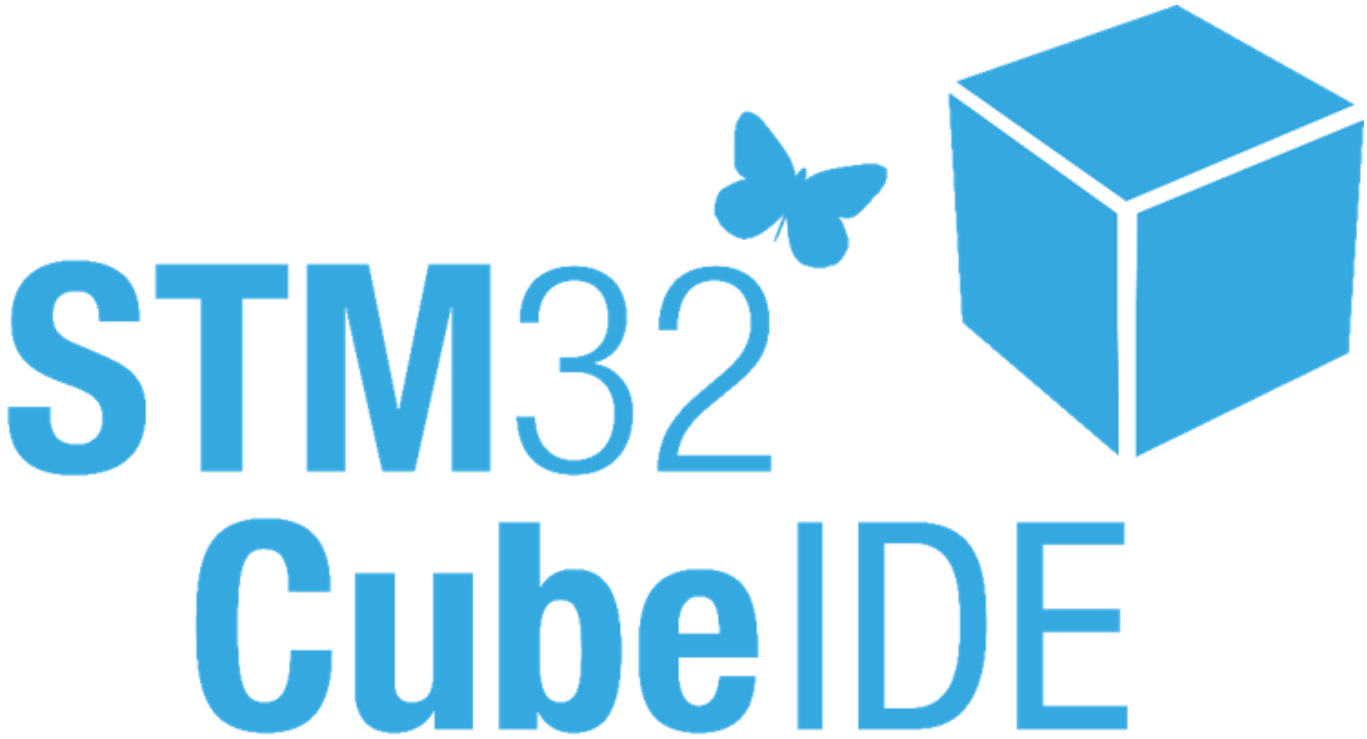
STM32-Getting-started



This repo is a product of a course at DTU (Denmarks Technical University). The purpose of this repo is give a short introduction to the stm32CubeIde on a stm32 developer board. The diffrent chapters is based on the book "Programming with stm32 - getting stared with nucleo board and c/c++" by Donald Norris.

Chapter 1 Hello world!

- Install STM32CubeIDE
- Create a STM32 Project
- Toggle the on board LED every second.
- Toggle a external LED on a breadboard every second.
- Write “Hello There!” to putty over uart.

Chapter 2 GPIO

- Configure GPIO pins to input and output
- Set Pull-Down or Pull-Up
- Configure GPIO speed

Chapter 3 Interrupts

- How to setup a interrupt handler

- Toggle an led with a external interrupt trigger
- Set hierarchy of a interrupt handler

Chapter 4 Timers

- Timers
- How to initialize a timer
- How to use timers to trigger interrupt

Chapter 5 Communication xx

- How to configure Usart
- Setup STM32CubeIDE for serial communication
- How to trasnsmit over sieral from the nucelo board
- How to receive from serial on the nucelo board

Chapter 6 ADC & DAC

- What a ADC is
- How to enable ADC
- How to use ADC to read a measurement

Chapter 7 Pulse Width Modulation

- Setup timer for PWM
- Dimming a led

Chapter 8 Direct Memory Access

- What DMA is
- How to enable DMA
- How to use DMA to receive an input

Chapter 9. I2C - Inter-integrated Circuit

- How to setup I2C in STM32CubeIDE
- How to transmit over I2C
- How to receive over I2C

Chapter 10. RTOS

- What is RTOS
- How to setup RTOS
- How to setup two tasks in RTOS