Intro to embedded programming

Agenda

1. Intro to MPLAB X IDE
2. Flashing your own first program
3. Reading a datasheet
4. Playing with GPIO

Create project

- We use PIC18F24k22 boards
- Create new main file in source directory
- Copy and paste main.c
- Try flash the board and see if there are any errors

GPIO

- Logical vs Physical value
- Read logical values from pins
- Write logical values to pins

Reading the datasheet

- We will work with registers
- Each bit of those registers has some meaning
- Try to find out how to read and write value to a PIN
- Datasheet

Checkpoint

- TRISx - set pin to read (!write) state
- PORTx - read value from pin
- LATx - write pin value

Lets check the schematics

- Now we know how to work with pins
- See schematic
- Find out what pins are connected to the LED and switches

Checkpoint

- RA0, RA1, RA2 - LED
- RC0, RC1, RC2, RC3 - Switches

Assignment

- Be aware that LED is a quite powerful
- Assign LED to turn ON / OFF based on the switch

Delay

- First see the assemply of our code
- Window -> Debugging -> Output -> Dissasembly listing file
- Try to create a precise bussy delay for miliseconds.


That's all Folks!