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Milestone 1 MKEL1123: Familiarizing with the STM32F4 Development Board

Objective: To familiarize with STM32F4 board, IDE and verifying the development setup is functioning correctly.

Steps to configure GPIO for LED toggling (Blinky App)

1. Launch STM32CubeMX Software. Click on "**ACCESS TO BOARD SELECTOR**" to start on a new project. Choose "**NUCLEO-F446RE**" for the Commercial Part Number and click "**Start Project**" button.
2. Check the chosen package board at the pinout view in which for this project is **STM32F446RE**. The PA5 is assigned as the **GPIO_Output** that will be used as a pin to blink the Green LED.
3. On the Project Manager section, fill in the "**Project Name**" and "**Project Location**". **MDK-ARM** is selected as the Toolchain/IDE. Next, click "**Generate Code**".
4. Once the code is successfully generated, a pop-out window will appear. Select "**Open Folder**". Open the folder that stored the created project and launch the Keil Software file in which can be found in MDK-ARM folder.
5. Click "**Pack Installer"** to install the Devices and Board packages. Choose "**STM32F446RETx**" for the Devices and installed the required packs in the Device Specific option. Choose "**NUCLEO-F446RE (Rev.C)**" for the Board and install the required packs in the the Device Specific option.
6. Write the code to blink the LED in the infinite loop. Set the HAL_Delay to **0.5s**. Then, click the "**Rebuild all target files**" button. Build Output terminal will show the status of the run. After ensuring that there is no error in the code, click "**LOAD**". A successful return message will be displayed at the Build Output terminal to indicate that the code had already been programmed on the STM32F446RE development board.
7. Click the RESET button on the STM32F446RE board in which the switch is in black colour. Observe the delay of the Greed LEDs.

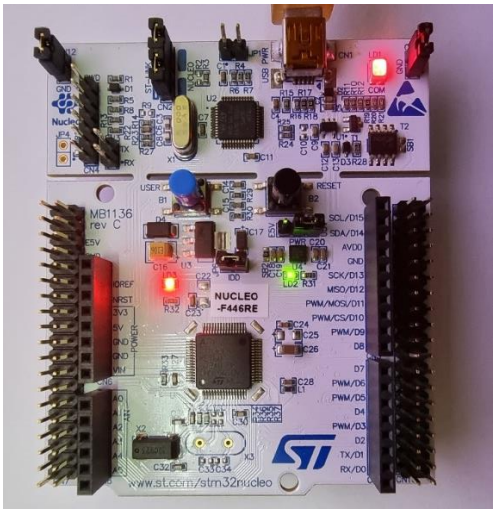

Figure 1 shows the Green LED on the STMF446RE Development Board is blinking

8. Change the delay to **0.1s** in the **main.c** code and repeat step 6, 7 and 8.

Conclusion: When the HAL_Delay is set to 0.5s, the green LED blinked slower compared to when the HAL_Delay is set to 0.1s. Thus, it can be concluded that the shorter the delay time, the faster the greed LED blinks.

Github link: https://github.com/amiruliman/blinkystm32f446

Video link: https://drive.google.com/drive/u/3/folders/1lyGioImqrgIxAhonaCa-j53KehWwoHM0