		MKEL 1123 ADVANCED MICROPROCESSOR SYSTEM	SEMESTER 20212022-1 (Group 3)
UTM UNIVERSITI TEKNOLOGI MALAYSIA	Faculty of Engineering (School of Electrical Engineering)	GROUP MEMBER'S: DATE:14/12/2021 1. AL-GHAZALI BIN AZMAN (MKE211008) 2. MUHAMMAD HANAFI AKMAL BIN ABDUL RAHMAN (MKE201090) 3.GHAZWAN ABDAL ALZAHAR SAFI (MKE191108)	

TOPIC: SETTING BLINKY APPLICATION INSTRUCTION

Material: **ARM Microprocessor (Nucleo-F446RE), USB A-mini-B & STM32CUBEIDE.1.8.0 SOFTWARE & Computer.**

1. Install & open the **STM32CUBEIDE.1.8.0** application by connecting the arm microprocessor to the computer using USB A to mini-B.

2. Click **start new STM32 project**. Properties for STM32 project will come up.

3. Select **Board Selector**-**NUCLEO-F446RE** then click **'Next'**.

4. Name the **Project-Blinky Project**-**Finish**- **Board Project Options (properties)**-click **'Yes'**-**Open Associated Perspective(properties)**-click **'Yes'**.

5. Set **LD2 [Green LED]** on the board-**PA5** is the port connected to the **build in** LED in microprocessor to blink- click **'Save'**- click D**evice Configuration Tool Code Generation** (to generate the code)-click **'Yes'**. (Already set by the application.no need to change the configuration).

6. Use **'main.c'**- Go to **'while'** coding area. Others coding area no need to code first.

While(1) { HAL_GPIO_WritePin(GPIOA,GPIO PIN_5, 1); **HAL_Delay (1000);** HAL_GPIO_WritePin(GPIOA,GPIO PIN_5, 0); **HAL_Delay (1000);** **}**	**a)** Click CTRL + Spacebar and select this command (**HAL_GPIO_WritePin (GPIOX, GPIO Pin, Pinstate);** **b)** Click CTRL + Spacebar and select this command **HAL_Delay(uint32_Delay); void** **c)** Change instruction inside the bracket as state by the left instruction coding shown. **d)** **Pinstate-1(ON), 0(OFF)** both states are needed due the while instruction is loop state instruction.

7. Click **'Save'** and **Run LED**.

8. After **Run LED**- Edit Configuration Properties-Click **'OK'**- ST-LINK Firmware Verification Properties-Click **'Yes'**.

9. **ST-Linkupgrade 3.3.6** (properties)- Click **'Open in update mode'**- Click **'Upgrade'.**

10. **Run** again the compiler to be compile into the arm microprocessor.

11. The LD2 on the dev. Board can be observe which the LED will blink according to the delay time that set up on the **'While'** instruction.

12. Disconnect microprocessor to the computer by removing USB application on the computer.

13. **GitHub Links: https://github.com/89GHAZALI/MKEL1123-Blinky-Project.git**