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GENESIS – Embedded C Learning Report

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| **Ver. Rel. No.** | **Release Date** | **Prepared. By** | **Reviewed By** | **To be Approved** | **Remarks/Revision Details** |
| 1.0 | 02/01/21 | Amaljith S |  |  |  |
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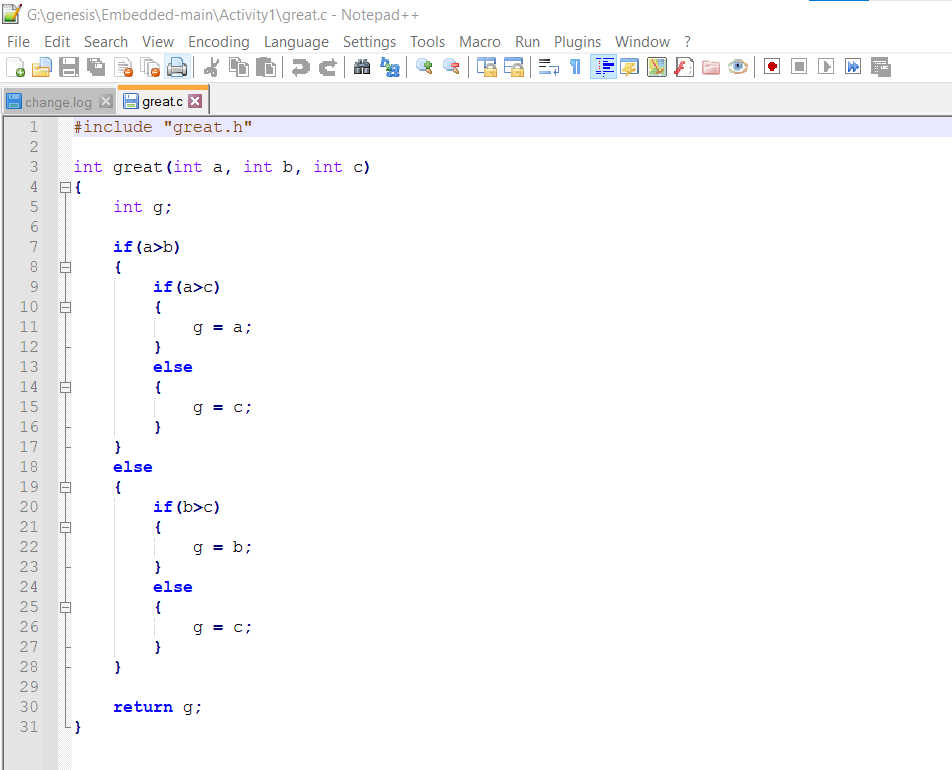
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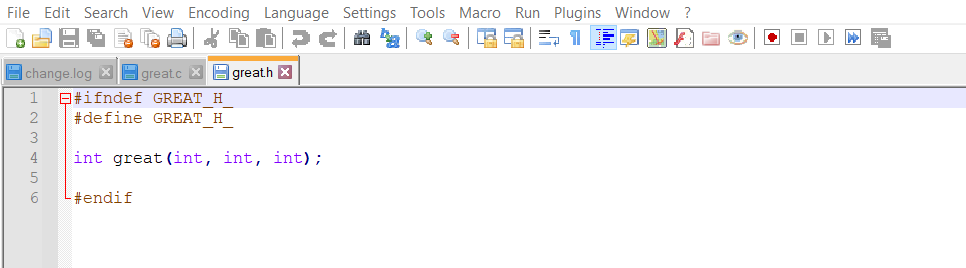
# Activity 1

## Build Using Git Bash

### GREAT.C FILE

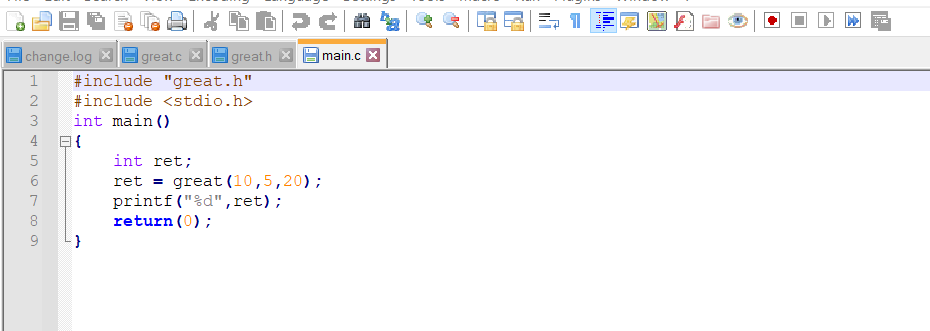


### GREAT.H FILE

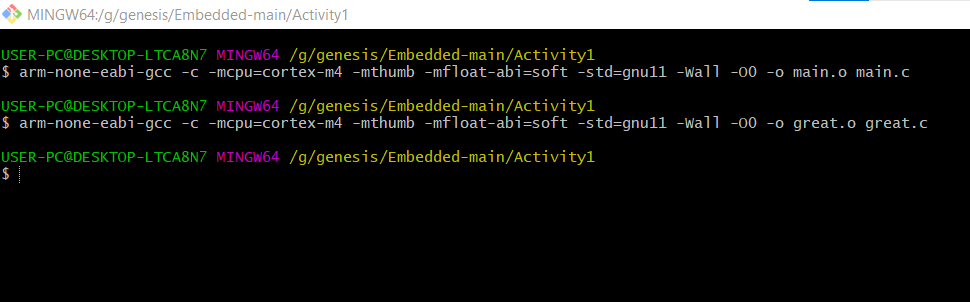


### 

### MAIN.C FILE



### Build After Running in Git Bash



# Activity 2

## Linker Script

ENTRY(Reset\_Handler)

MEMORY

{

FLASH(rx):ORIGIN =0x08000000,LENGTH =1024K

SRAM(rwx):ORIGIN =0x20000000,LENGTH =128K

}

SECTIONS

{

.text :

{

\*(.isr\_vector)

\*(.text)

\*(.text.\*)

\*(.init)

\*(.fini)

\*(.rodata)

\*(.rodata.\*)

. = ALIGN(4);

\_etext = .;

}> FLASH

\_la\_data = LOADADDR(.data);

.data :

{

\_sdata = .;

\*(.data)

\*(.data.\*)

. = ALIGN(4);

\_edata = .;

}> SRAM AT> FLASH

.bss :

{

\_sbss = .;

\_\_bss\_start\_\_ = \_sbss;

\*(.bss)

\*(.bss.\*)

\*(COMMON)

. = ALIGN(4);

\_ebss = .;

\_\_bss\_end\_\_ = \_ebss;

. = ALIGN(4);

end = .;

\_\_end\_\_ = .;

}> SRAM

}

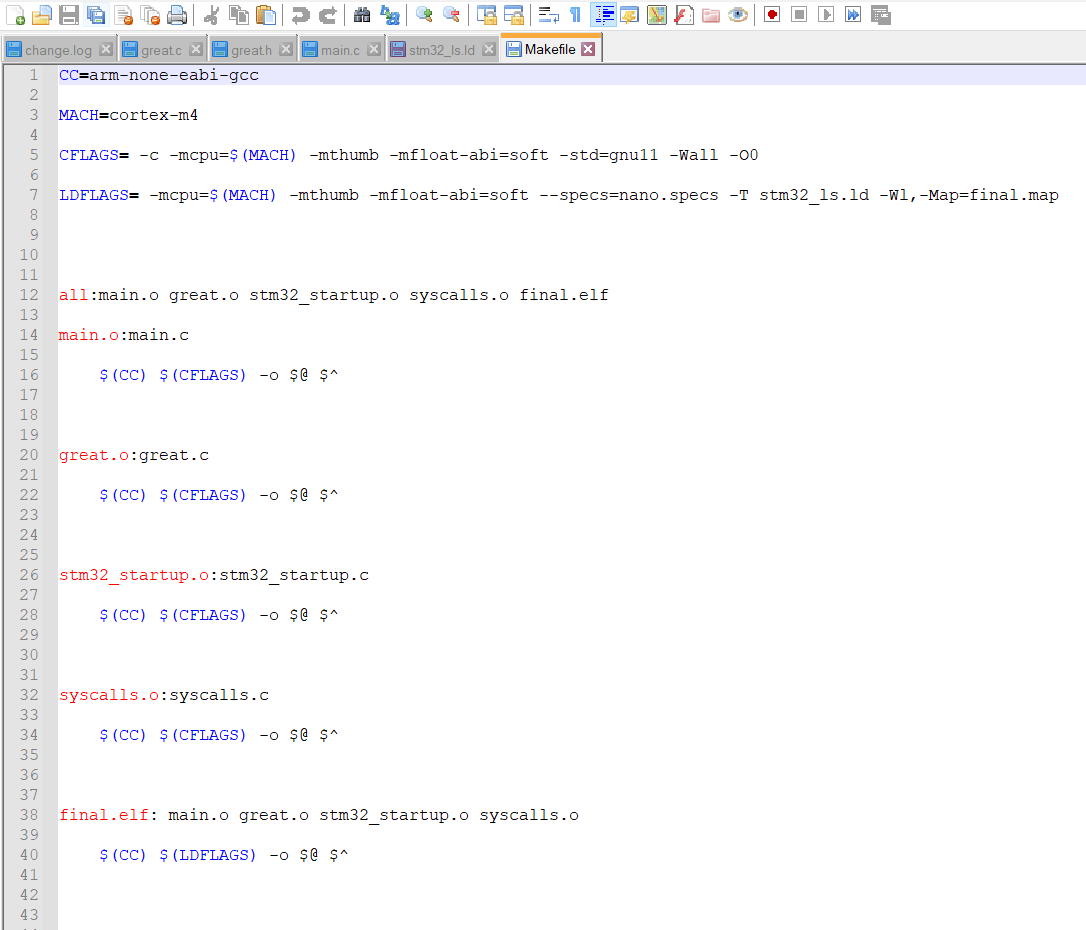
# Activity 3

## 3.1 Startup Code

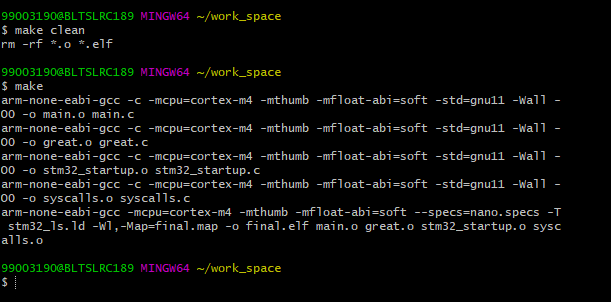
Git Link: <https://github.com/99003190/Embedded/blob/main/Activity1/stm32_startup.c>

# Activity 4

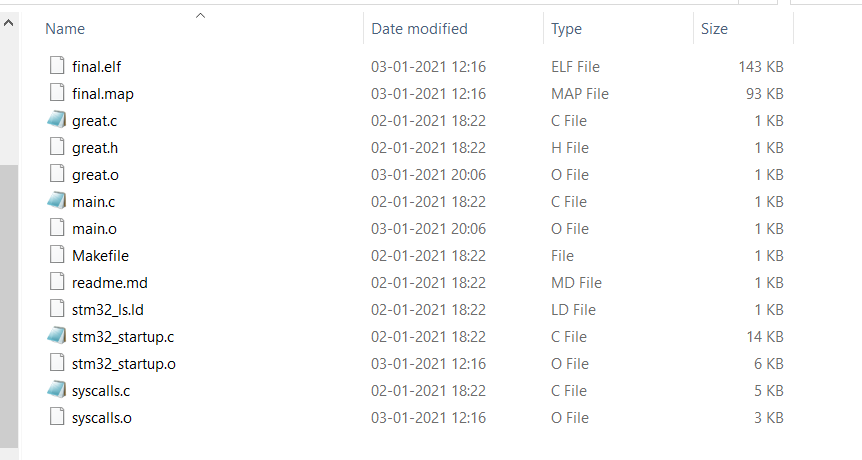
## Build Using Makefile



## Screenshot of Output after Running Make



## Files Created



## Github Link

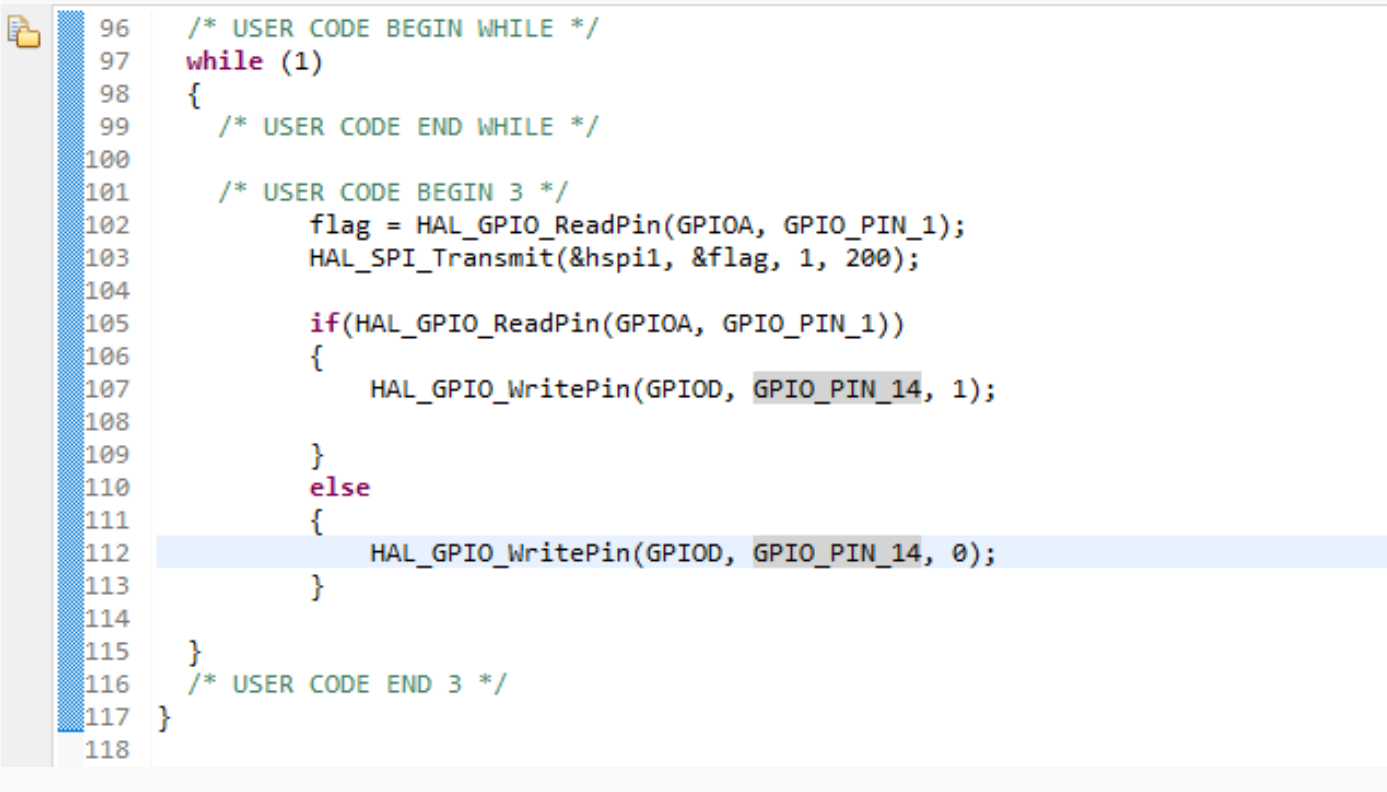
<https://github.com/99003190/Embedded/tree/main/Activity1>

# Activity 5

## 5.1 Mini Project

### 5.1.1 Code Implementation

##### **STM32**



Github link:

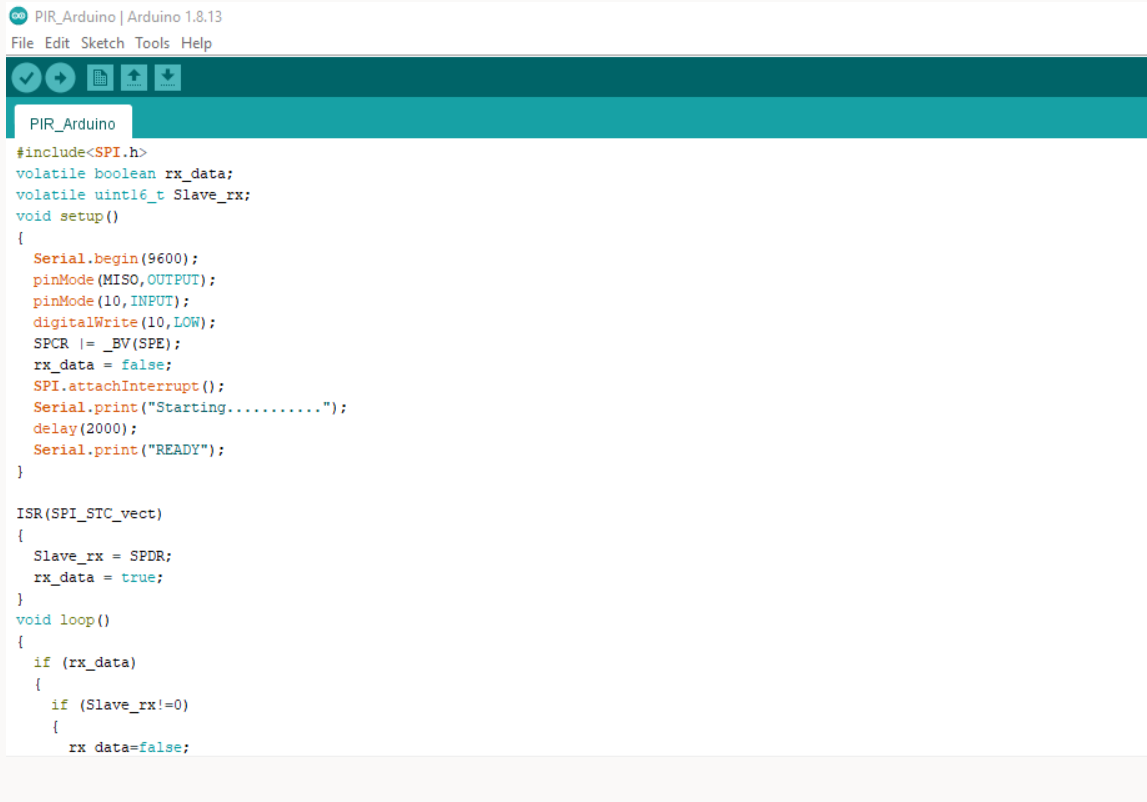
<https://github.com/99003190/Embedded/tree/main/Project_Embedded/PIR>

SharePoint link:

<https://lnttsgroup.sharepoint.com/:f:/r/sites/GEA/Global%20Engineering%20Academy/GENESIS%20%20Nov%202020%20Submission/Nov%202020%20Submission/Bangalore/2011BLRGT01/99003190/Embedded_C/Embedded_Project/PIR?csf=1&web=1&e=nfuF2Z>

##### 

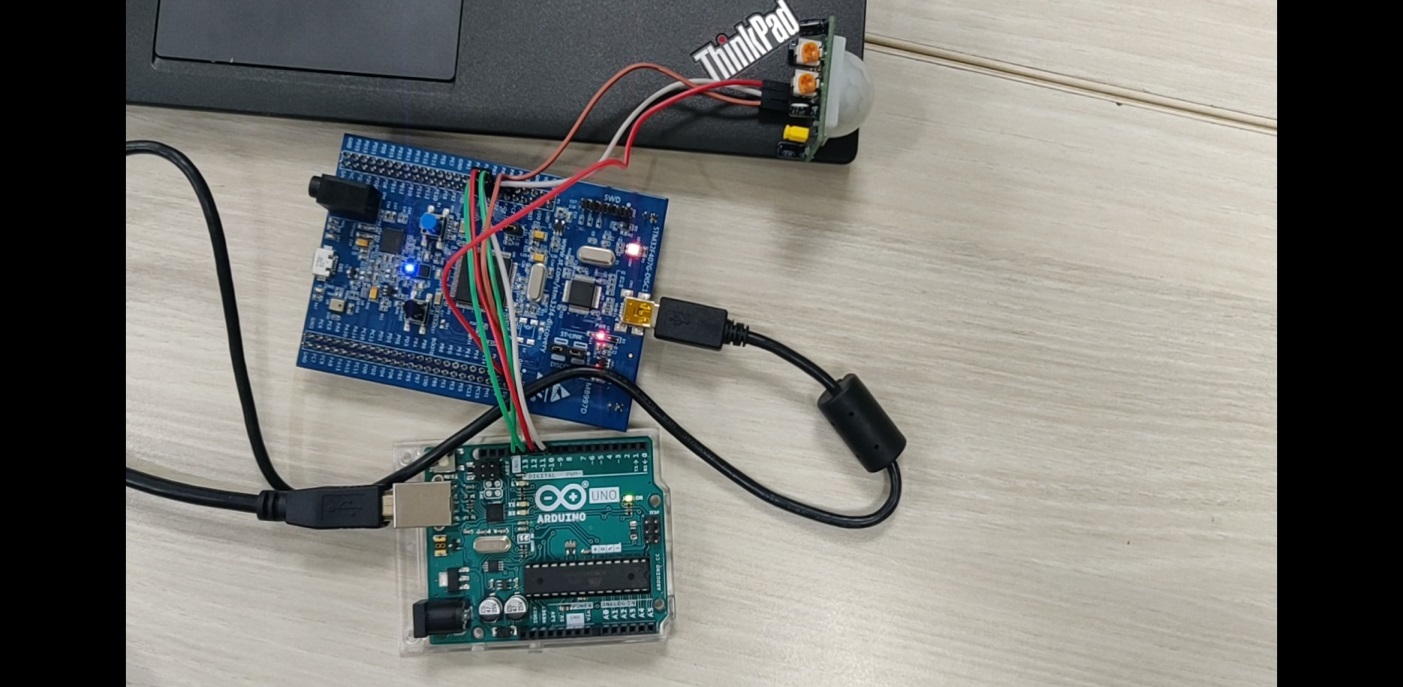
##### **Arduino**



**Github link:**

<https://github.com/99003190/Embedded/tree/main/Project_Embedded/Arduino_Code>

### 5.1.2 Hardware



### 5.1.3 Output

##### **Output when no motion is detected**

Figure 1: LED OFF

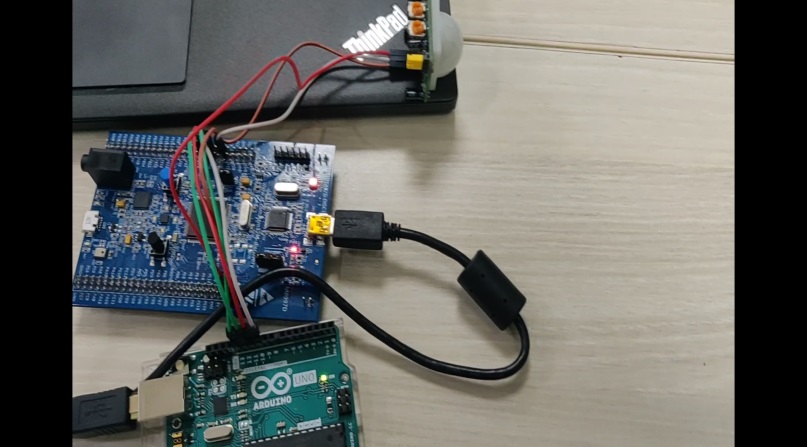
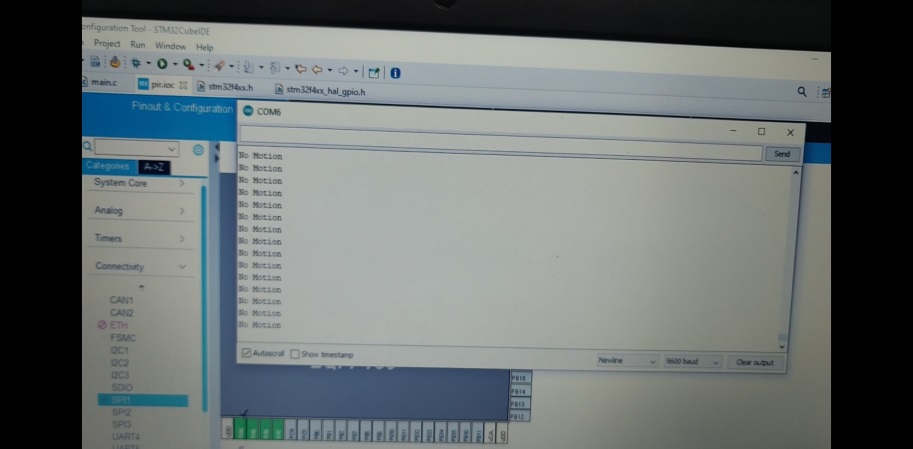
 

Figure 2: Serial Monitor showing no motion

##### 

##### **Output when motion is detected**

Figure 3: LED ON

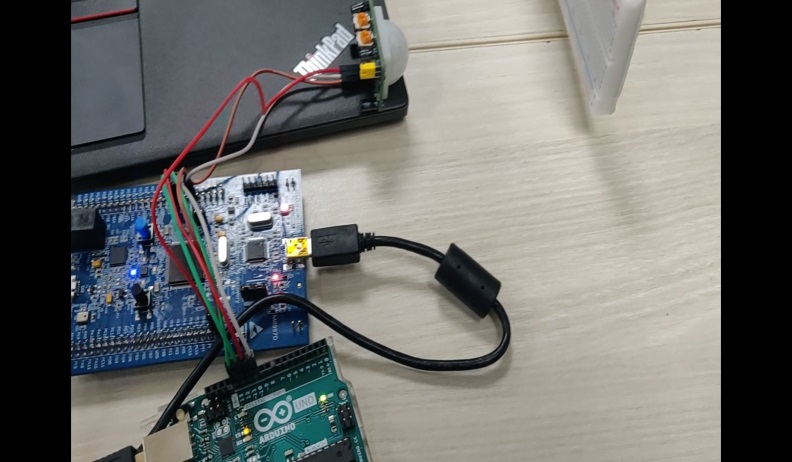
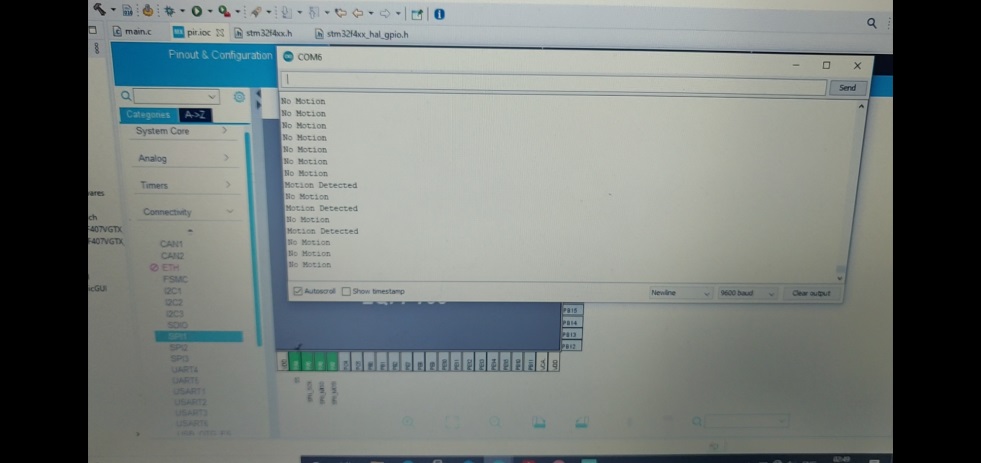
 

Figure 4: Serial Monitor Showing Motion Detected

### 5.1.4 Github Link

<https://github.com/99003190/Embedded/tree/main/Project_Embedded>