I. OBJECTIVES

At the end of this activity, the students should be able to:

1. **Familiarize with the architecture of STM32 microcontroller**
2. **Illustrate the special features and specifications of STM32; and**
3. **Describe the pin configurations of STM32 development board.**

II. MATERIALS

1. **PEN/PENCILS**
2. **RULER**
3. **ERASER**
4. **BOND PAPERS**

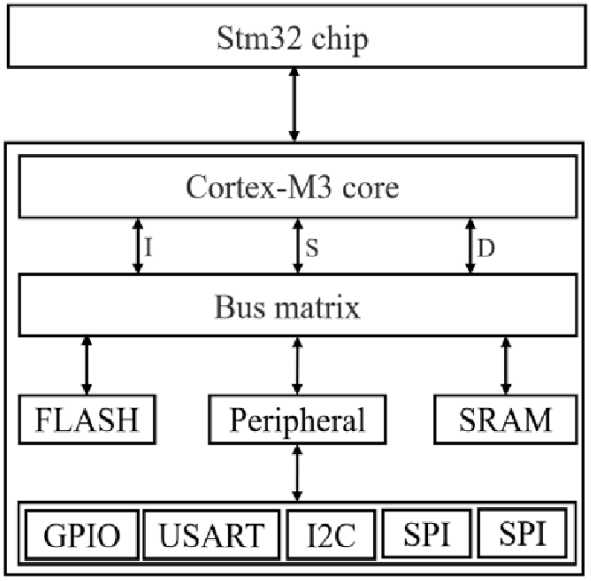
III. GENERAL INFORMATION

Using bond paper(s) draw and write the following:

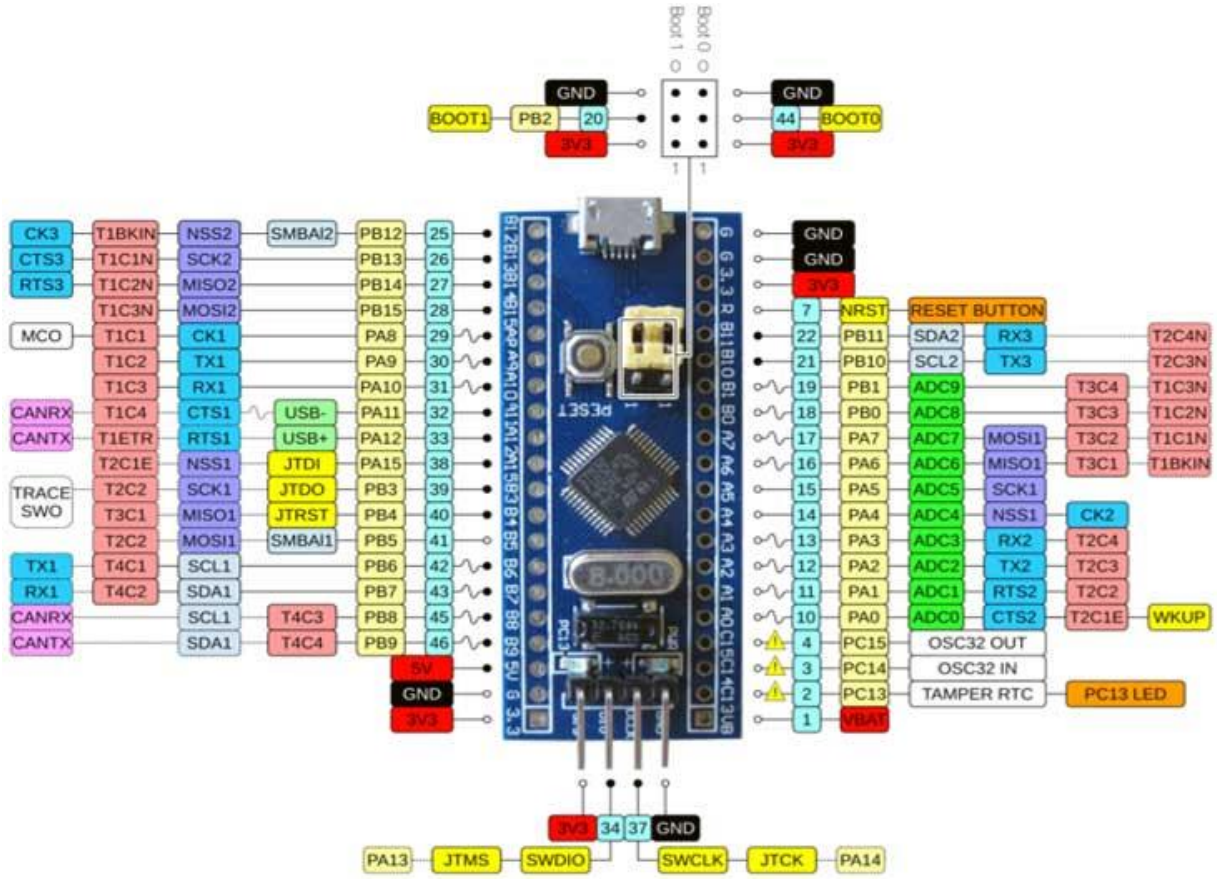
1. What is STM32 Microcontroller?

- The STM32 family of 32-bit microcontrollers based on the Arm® Cortex®-M processor is designed to offer new degrees of freedom to MCU users. It offers products combining very high performance, real-time capabilities, digital signal processing, low-power / low-voltage operation, and connectivity, while maintaining full integration and ease of development.

2. Draw the architecture block diagram of STM32



3. Draw the pin configuration of STM32 development board.



4. Enumerate all the special features of STM32
5. What are the programming language used in STM32
6. Compare STM32 with ATMEGA328 microcontroller

- The ATmega is a relatively simple 8-bit Reduced Instruction Set Computer, or RISC, microcontroller with a Harvard architecture. The main advantage of the ATmega family is they are quite easy to configure, without having to go through several layers of hardware abstraction. This is what makes it great for some classes of applications, for example controllers dedicated to doing certain control tasks.
- STM32 on the other hand is ARM-based, this means that the core of the microcontroller is one of the various ARM cores licensed from Advanced RISC Machines. In the case of the STM32, these can be Cortex M0/M0+, M3, M33, M4 or M7, either in single, or multiple, core configurations.

IV. QUESTIONS:

1. **What are the common applications of STM32 microcontroller?**

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2. **How many I/O PORTS used in STM32 Development board?**

V. OBSERVATIONS:

VI. CONCLUSIONS:

VII. REFERENCES:

- https://www.st.com/en/microcontrollers-microprocessors/stm32-32-bit-arm-cortex-mcus.html
- https://components101.com/microcontrollers/stm32f103c8t8-blue-pill-development-board
- https://predictabledesigns.com/atmega-versus-stm32-which-microcontroller-is-best-for-your-application/