

# Getting started with eYFi-Mega development board and eY-IDE VS Code extension

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ERTS Lab, CSE Department

## 1 Lab Objective

1. Familiarization with eYFi-Mega (e-Yantra's Wi-Fi and ATmega2560 based) development board
2. Install Visual Studio Code (VS Code) software for programming
3. Install eYFi-IDE extension for VS Code
4. Familiarization with loading and executing program for ATmega2560 and ESP32 both wired and wirelessly

## 2 Overview of the development board

In this course we are using eYFi-Mega Kit for learning concepts of micro-controller programming and subsequently developing an embedded system applications.

eYFi-Mega Kit is developed by e-Yantra Team at ERTS Lab, CSE Department, IIT Bombay.

This Kit will be provided to you for working on the Lab Experiments as well as Projects.

The eYFi-Mega Kit includes:

- eYFi-Mega development board
- Interface Board
- USB micro-B plug to USB-A plug cable

While receiving the kit provided to you, ensure that it contains all the above mentioned items. In case you find any missing items please report to course TAs immediately.

**Recommended and Mandatory:** Kindly read and understand the **Hardware Manual** of the eYFi-Mega development board, hosted at <http://products.e-yantra.org/eyfi-mega/documentation/>.

### 3 Overview of the eYFi-IDE (VS Code extension)

There are several IDEs available to program AVR Microcontrollers and ESP32 but for eYFi-Mega, we have developed a special extension for VS Code which makes it convenient to program and use features of the development board.

Kindly refer to the **Software Manual** of the eYFi-Mega development board, hosted at <http://products.e-yantra.org/eyfi-mega/documentation/>.

Follow these sections to install and get familiar with eYFi-IDE:

1. Installation of VS Code in Linux
2. Installation of eYFi-Mega Extension and Toolchains for Linux
3. Using eYFi-Mega Extension

### 4 Procedure

1. Make sure the eYFi-IDE is installed correctly as per the Software Manual.
2. Create a project for ATmega2560 using **Create Project** button in the eYFi-IDE. Name the project as **Lab\_0-ATmega2560**. It will create a default skeleton file named **Lab\_0-ATmega2560.c**. You don't have to edit this file.
3. Compile the project using **Compile** button. It will create the **build** folder inside the project directory and will generate the compiled binary and hex files inside it.
4. Repeat the above steps 2 and 3 for ESP32 and name the project as **Lab\_0-ESP32**. The source file of the ESP32 project resides in **main** folder with name as **main.c**.

## 5 Demo and Submissions

### 5.1 General Instructions

- You have to get your output verified by your TA on the lab day (Wednesday between 2 to 5 pm).
- Based on the Groups formed amongst the students taking the course, we will create a GitHub repository for each group and add all the group members as a collaborator.
- One of the group member can push their codes and outputs for each Labs on the repo.
- Upload a well documented code of the experiment every week after you have completed it.

### 5.2 Lab 0 Submission Instructions

- There will be a folder **Lab 0** already created on that repo. You have to add the above two project folders: **Lab\_0-ATmega2560** and **Lab\_0-ESP32** inside it.
- Deadline for completing **Lab 0** is **Wednesday, 22nd January 2020 midnight**.