Beginner's Guide

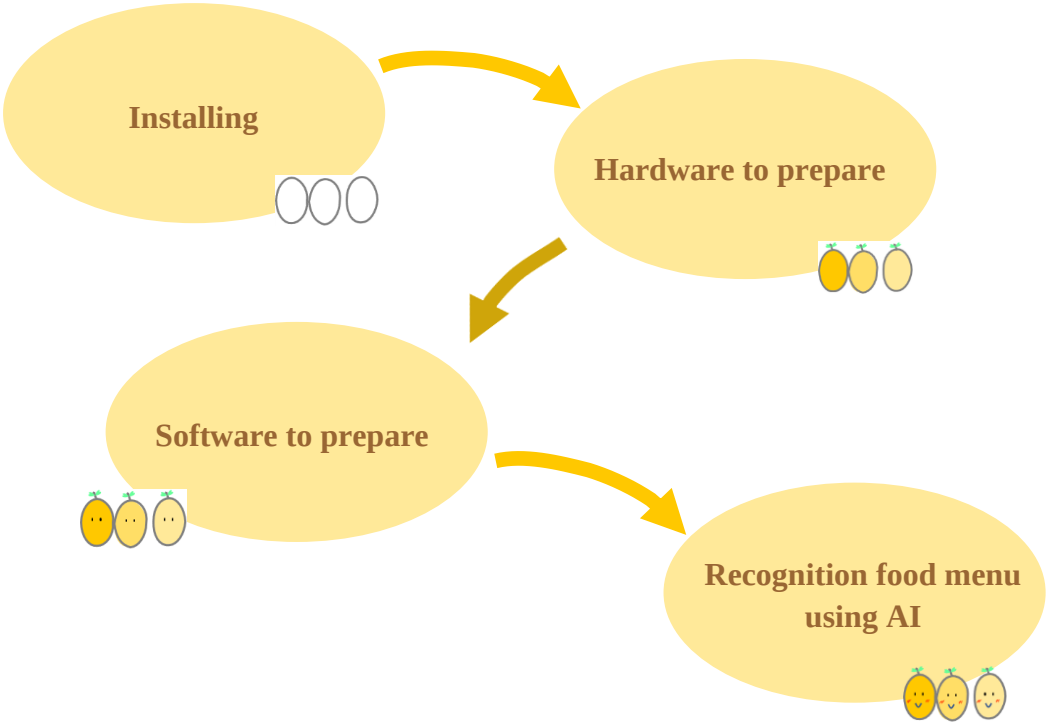
GR-MANGO
AI Beginner’s Guide

EPMP-IMB-20-0278-2 2021.02

TOC

1. Introduction

This document describes the procedure to recognize food menu of color images using Ai on GR-MANGO.



2. Installing

This software can load and execute programs without using an integrated environment.
If you do not debug the program, the procedure in this chapter is unnecessary, so proceed to Chapter 3.

2.1 Installing e²studio integrated development environment

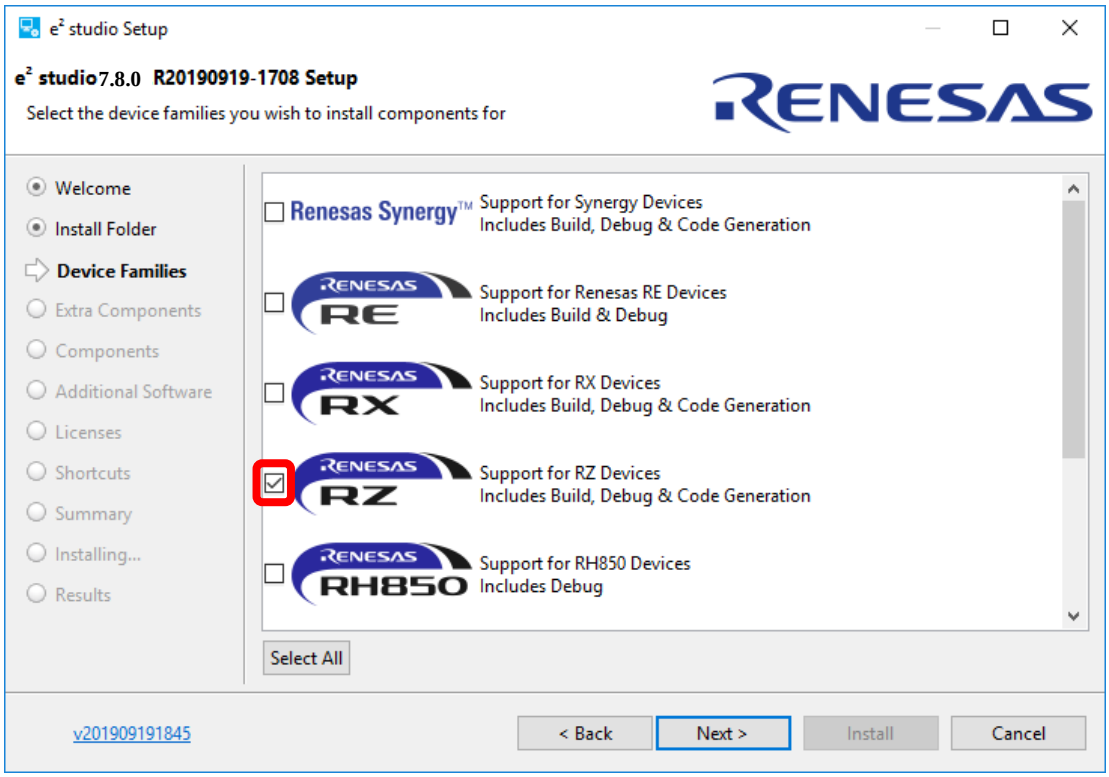
Please download e²studio integrated development environment and instration.
https://www.renesas.com/us/en/document/esw/e-studio-v780-installer-offline-installer

Describes the installation procedure.

1. Double-click "setup e2_studio_7_8_0.exe".

2. Follow the instructions of the installer.

3. Select the "RZ" for "Device Familly" below.

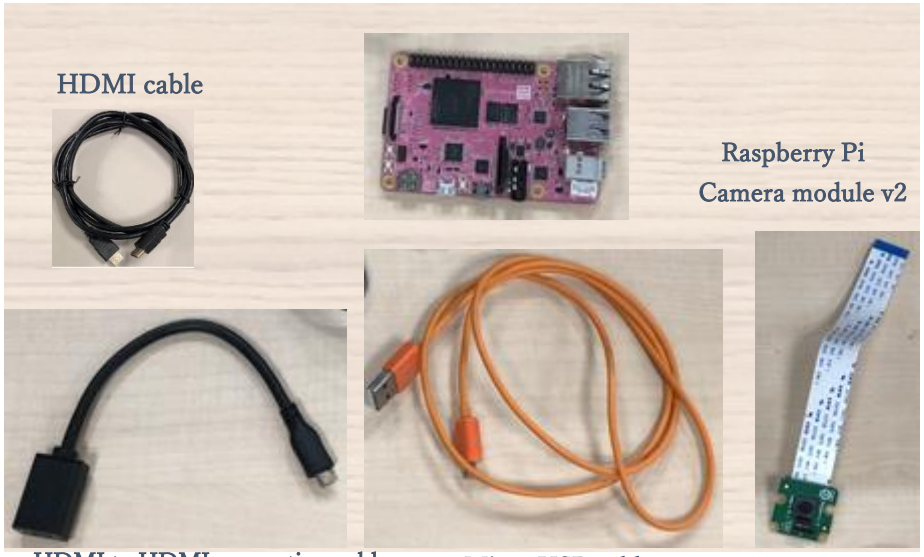


4. Follow the instructions of the installer.

3. Hardware to prepare

If you do not use debugger, follow step chapter 3.1.
If you use debugger, follow step chapter 3.2.

3.1 Case of not using a debugger



food or

picture of food

Windows 10 64bit PC and monitor

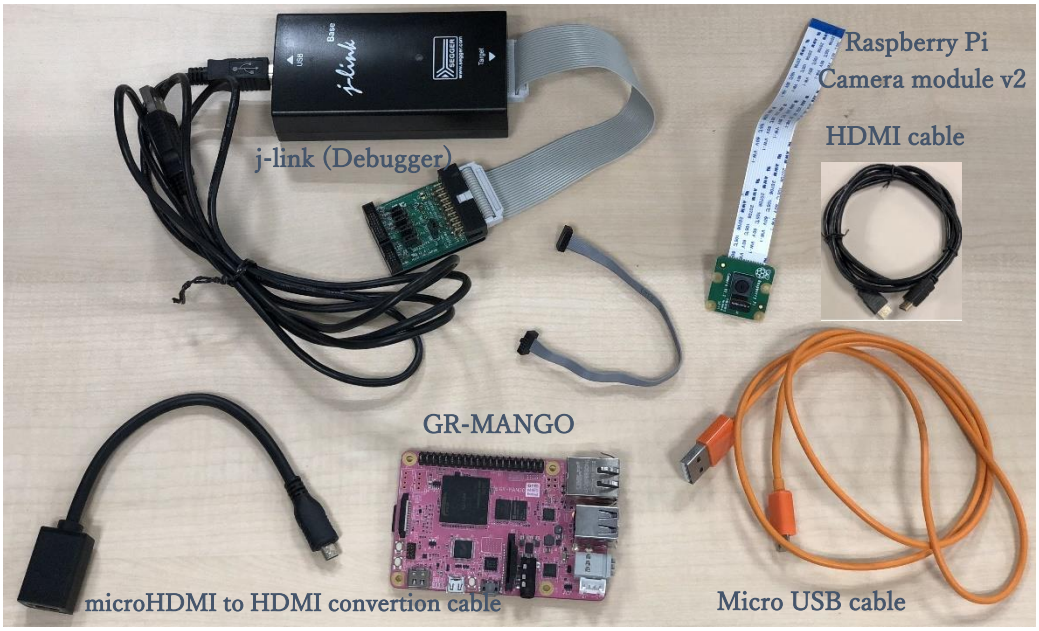
Potate, donuts, edamame… 15types

convenient thing if you have

Smartphone folder

3.2 Case of using a debugger

1. Prepare what to use.



food or

picture of food

Windows 10 64bit PC , Monitor

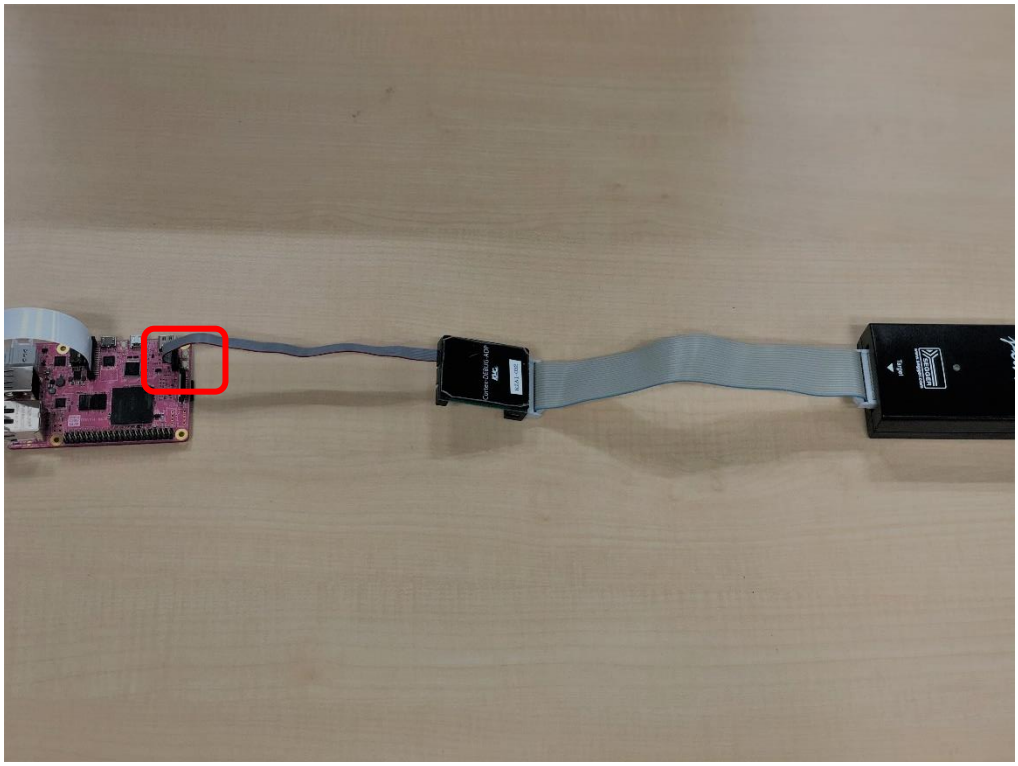
Potate, donuts, edamame… 15types

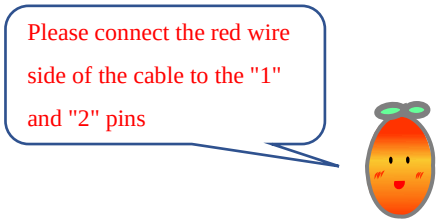
convenient thing if you have

Smartphone folder

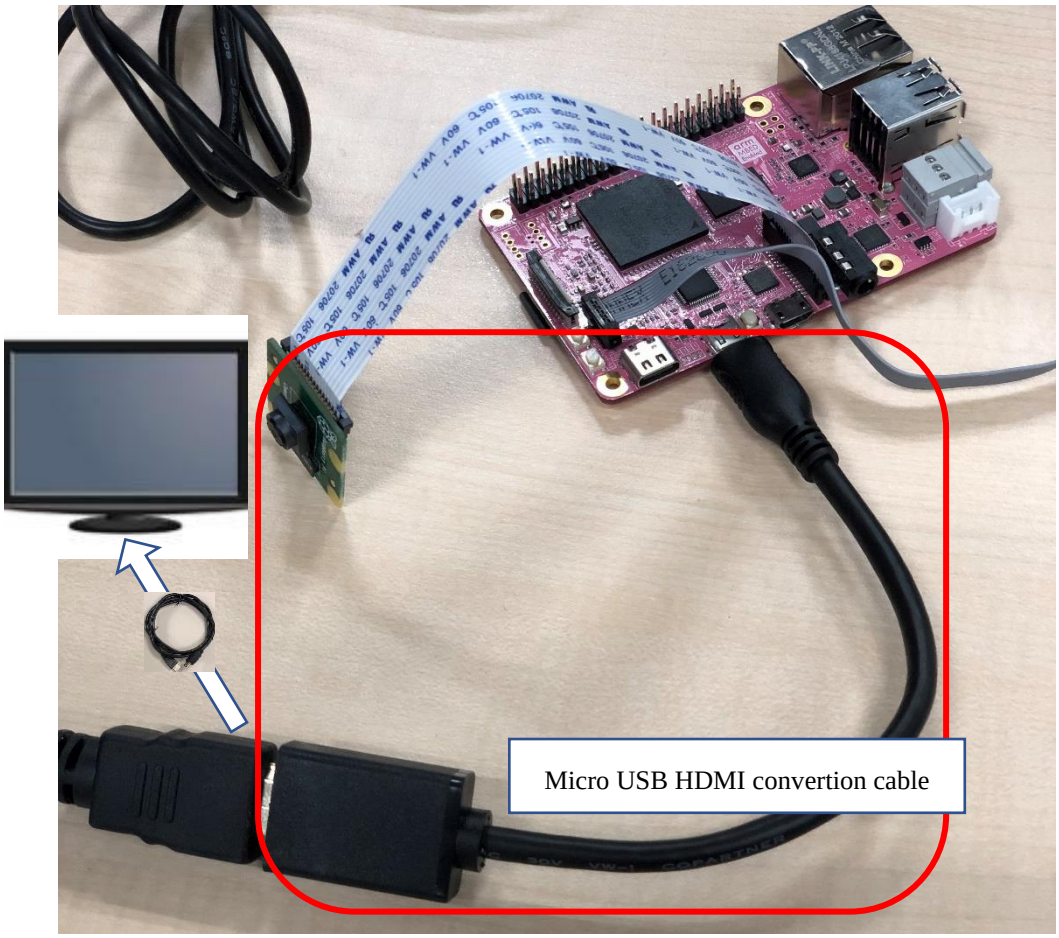
2. Connect the mipi camera as shown below.

3. 2. Connect the J-Link as shown below.

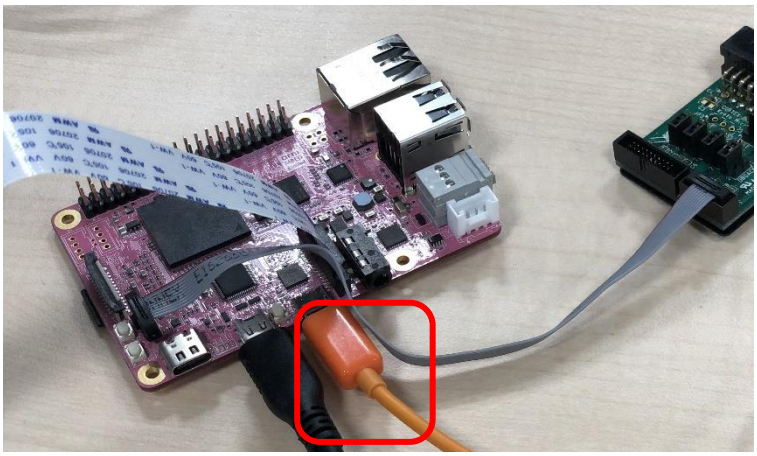




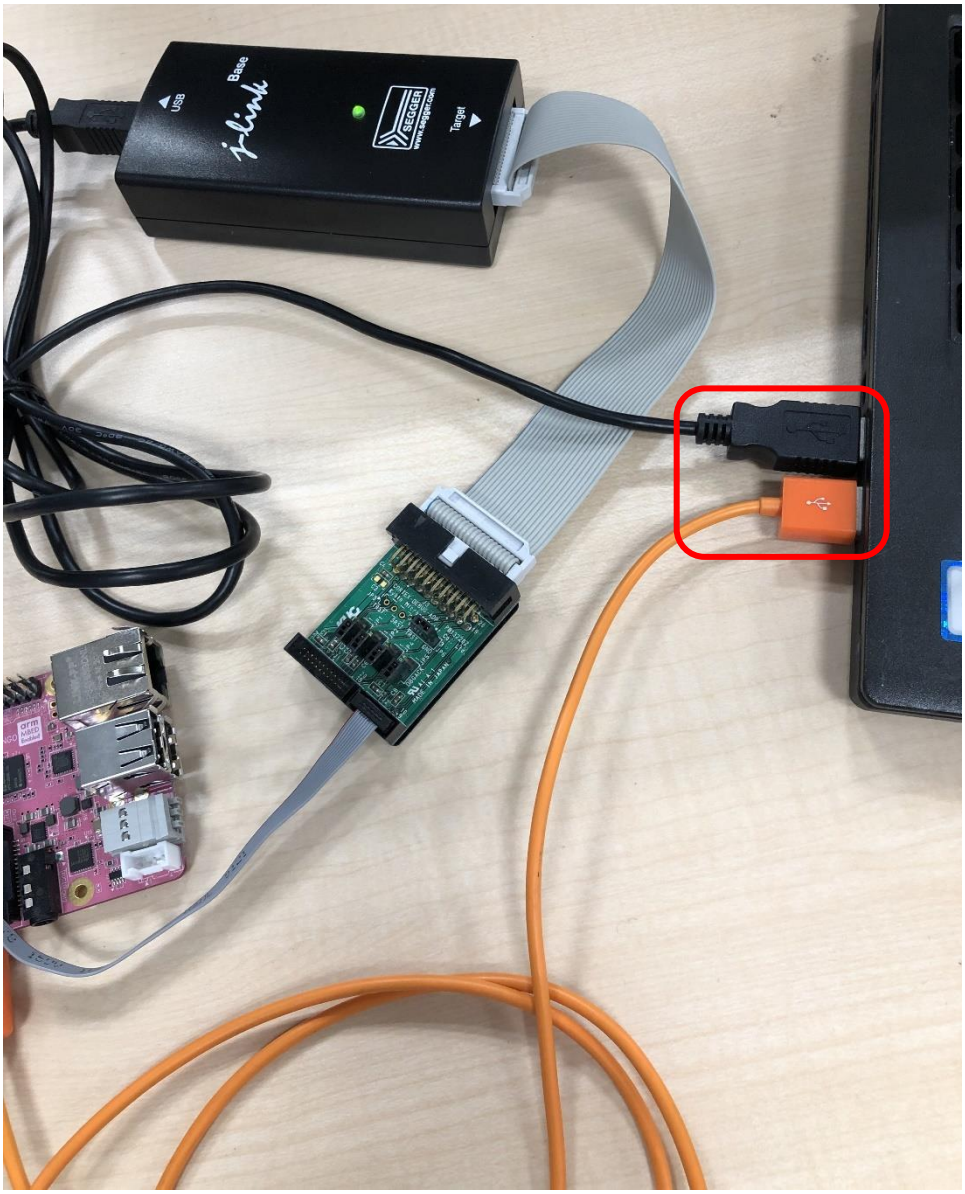
4. Connect the HDMI cable. The figure below uses a connector that converts to a microHDMI to HDMI cable. You can also use a USB Typec HDMI cable.



5. Connect the miniUSB cable for power supply as shown below. The example is a micro USB cable.



6． Connect the J-Link and the micro USB to the PC.

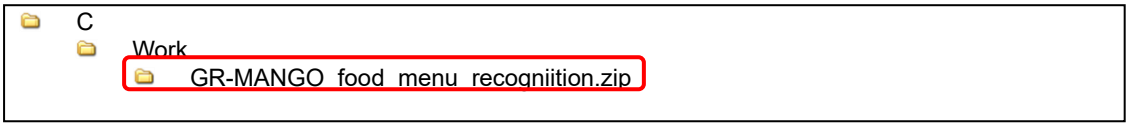


4. Software to prepare

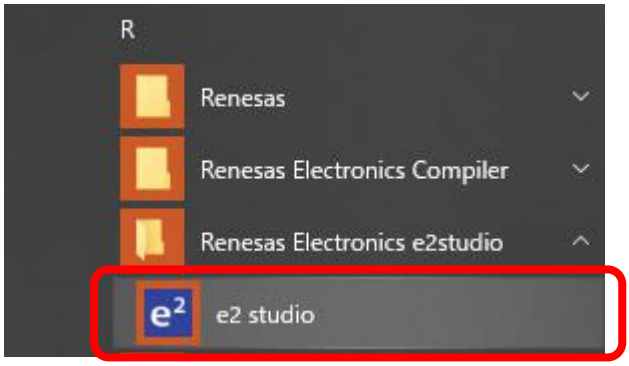
4.1 Setting procedure e2 studio

Now, set the environment of e²studio.

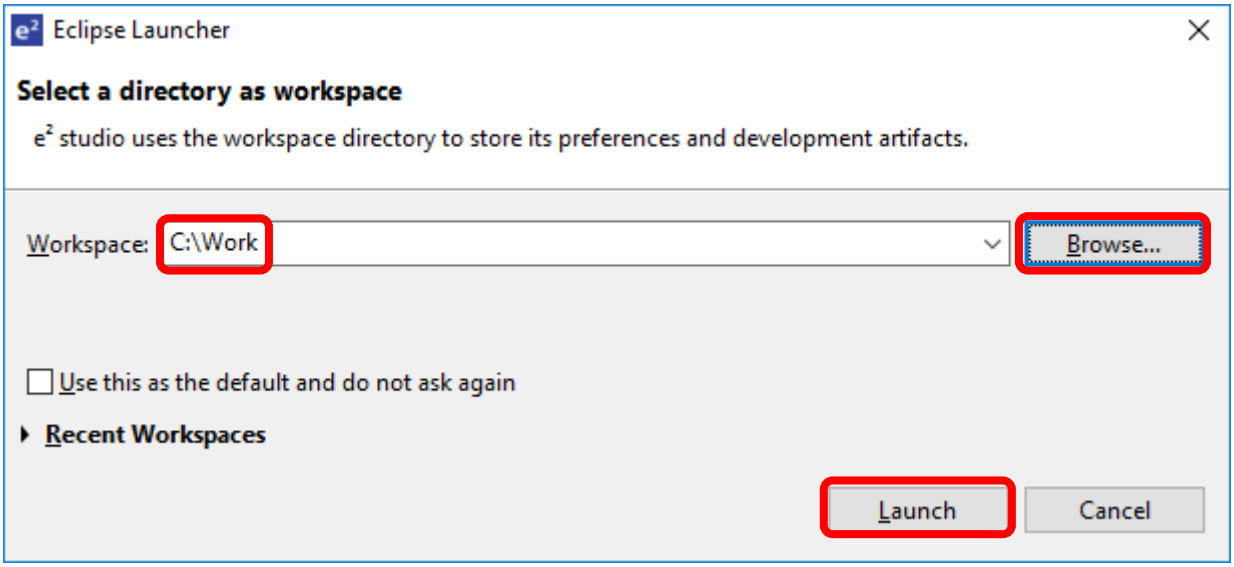
1. Unzip the GR-MANGO_food_menu_recognition.zip included in this package and store it in the work directory. (The following example shows how to create a work directory named "Work" on the C drive and store it.)



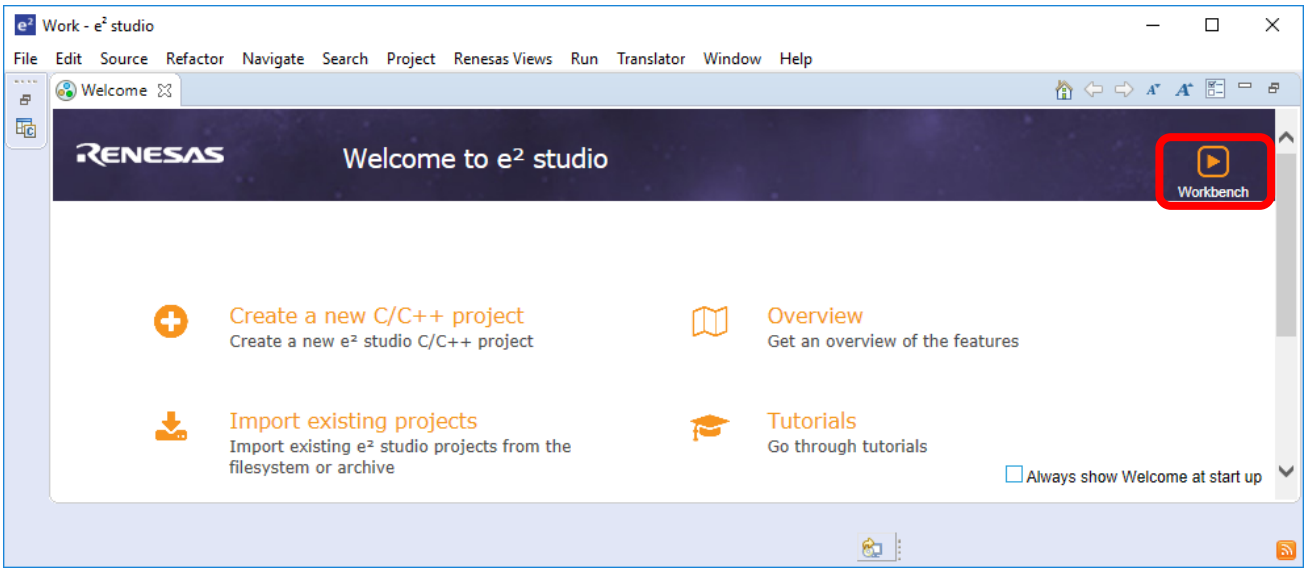
2. Start e²studio from the Windows start menu.



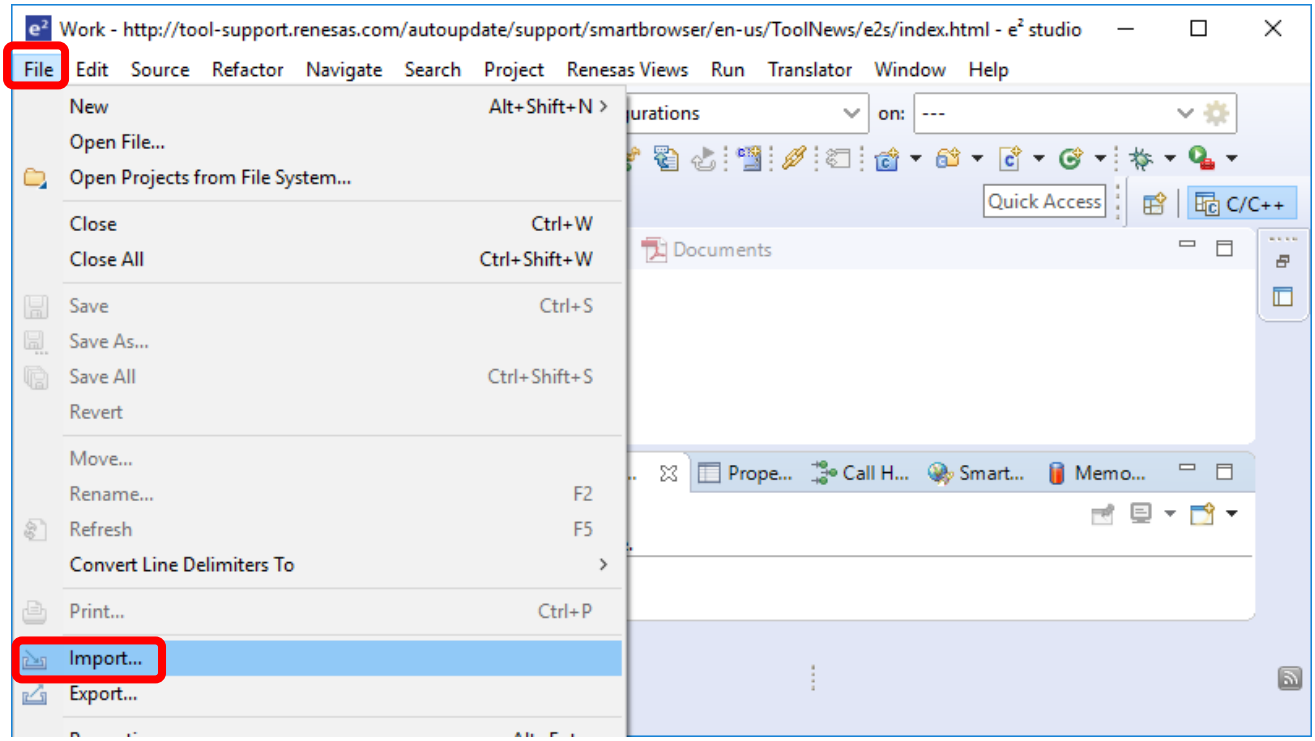
3. Click the browse button, specify "C:/Work" as the workspace, and press start. (Specified for the second and subsequent times.)



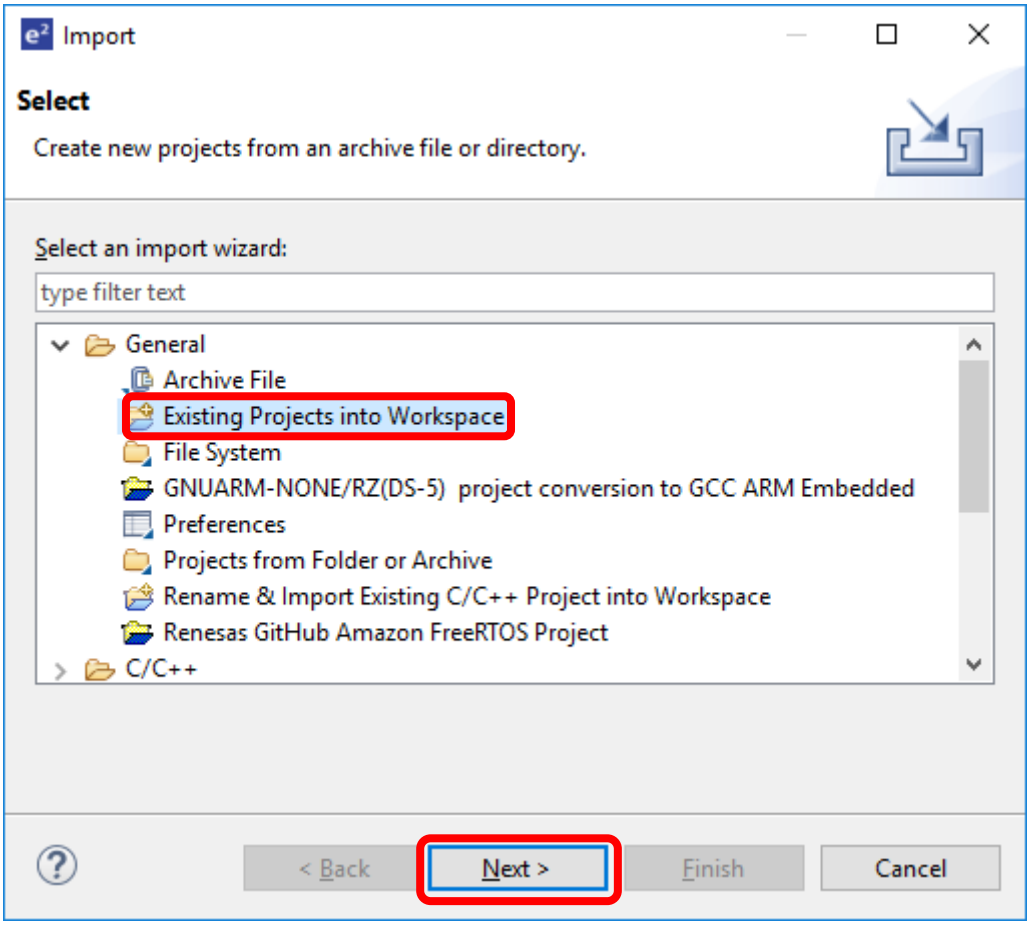
4. When the "Welcome" comes out, press the workbench button on the upper right.



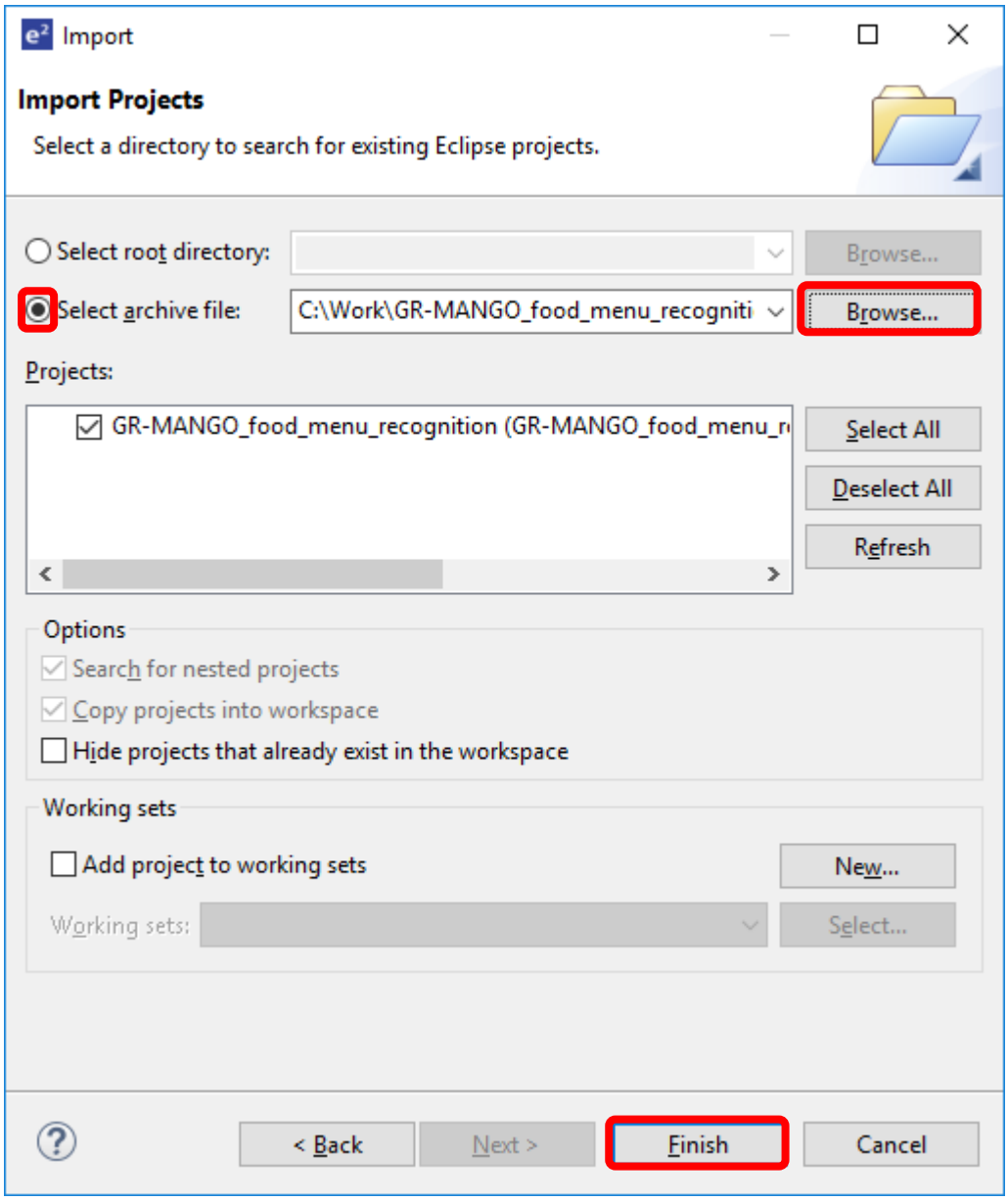
5. Press the “File” button and select “Import”.



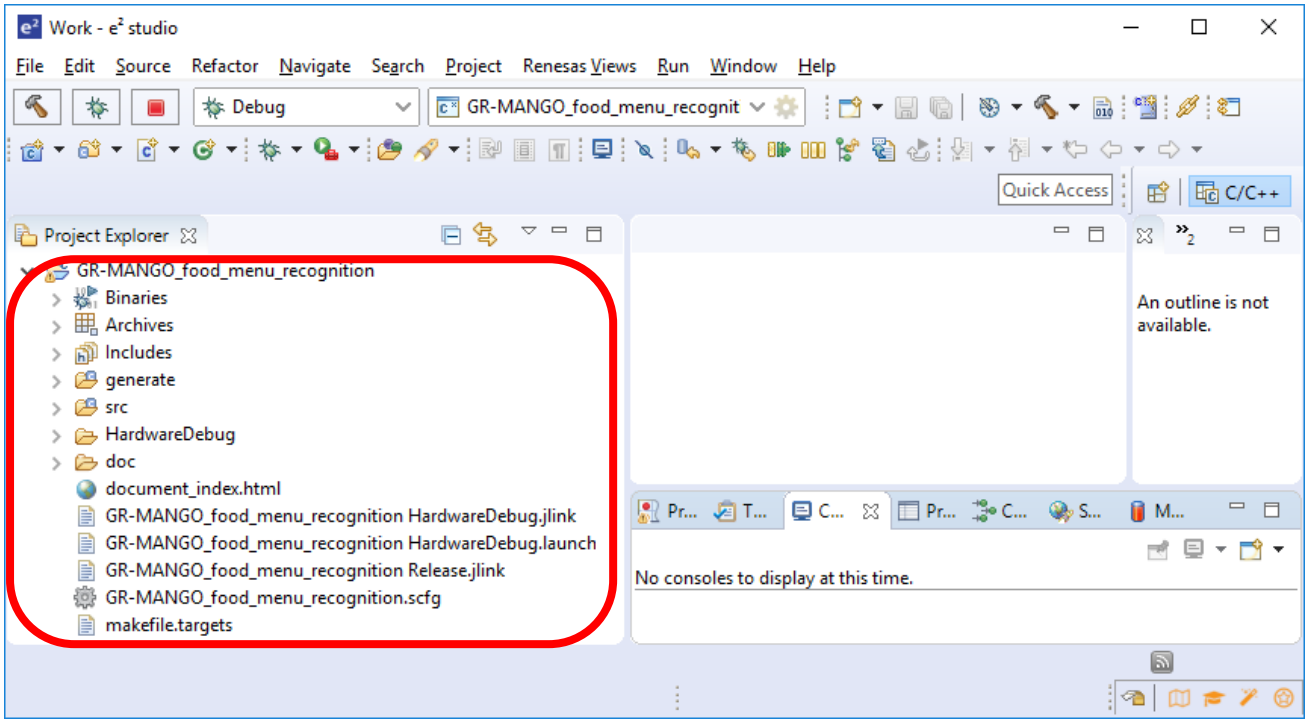
6. Press the "General", select "Existing Projects into Workspace" and press "Next".



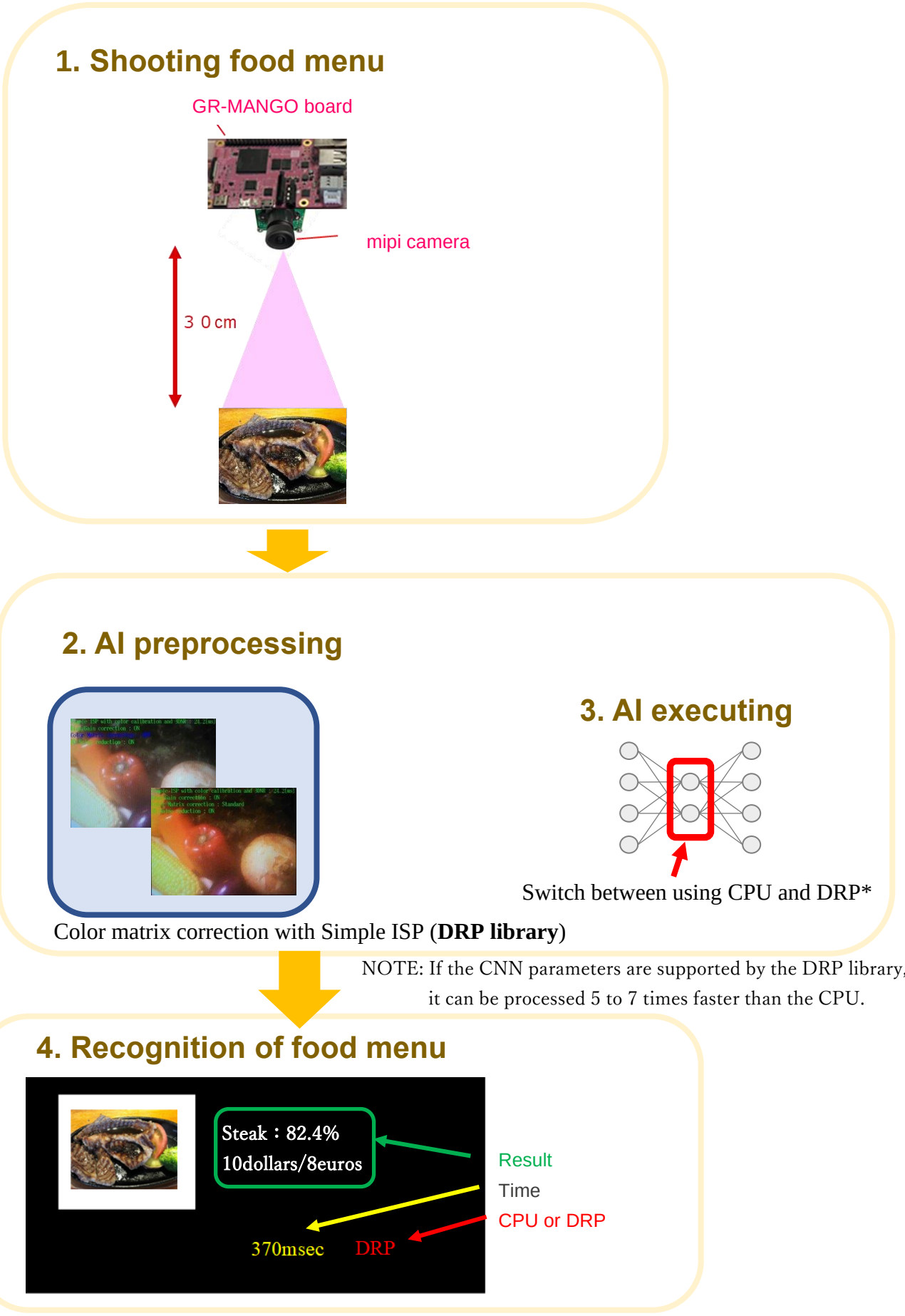
7. Press the "Select root directory". Press the Browse button, select a directory.
(The example is selected C:/Work/GR-MANGO_food_menu_recognition) After that, press "Finish button."



8. The project has been successfully imported.



5. Demonstration overview of recognition of food menus using AI



6. Recognition food menu using AI

We will recognize the food menu in the setting environment in chapter.

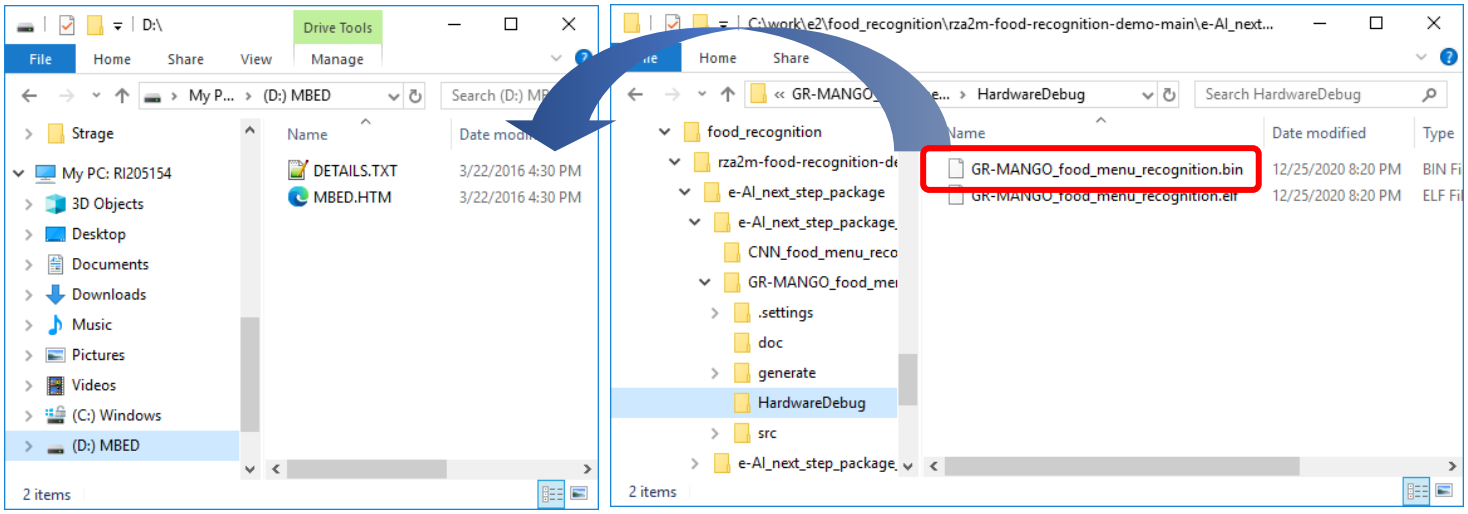
Condition

Image used when creating a learning model	FOOD image dataset
Number of categories	15 ramen, stake, sushi, oyster, caesar_salad edamame, spaghetti_carbonara, donuts, pancakes, french_fries, hamburger, club_sandwich, hot_dog, fried_rice, pizza
format	JPEG
Input image size (height x width x number of channels)	128 × 128 × 3(RGB)

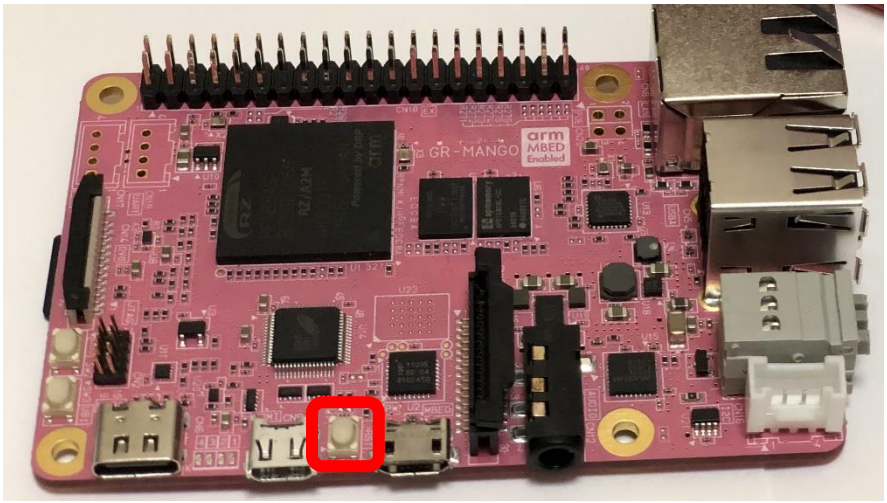
6.1 Case of not using a debugger

(1) Copy GR-MANGO_food_menu_recognition.bin included in the package to the "MBED" drive that appears when you connect GR-MANGO and your PC with a Micro USB cable.

Binary file :
e-AI_next_step_package/e-AI_next_step_package_data/
GR-MANGO_food_menu_recognition/HardwareDebug/GR-MANGO_food_menu_recognition.bin

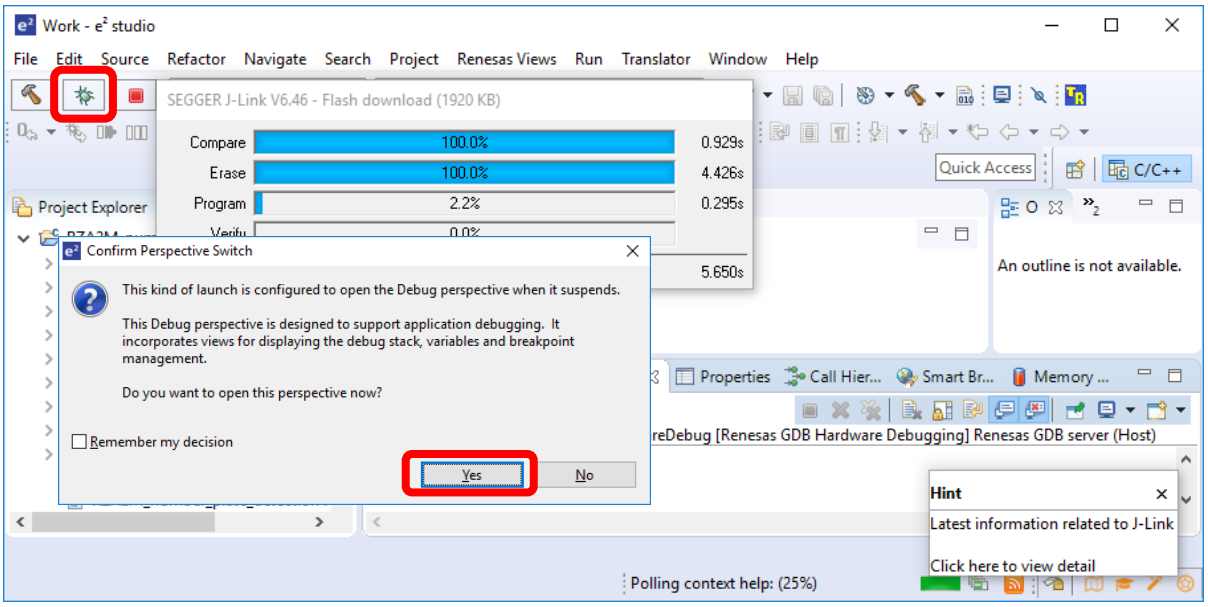


(2) Push the reset button (red frame below ficure). The program will run.
Please go to page 19.

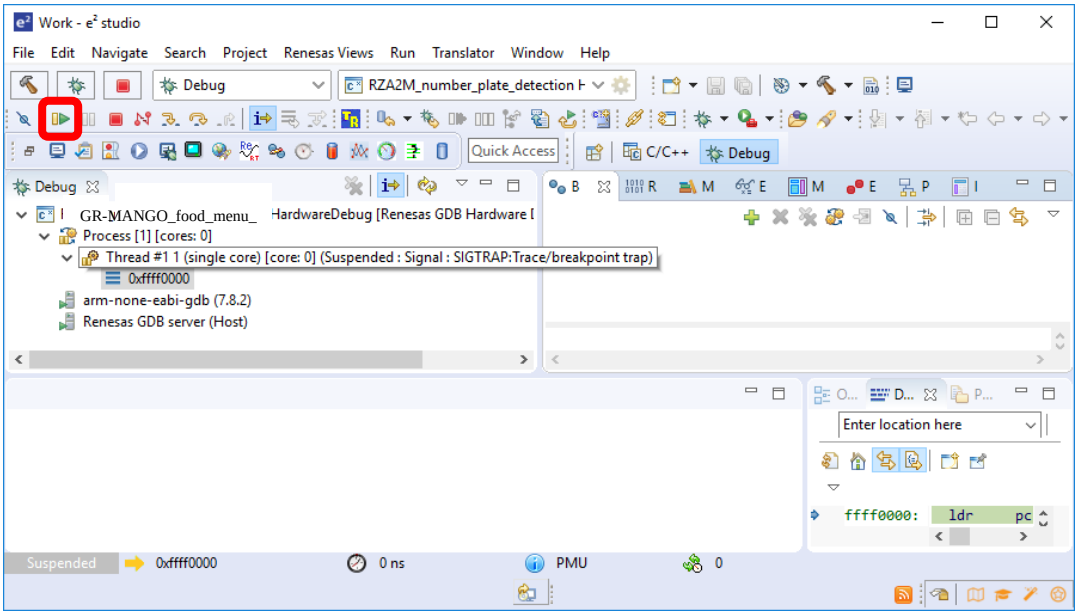


6.2 Case of using a debugger

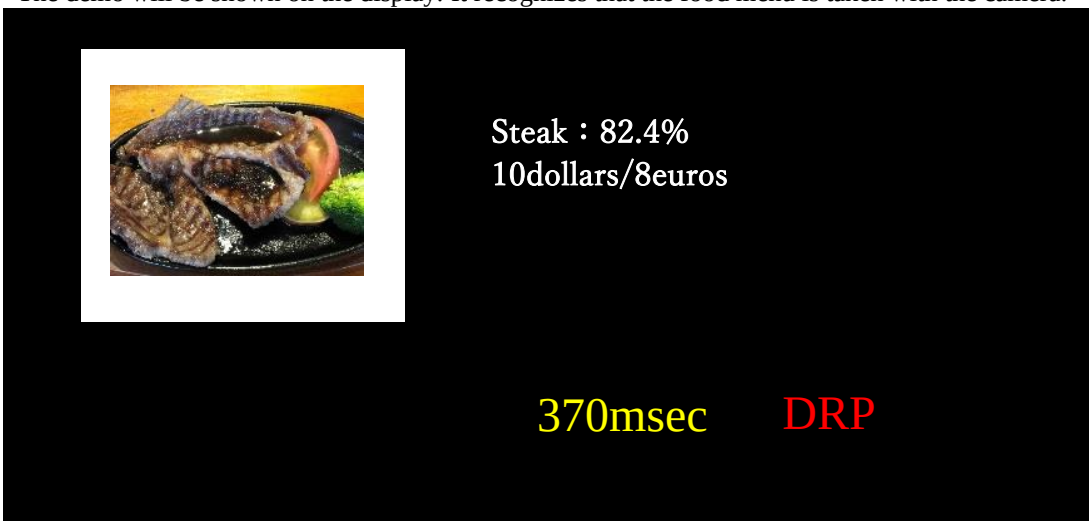
1. Click the  icon in the red frame below, start the download. The "Confirm Perspective Switch" dialog opens. Click the “Yes” button.



2. Click the icon in the red frame below twice to go to the program.



The demo will be shown on the display. It recognizes that the food menu is taken with the camera. *



This is the end of "AI food menu recognition on GR-MANGO"
"I want to change to my own original menu and make a food menu!" "I want to actually try AI learning!"
Please proceed to "AI Customization Guide with GR-MANGO".

Note: Depending on the location, if the display becomes dark, correction may be required.
Please contact Renesas.

7. History

Rev	Date	Contents
1.1	18th Feb.2021	3.1 3.2 Added camera version of figure 6.1 Revised case of not using a debugger
1.0	24th Dec.2020	New