



**Automation Training**  
with  
**S7- PLCSIM**  
and  
**Factory I/O**  
**Simulation Software**

**By: Mr. Henry Choong**

# INDUSTRIAL AUTOMATION & CONTROL SIMULATION

## EXERCISE

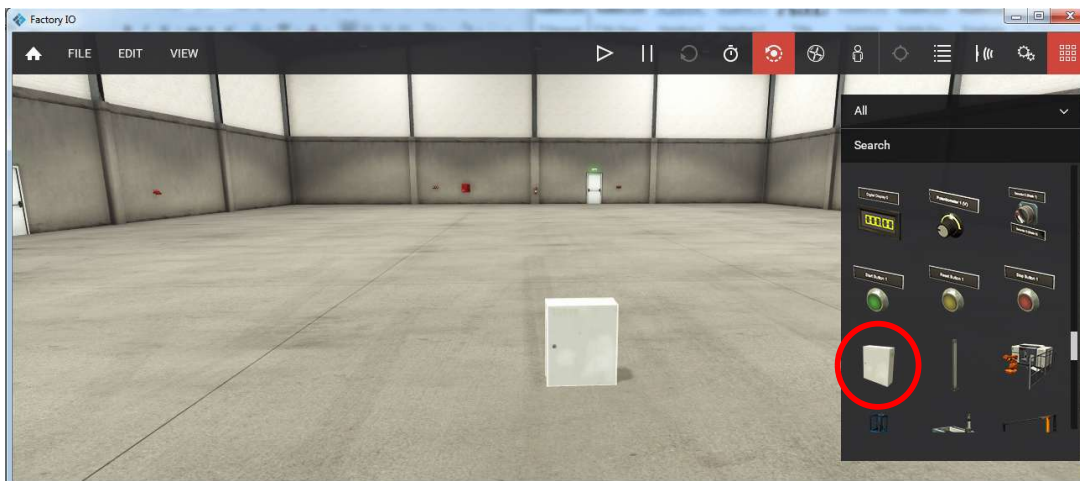
- Objective** : To familiarize with Factory I/O software to build simulated objects  
: To familiarize with TIA automation software to build ladder diagram
- Task** : Using TIA S7-PLCSIM PLC with program to control objects build with  
Factory I/O software

### Procedures:

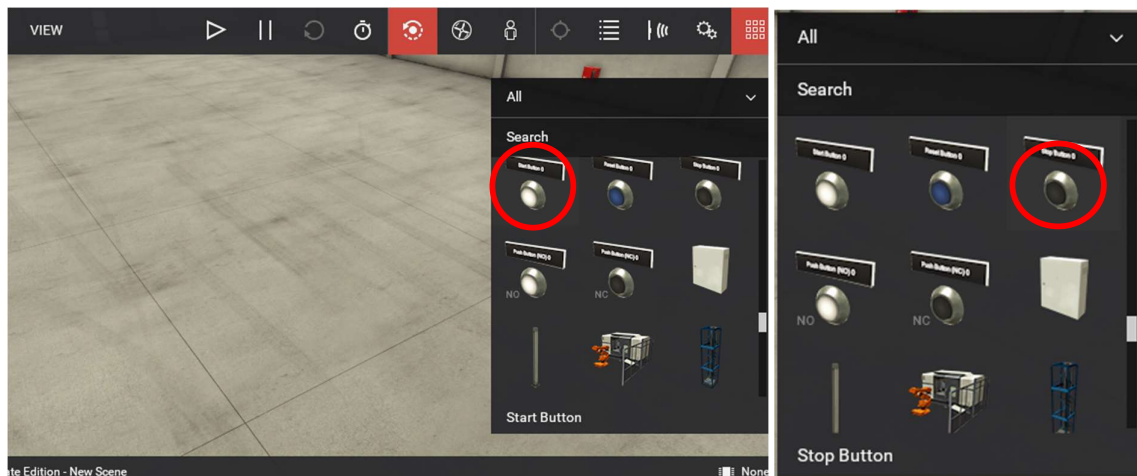
Launch the Factory I/O program by clicking on the icon



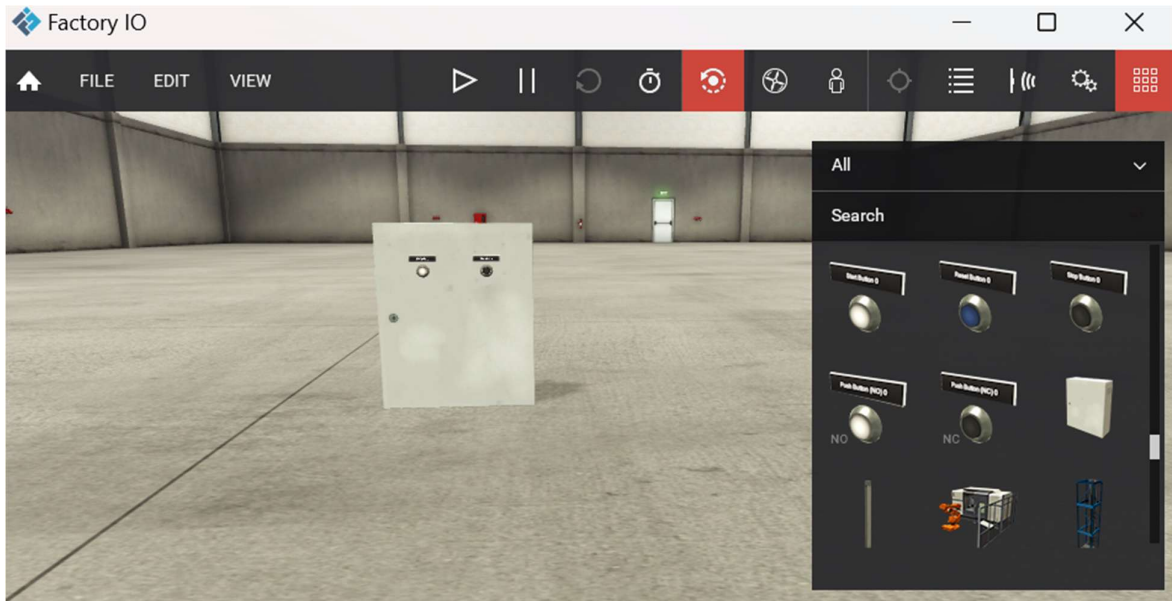
Look for the “Electric Switchboard” from the Palette and drag it to the floor area.



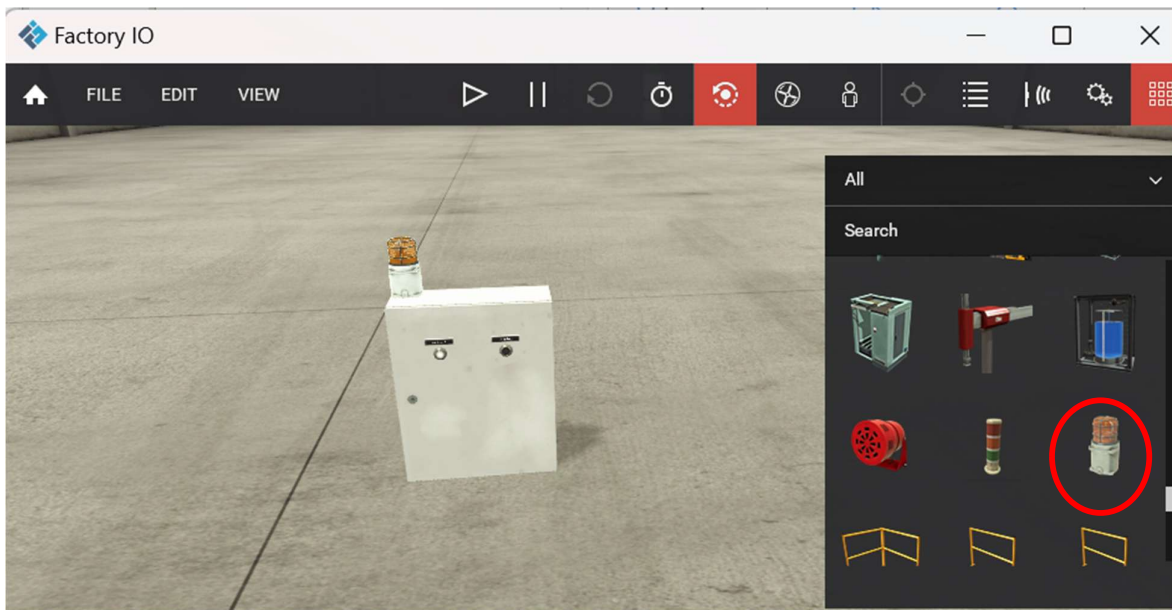
Drag and drop the “Start button” and “Stop button” to the “Electric switchboard” on the floor.



## INDUSTRIAL AUTOMATION & CONTROL SIMULATION



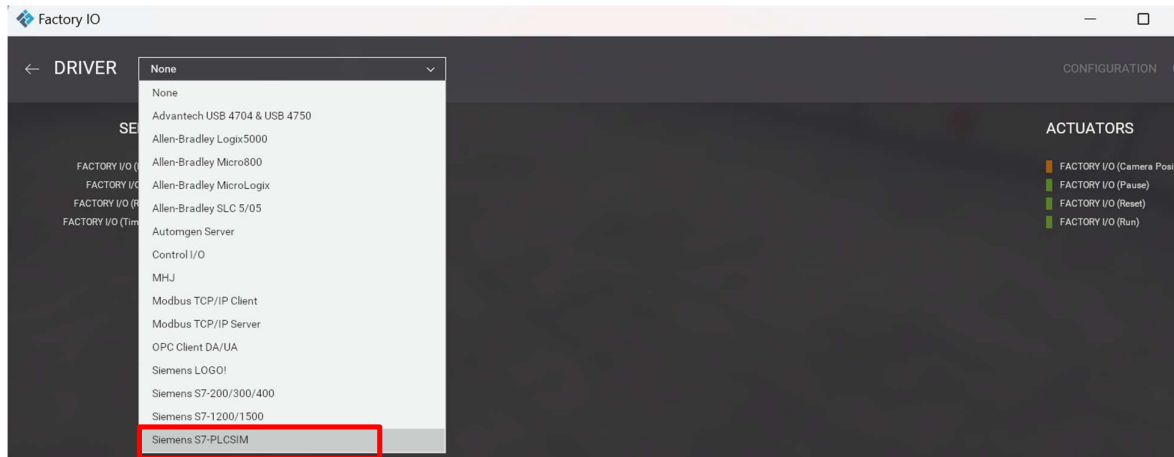
Now drag and drop the “warning light” from the palette & place it on top of the “electric switchboard”



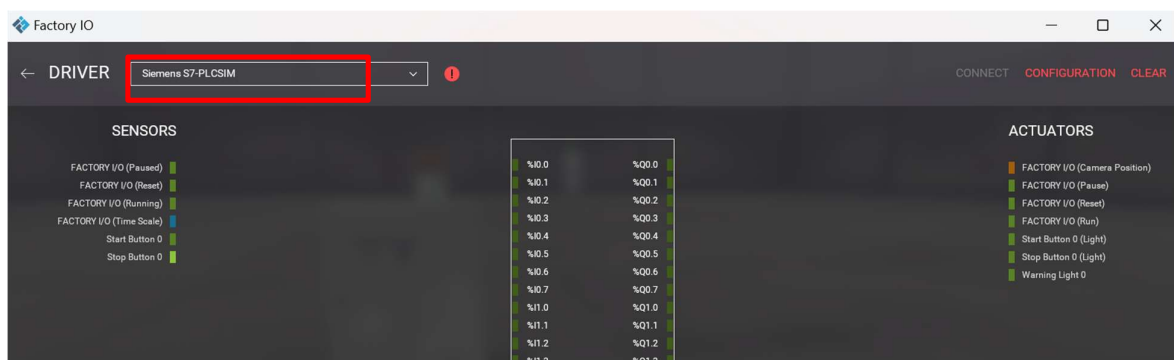
Click “File” and then “Drivers”



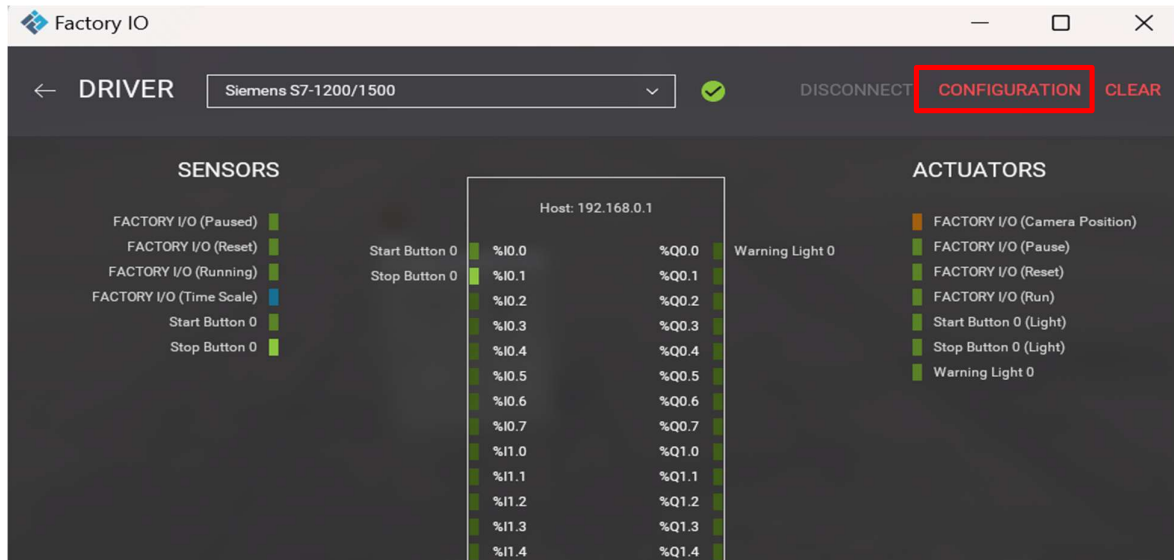
# INDUSTRIAL AUTOMATION & CONTROL SIMULATION



Select “Siemens S7-PLCSIM”



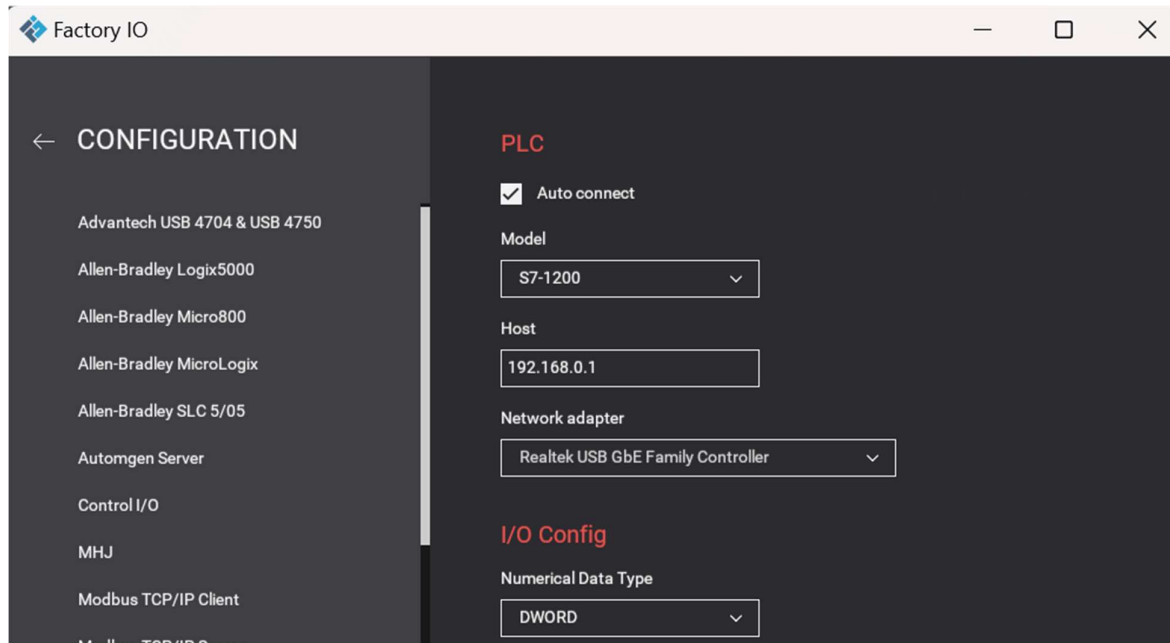
Now, drag the “Start Button 0” on the left (under Sensors) to %I0.0 (Input 0), and also the “Stop Button 0” to %I0.1 (input 1) and then the “Warning Light 0” on the right (under Actuators) to %Q0.0 (output 0).



Click on the “CONFIGURATION” in red.

Notice the Host IP address. Now minimize the Factory I/O program.

## INDUSTRIAL AUTOMATION & CONTROL SIMULATION



***Next, we need to create a PLC program from TIA software and download to PLCSIM in order to control the respective components in Factory I/O scene.***

Launch TIA Portal from the PC desktop




Download the Factory IO template:

**Download** and **Open** the template project corresponding to the TIA Portal version and PLC family you will be simulating.

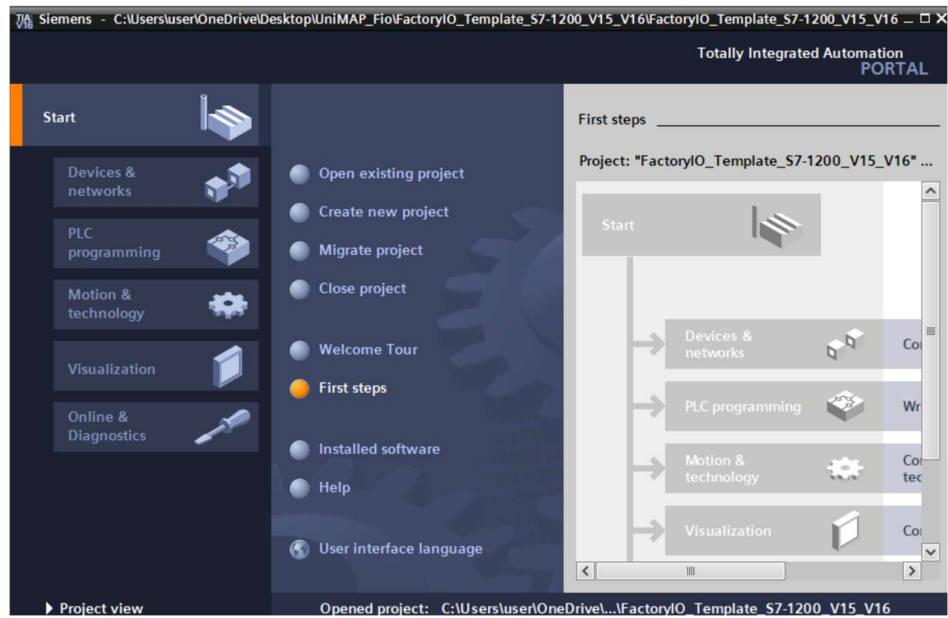
**Save** the project with a new desired name.

[https://realgames.b-cdn.net/fio/tutorials/FactoryIO\\_Template\\_S7-1500\\_V15.zip](https://realgames.b-cdn.net/fio/tutorials/FactoryIO_Template_S7-1500_V15.zip)

Open the template:

 FactoryIO\_Template\_S7-1200\_V15\_V16.ap16

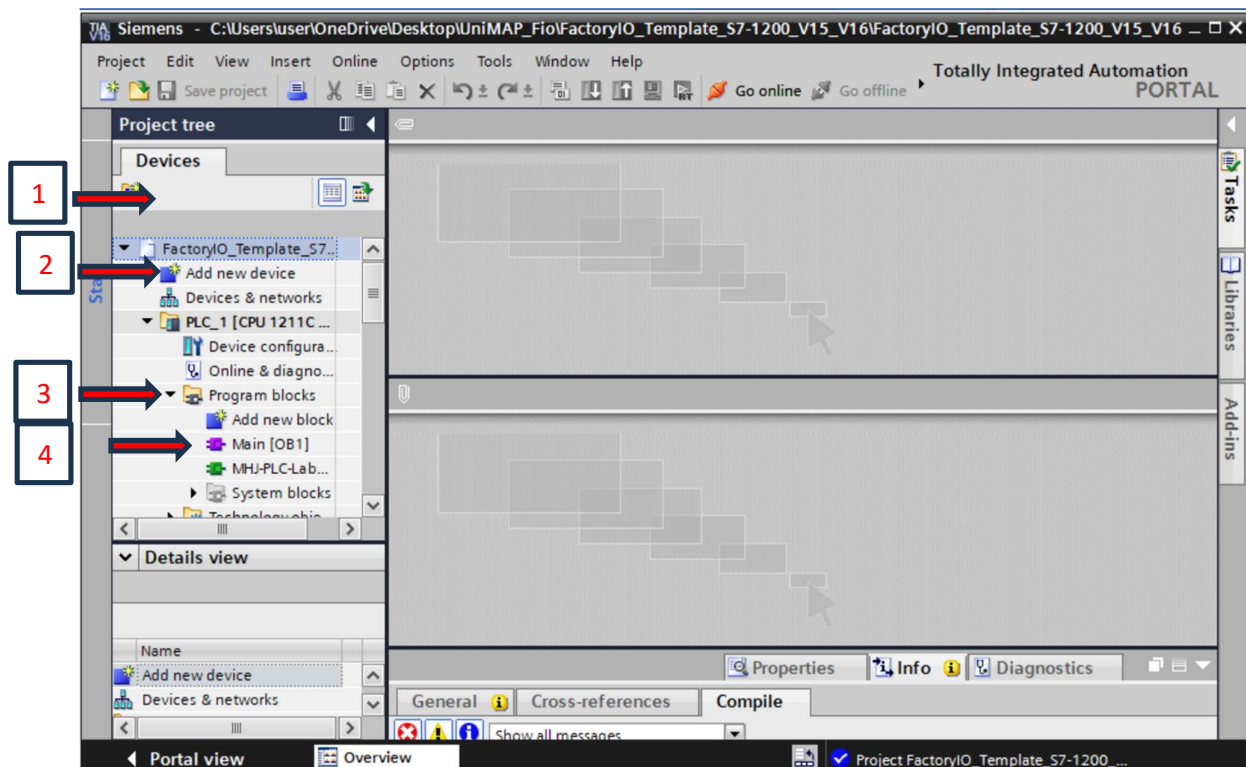
# INDUSTRIAL AUTOMATION & CONTROL SIMULATION



Select "Project view"

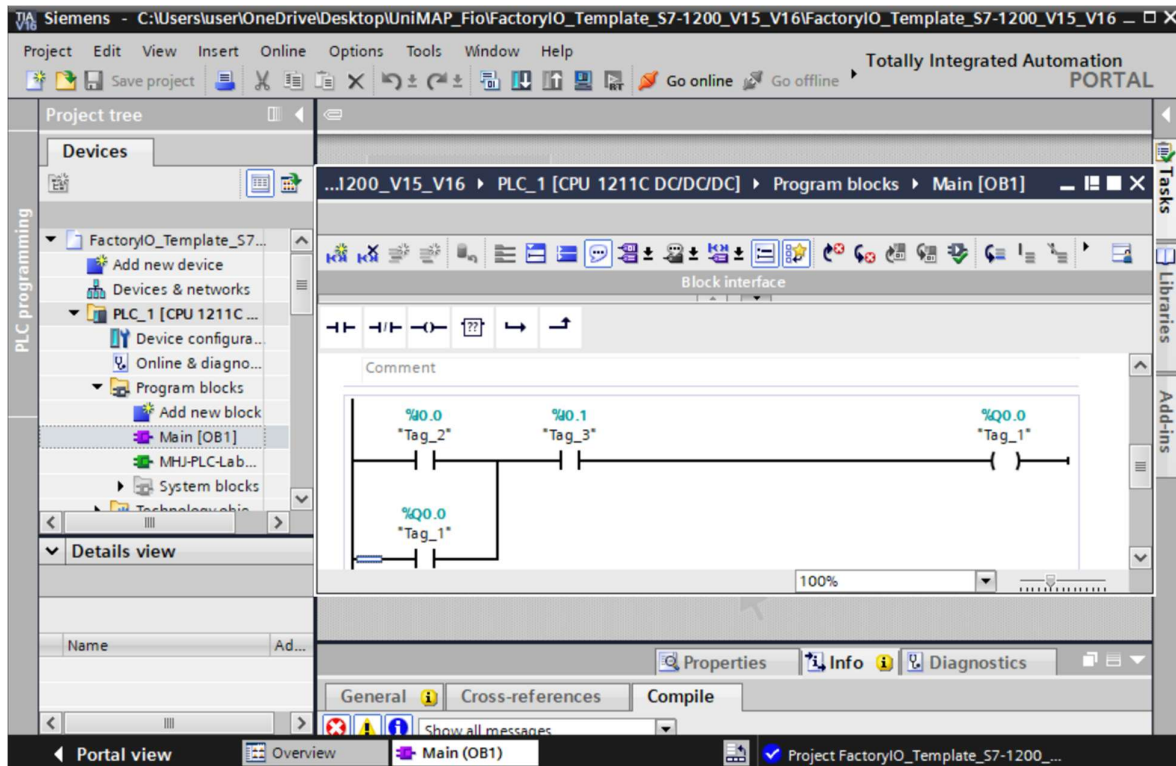
1

Click on **PLC\_1** follow by **Program Blocks**

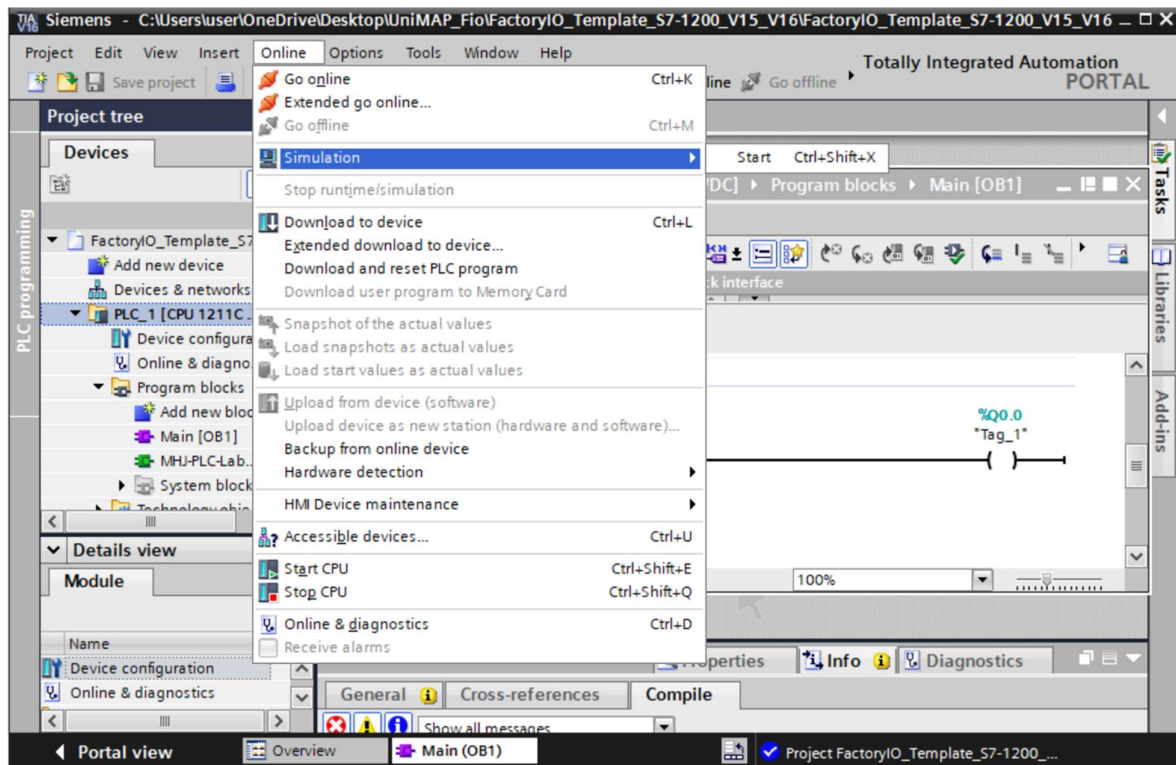


Double-click to open the Main [OB1]

## INDUSTRIAL AUTOMATION & CONTROL SIMULATION

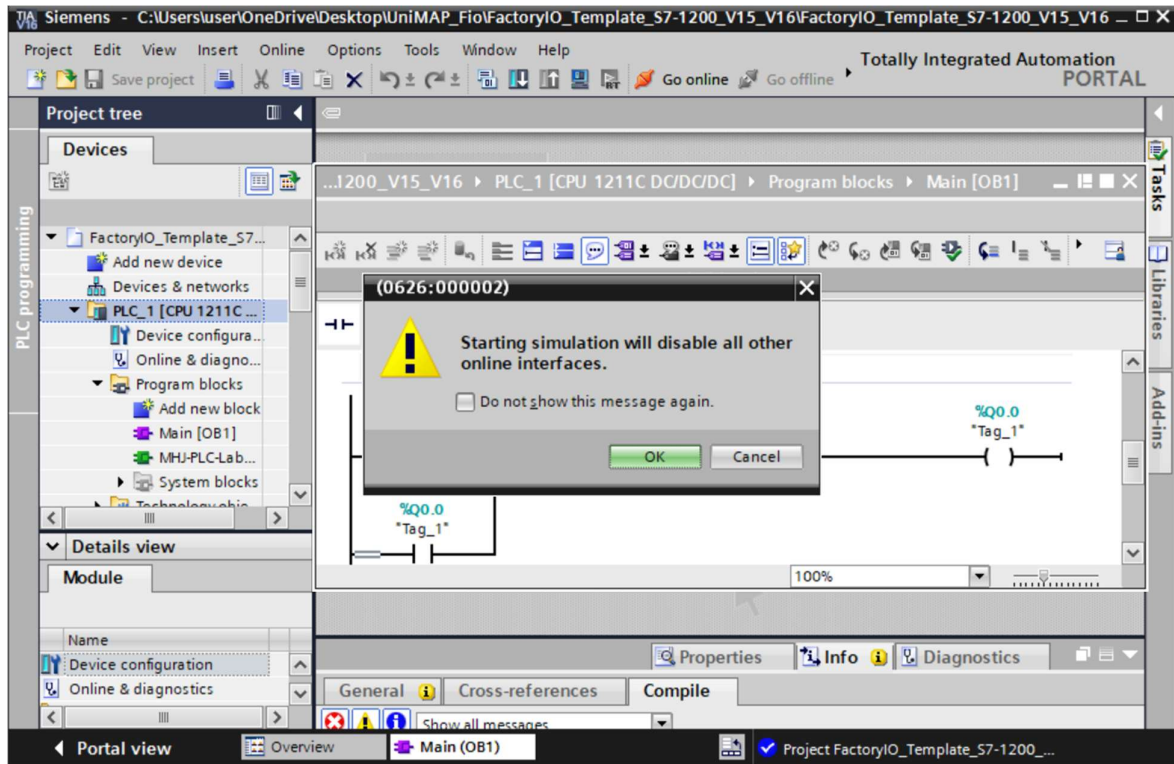


Construct a “Holding Circuit”

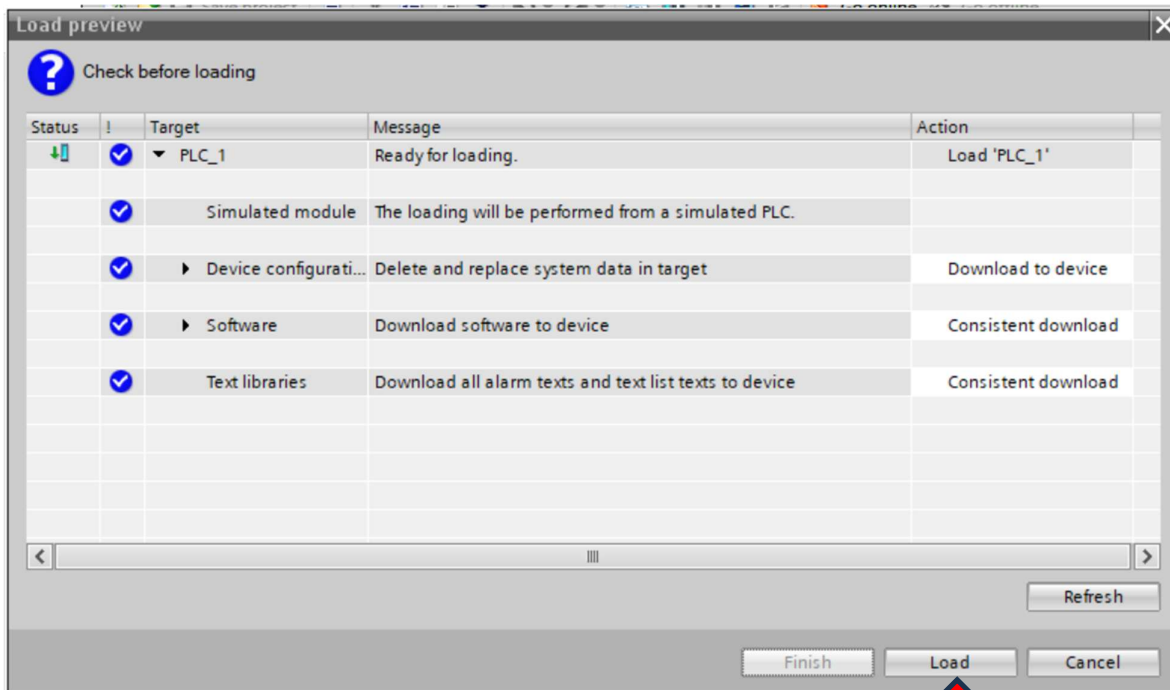


Click “Online” > Simulation > Start to launch PLCSIM

## INDUSTRIAL AUTOMATION & CONTROL SIMULATION

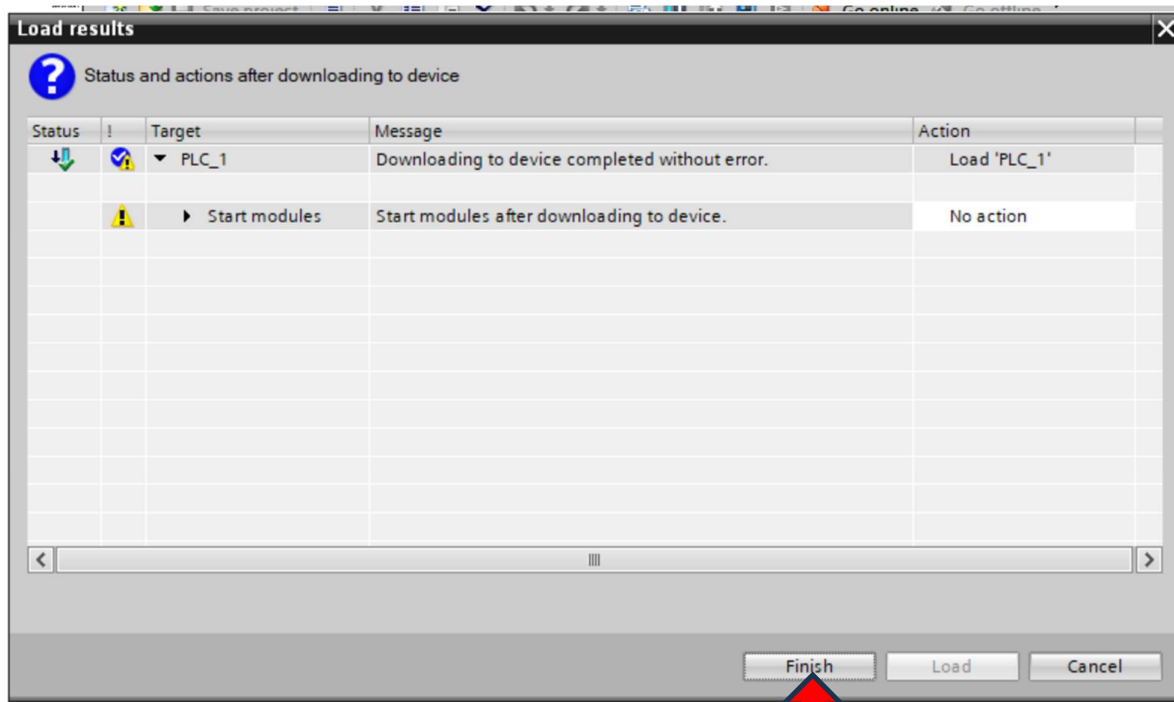


Click OK to start the PLCSIM

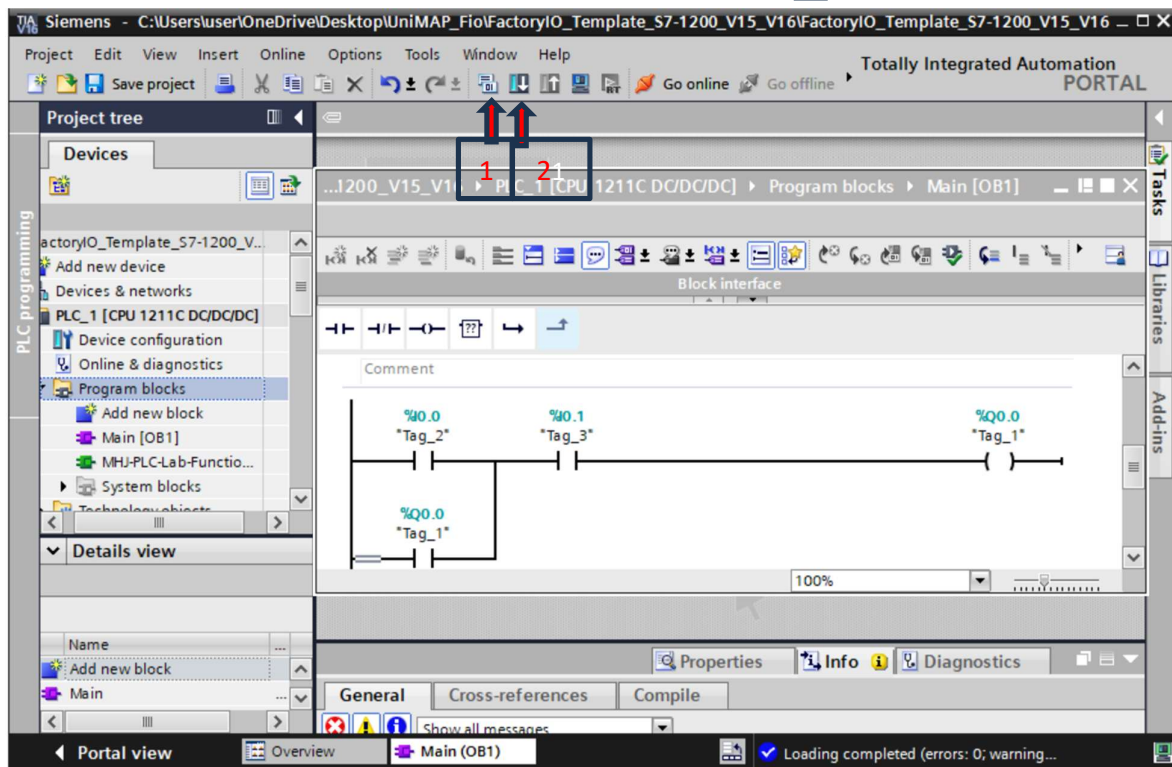


Click "Load"

## INDUSTRIAL AUTOMATION & CONTROL SIMULATION

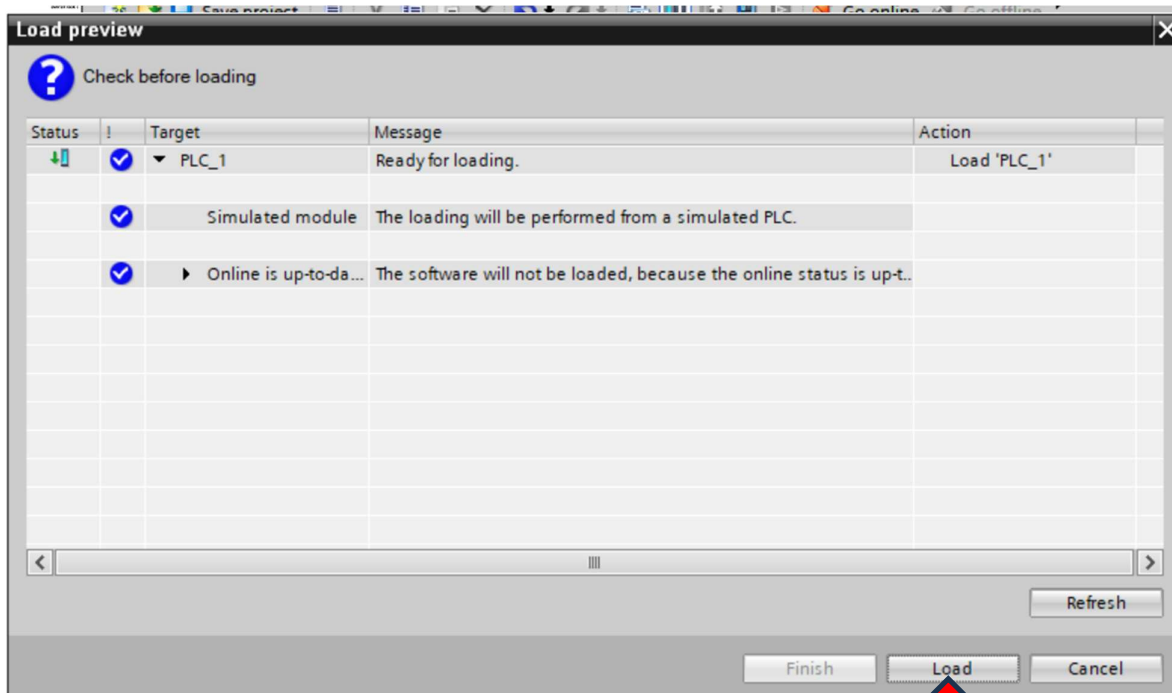


Click "Finish"

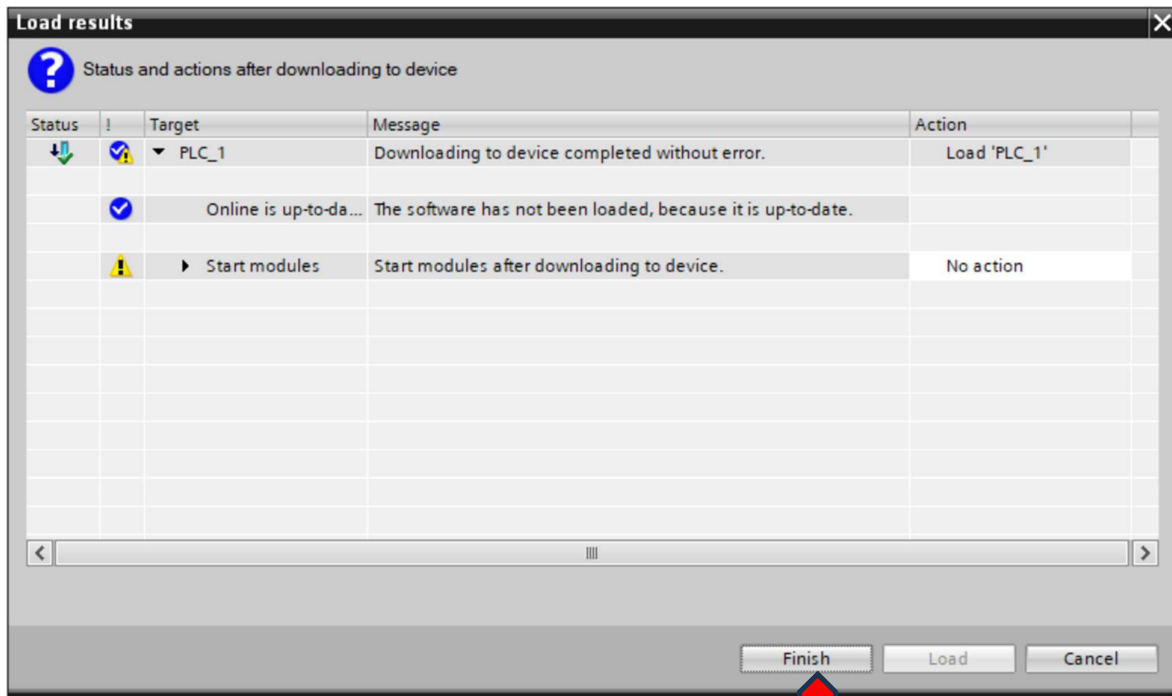


1. Compile, then 2. Download to PLCSIM

## INDUSTRIAL AUTOMATION & CONTROL SIMULATION

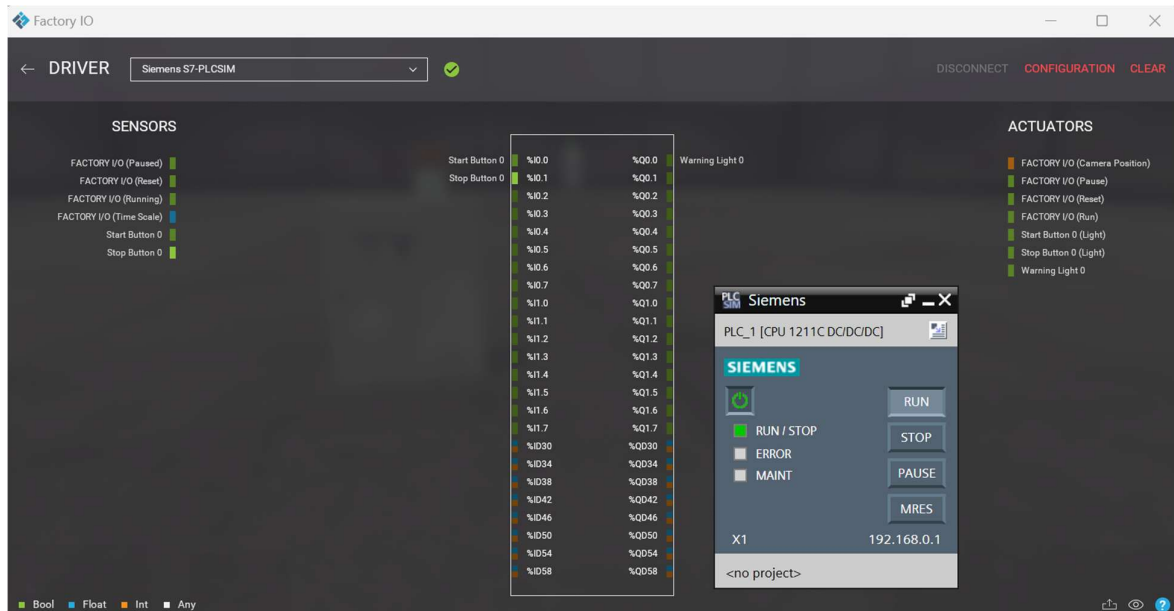


Click "Load"

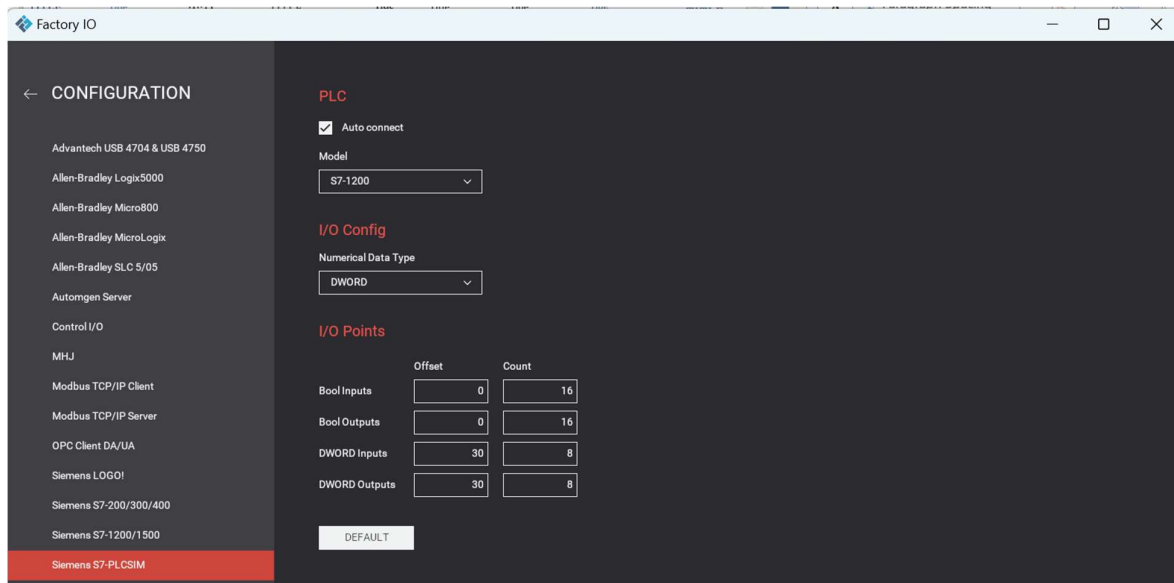


Click "Finish"

# INDUSTRIAL AUTOMATION & CONTROL SIMULATION

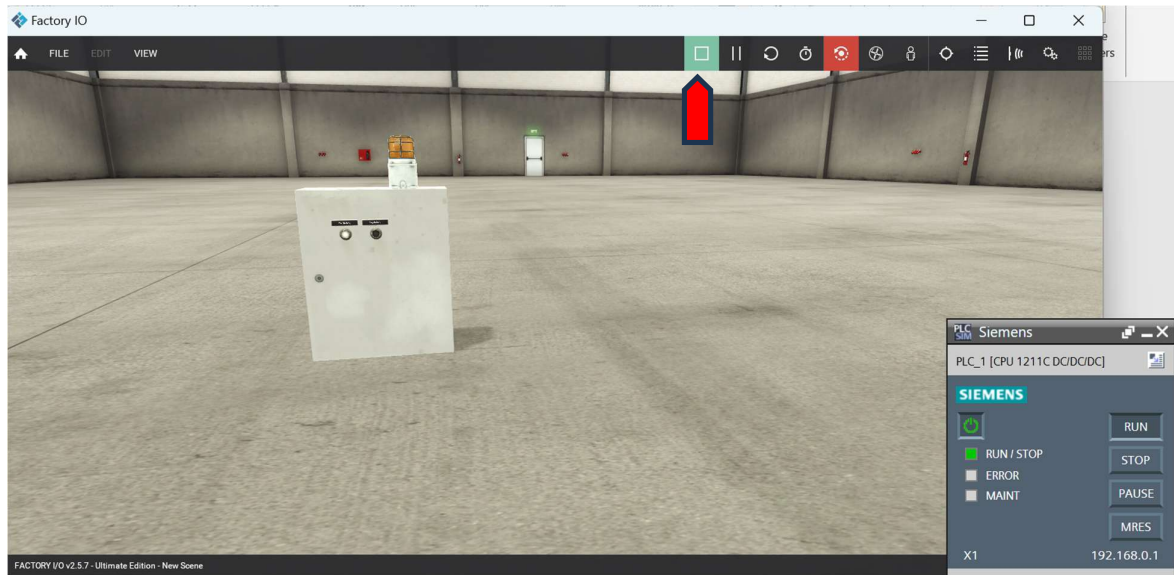


Go back to the Factory io “Driver” and select PLCSIM

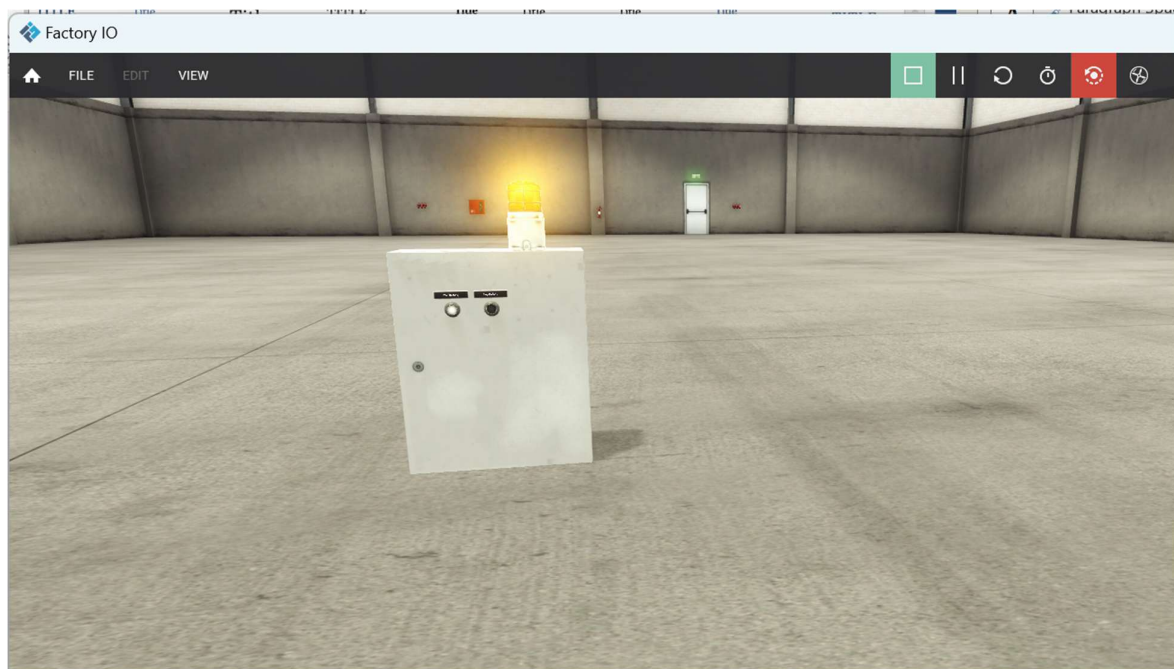


In the Configuration, select the PLC type e.g. S7-1200 or S7-1500

## INDUSTRIAL AUTOMATION & CONTROL SIMULATION



Click RUN at the PLCSIM console



Click RUN on the Factory io

Click the Start button to hold the circuit and Stop button to break the circuit.