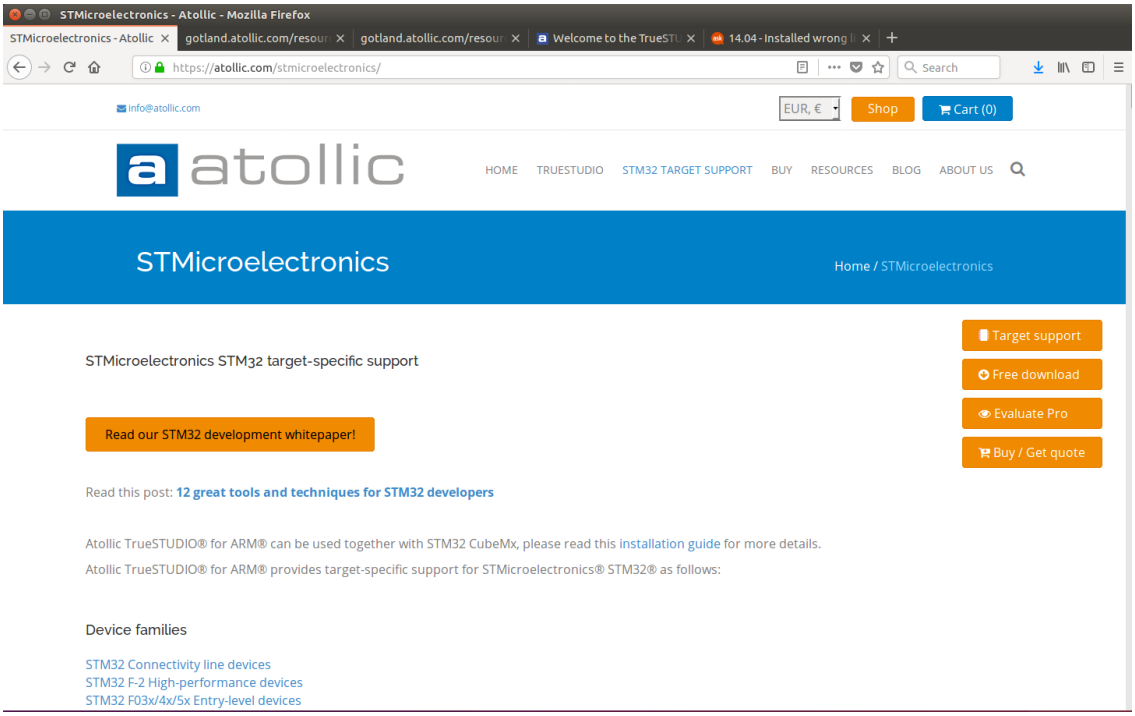
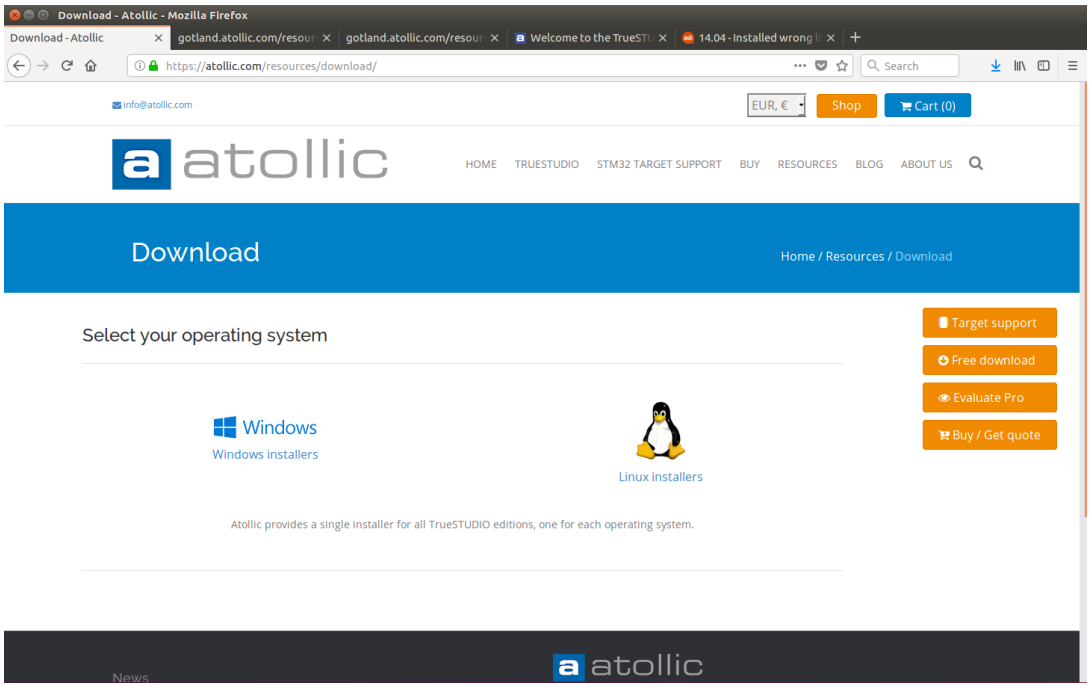
Atollic TrueSTUDIO Installation

1. Browse to https://atollic.com/stmicroelectronics/

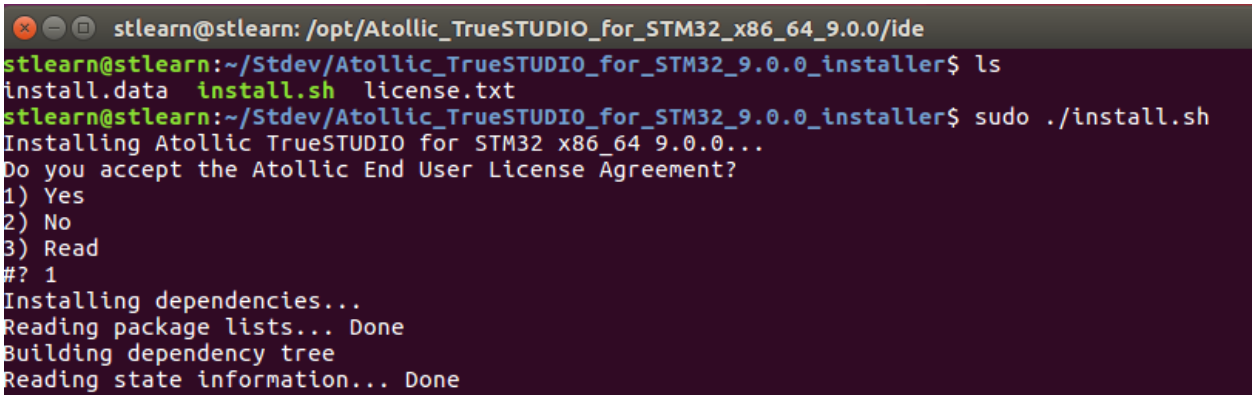


2. Click on the Free download button on the right side of the page



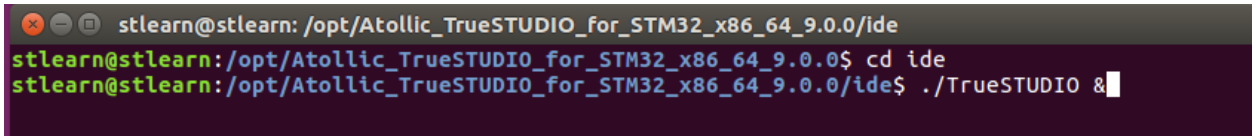
3. Extract the zip file with right click -> Extract here

4. Open a terminal window and browse to the extracted folder (Tip in the extracted folder, you can right click -> Open terminal window here)



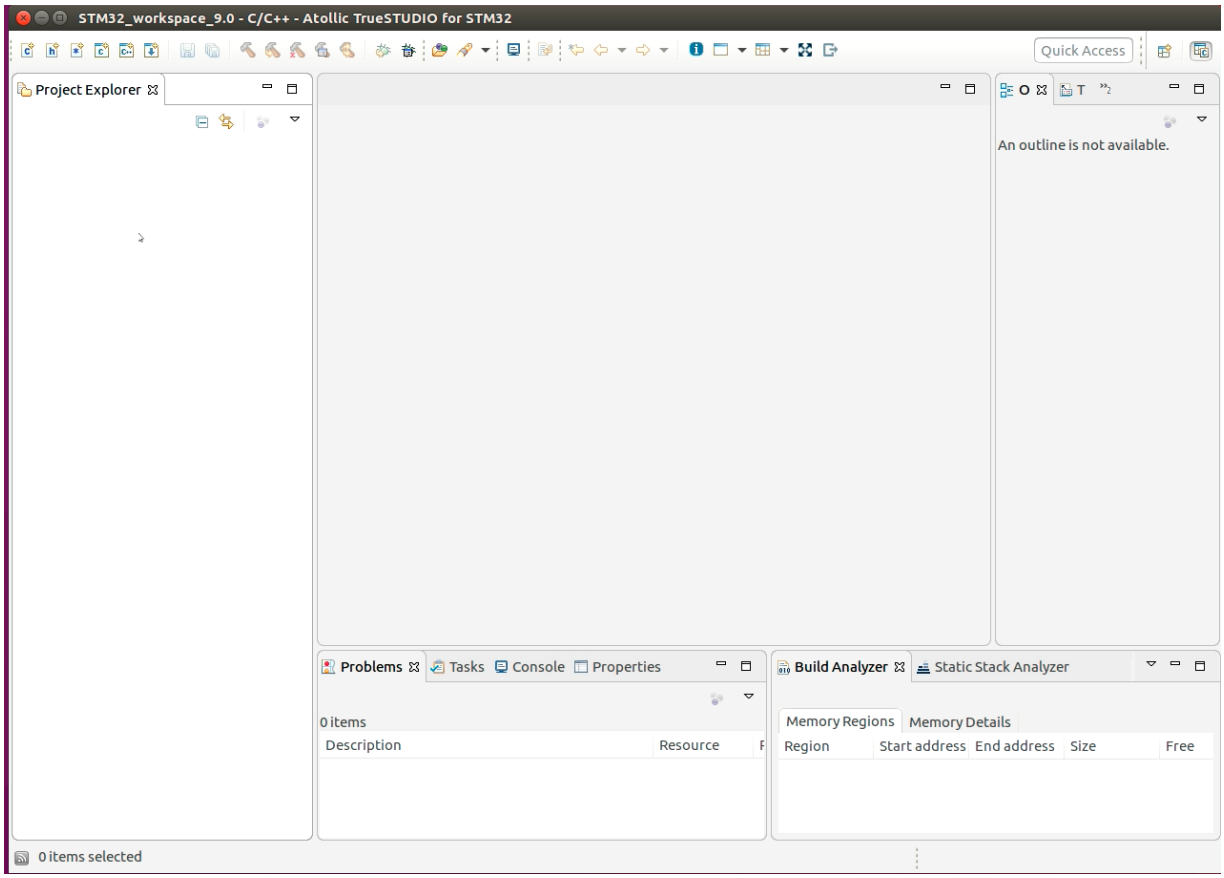
5. Type sudo ./install.sh and follow the installation procedure. You will get a few prompts during the installation process, type 1 for each of them.

6. The default installation location is /opt/Atollic_TrueSTUDIO_for_STM32_x86_64_9.0.0



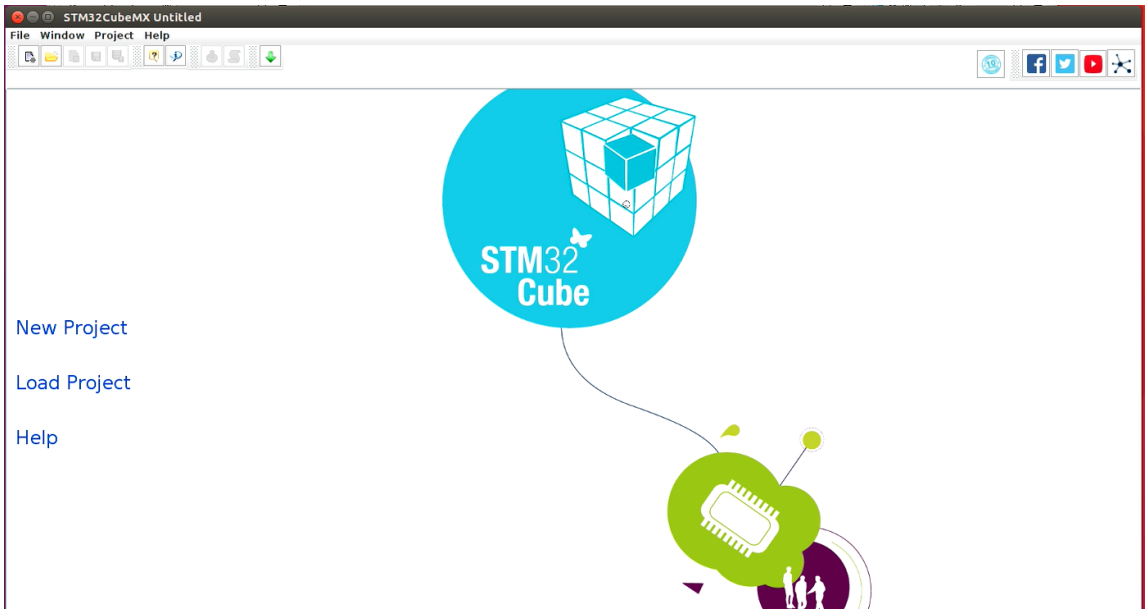
Navigate to this directory in the terminal as shown above and launch TrueSTUDIO

7. The TrueSTUDIO IDE will open as shown below. It is based on the Eclipse IDE which we have already learned in this course, so you will be familiar with this interface.

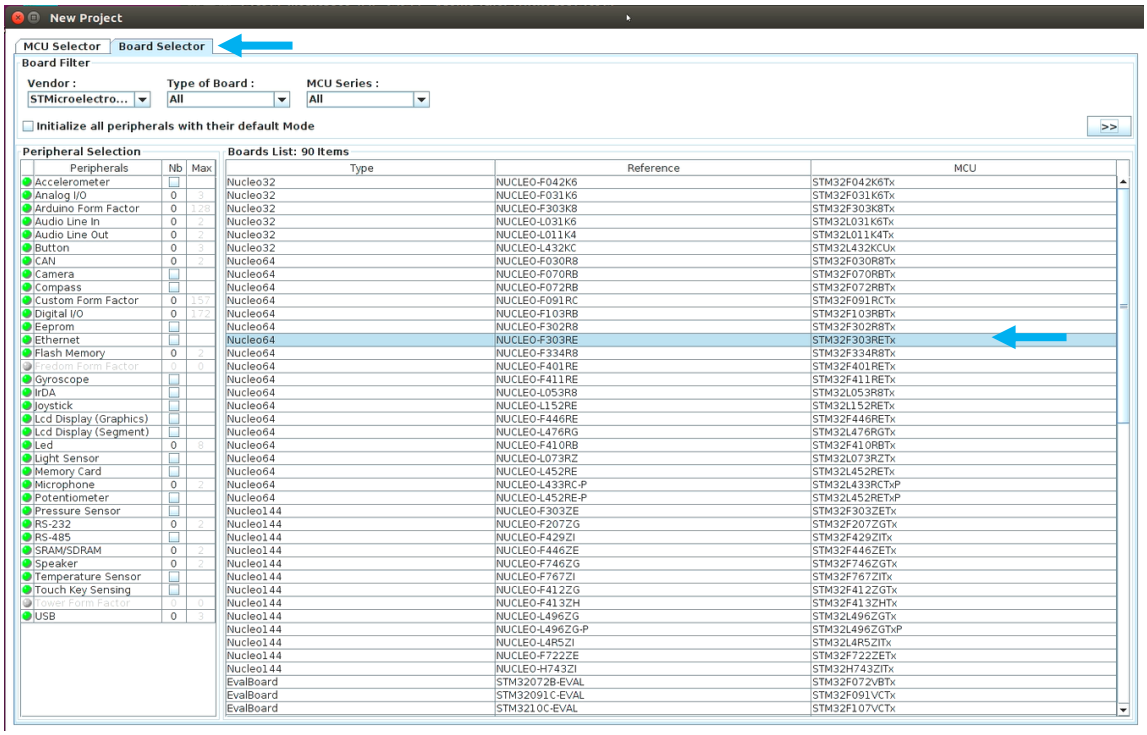


8. Next, we are going to create a STCubeMX project as explained in detail in Section 6 of this course.

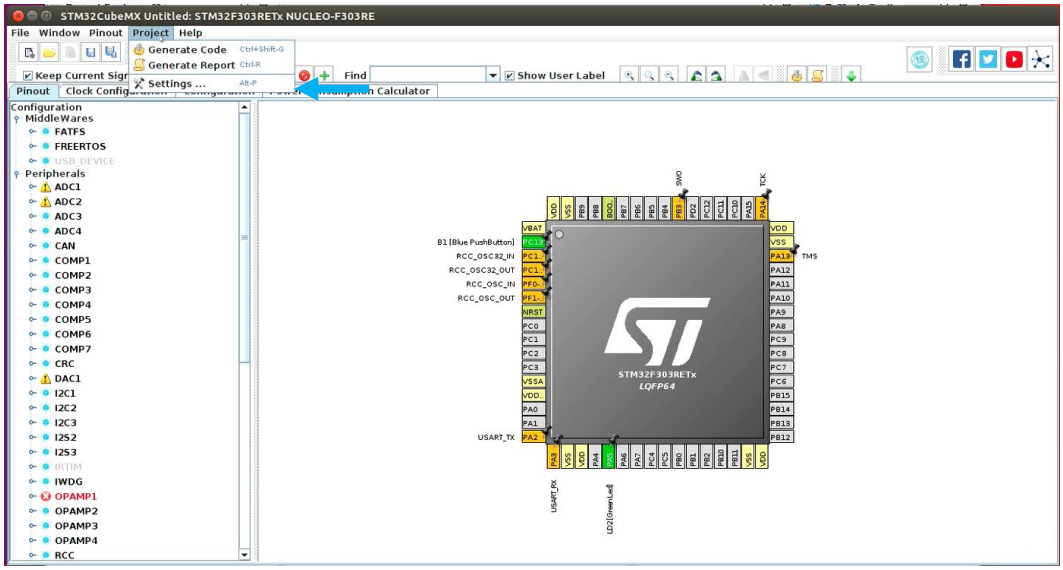
A)



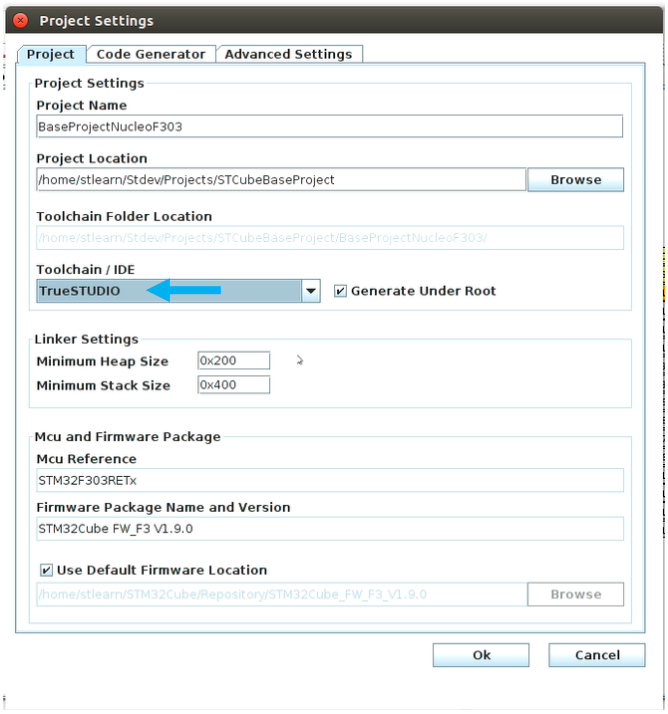
B)



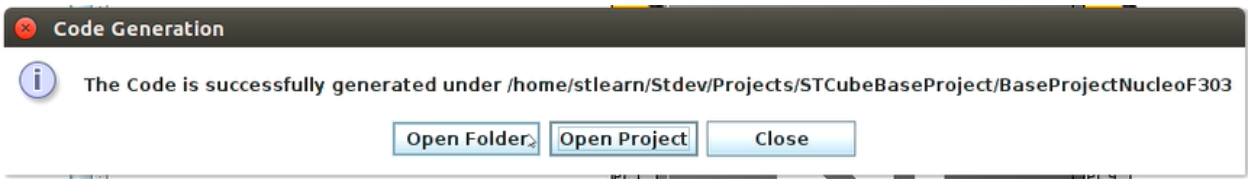
C)



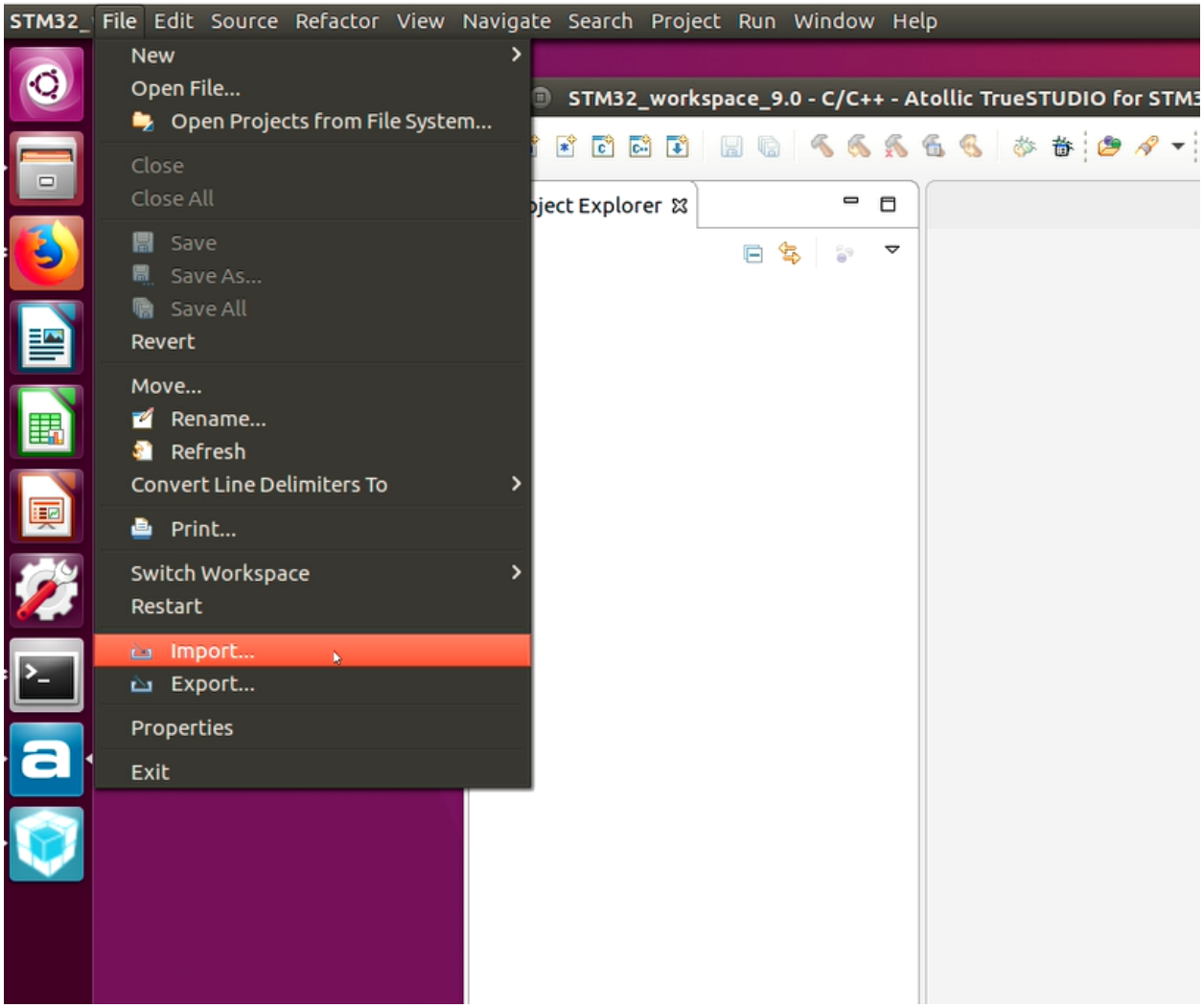
D) Steps A,B, and C are the same as what we have discussed in detail in Section 6 of this course. Step D is different. Enter the project name and location and **select TrueSTUDIO** for your choice of Toolchain/IDE.



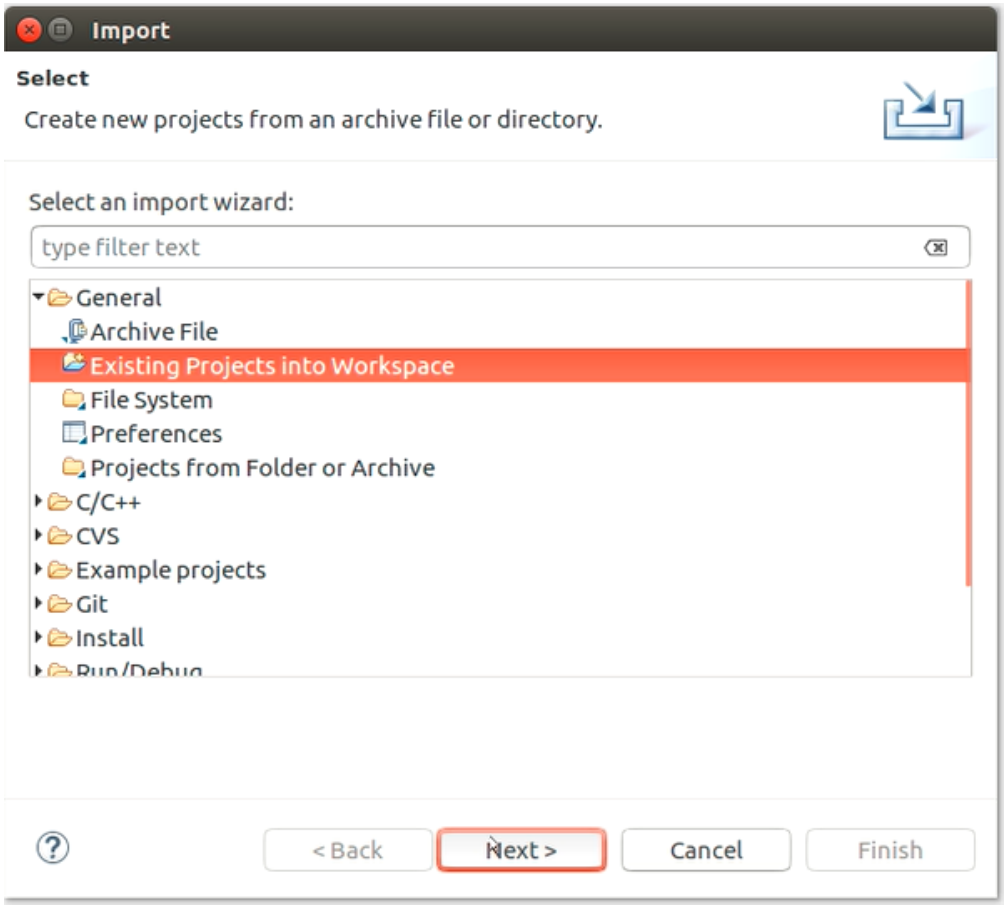
9. STCube will inform that the code has been generated successfully. Take note of the path where the project is saved and click on close.



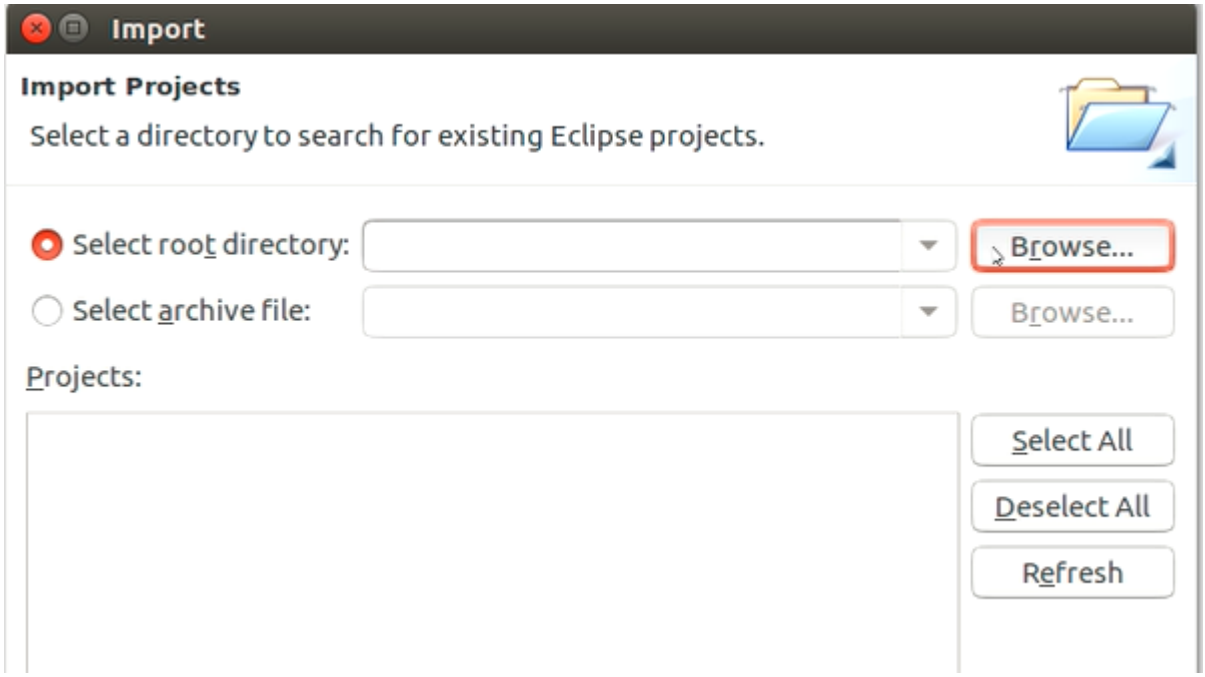
10. Now, let's go back to the Atollic TrueSTUDIO IDE and on the top menu click on File -> Import

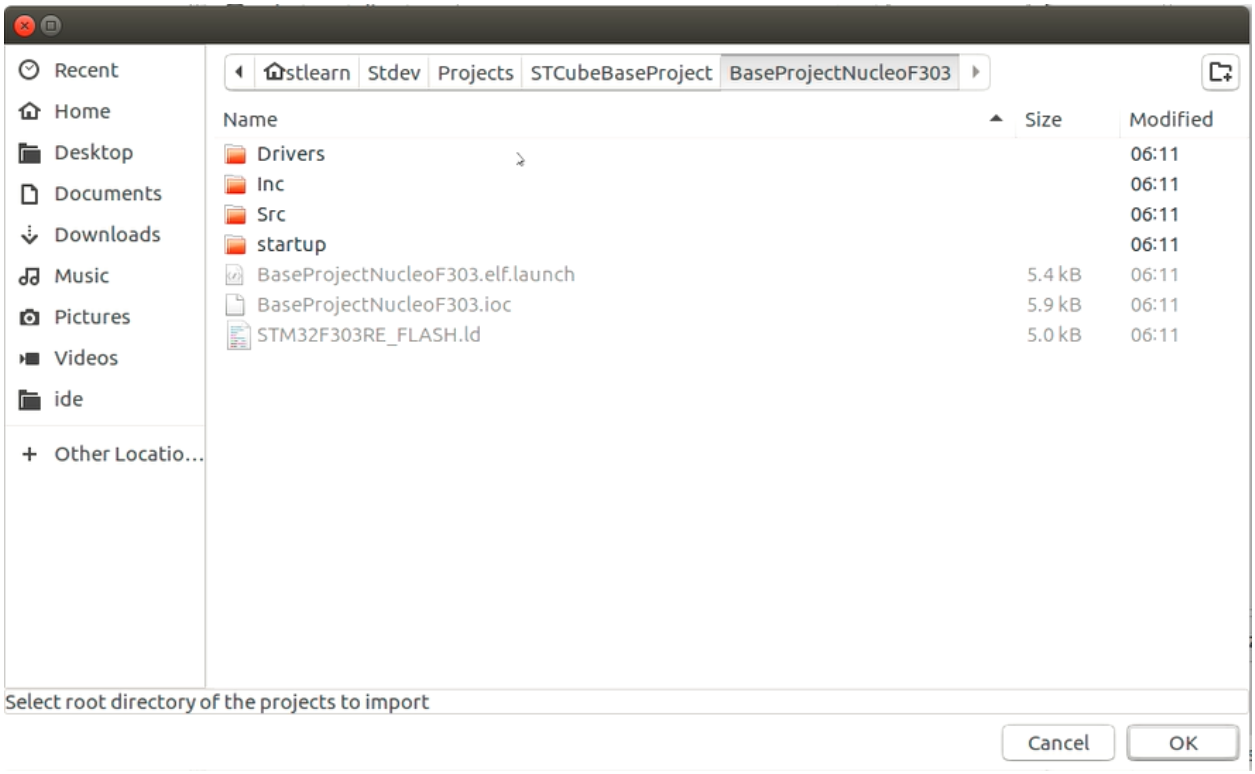


11. In the Import dialog box, click on Existing Projects into Workspace under the General folder option.

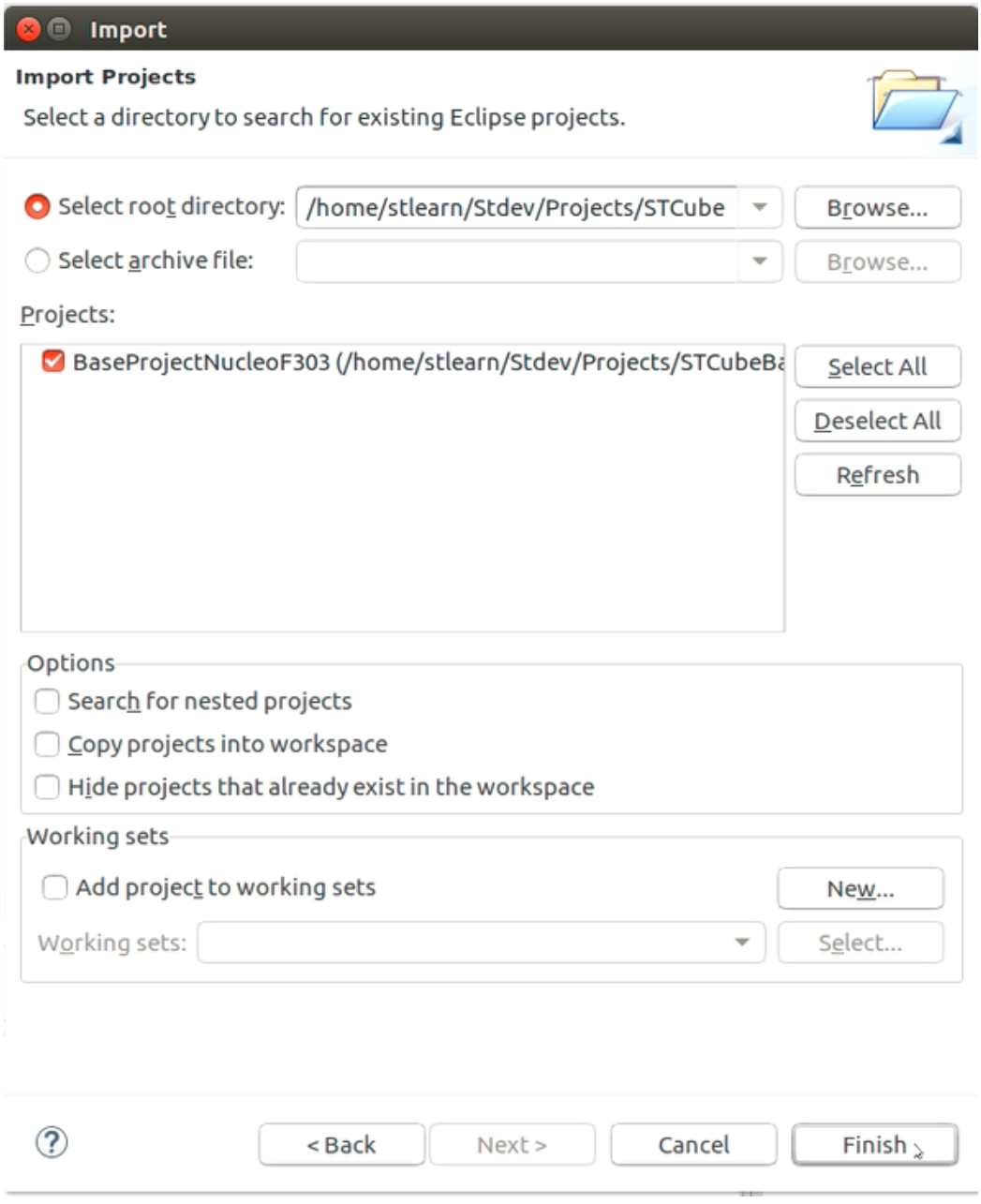


12. Browse to the path of the project that you created in STCube

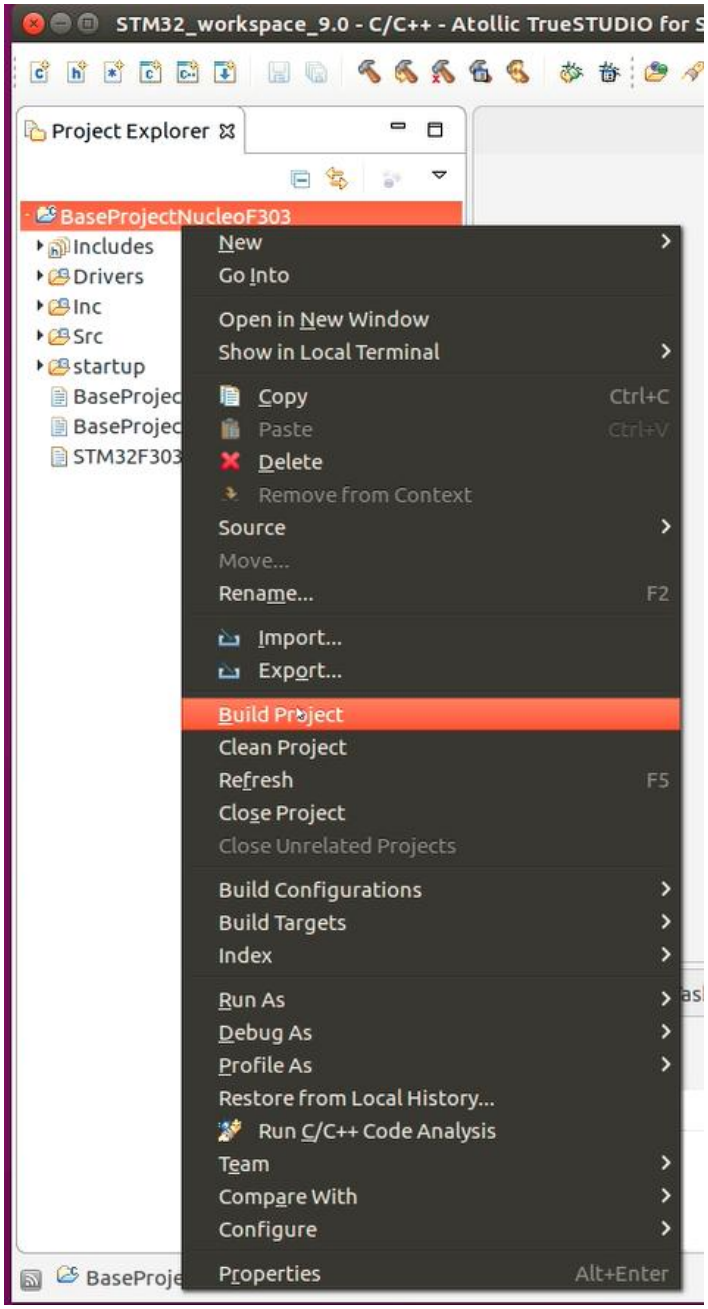




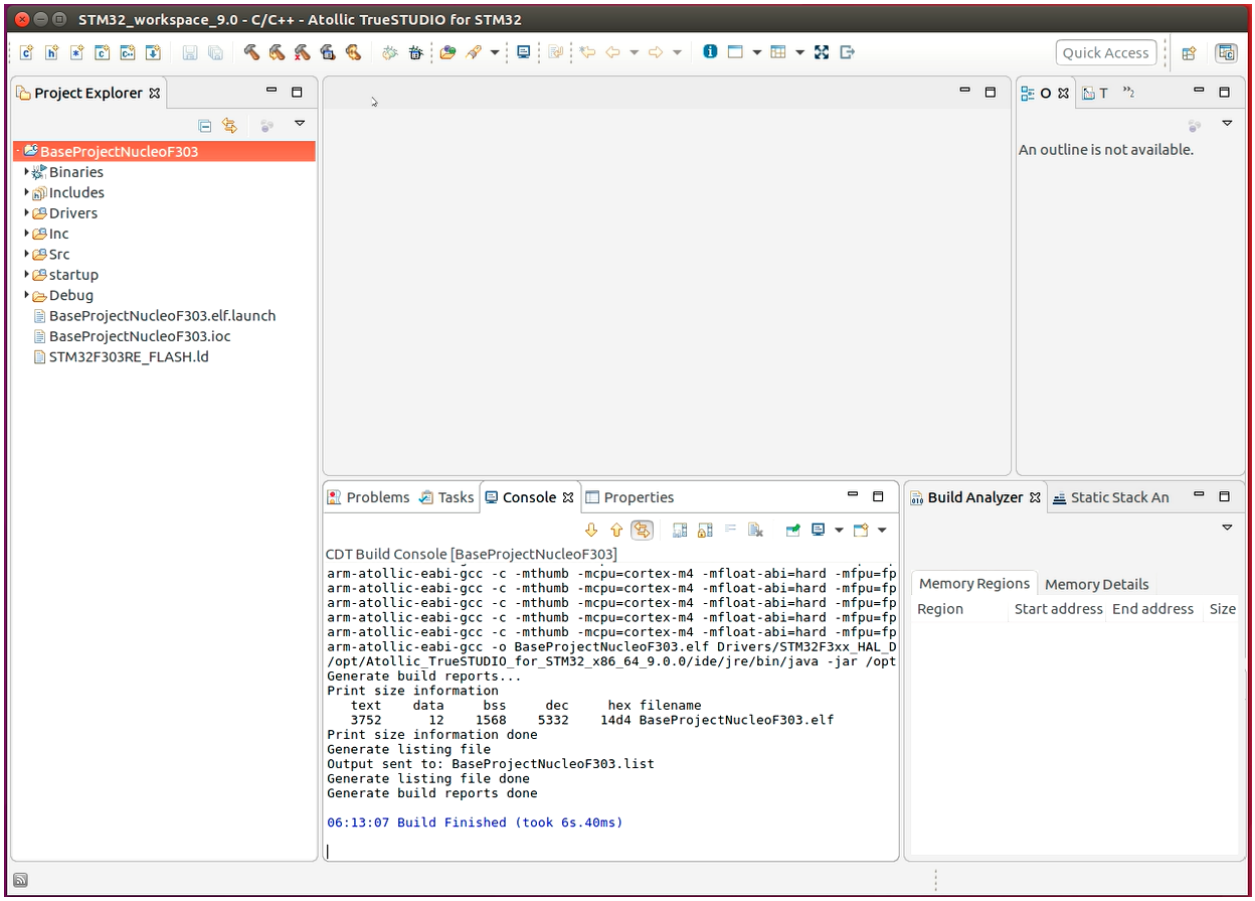
13. The Project should appear in the Projects: window as shown below. If it does not appear there, check the path that you provided in point 12 above. If everything looks as below, click Finish.



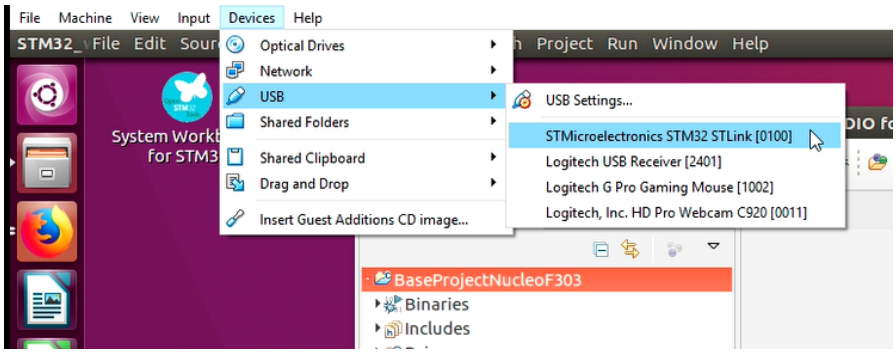
14. After the project is imported into TrueSTUDIO, right click on project and select Build Project



15. The Build should complete successfully and the console window should say Build Finished



16. To debug and load the binary files onto the Nucleo board, first we need to make sure that the STM32 STLink is connected. This can be done by going to Devices -> USB -> STMicroelectronics STM32 STLink. This procedure is explained in detail in the FAQ and Troubleshooting lecture in Section 5 of this course. After this step, LD1 should be a constant red or constant green on your Nucleo board.

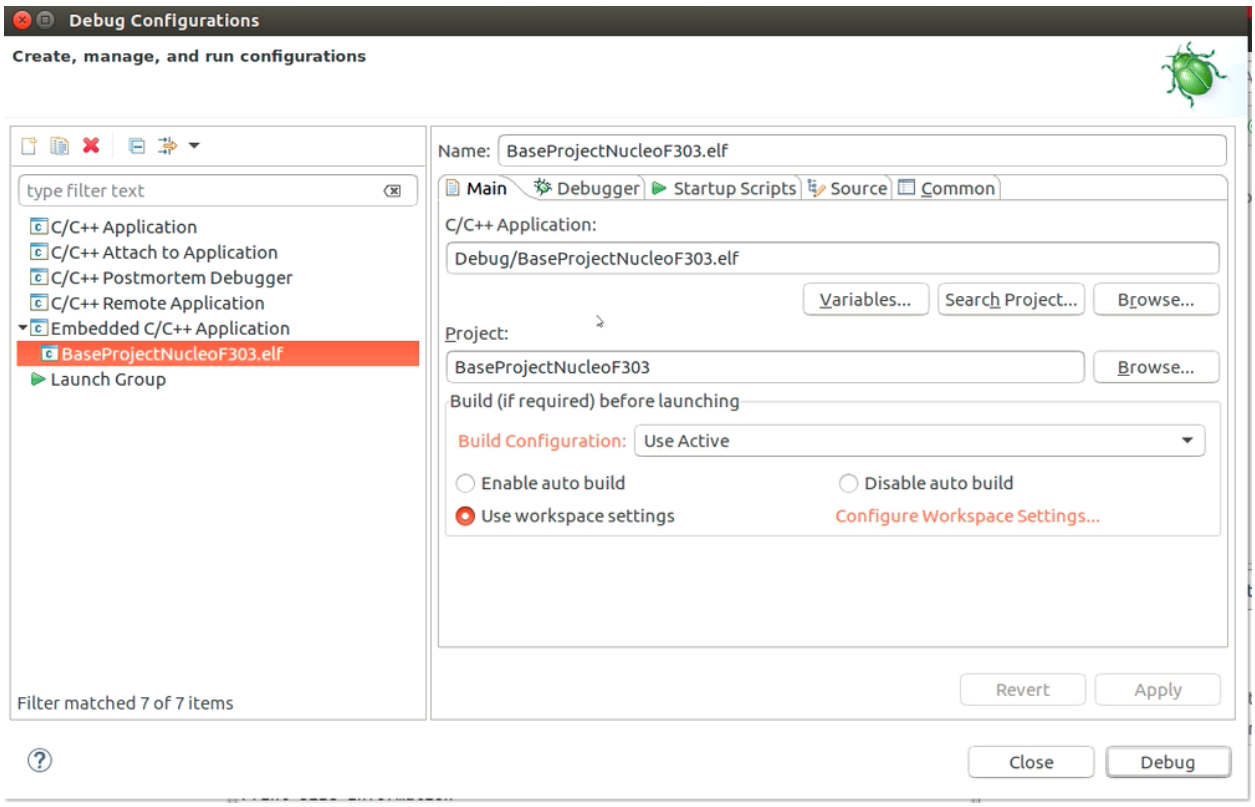


17. In TrueSTUDIO, click on the Debug Configurations icon in the top menu

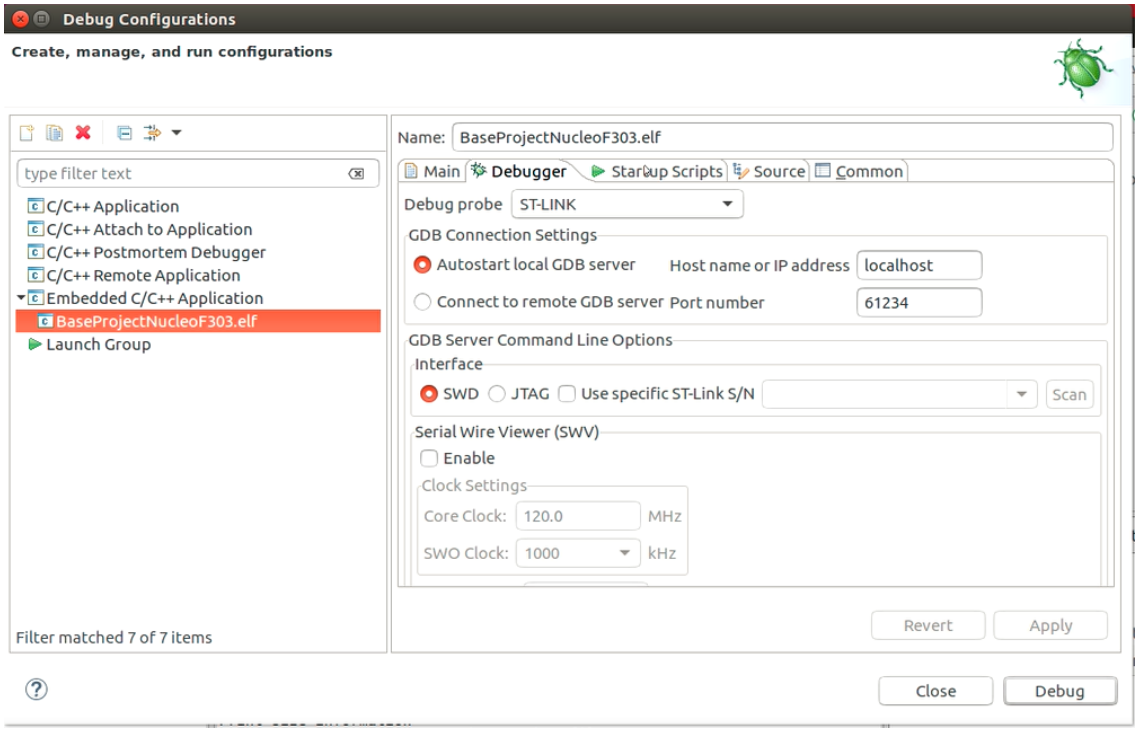
18. In the Debug Configurations window, in the left menu click on Embedded C/C++ Application and in the drop down, select BaseProjectNucleoF303.elf as shown below. The name of the .elf file will be the same as your project name.

The following screenshots are provided for reference, nothing is to be changed in the Debug Configurations tabs if it looks the same as what is shown.

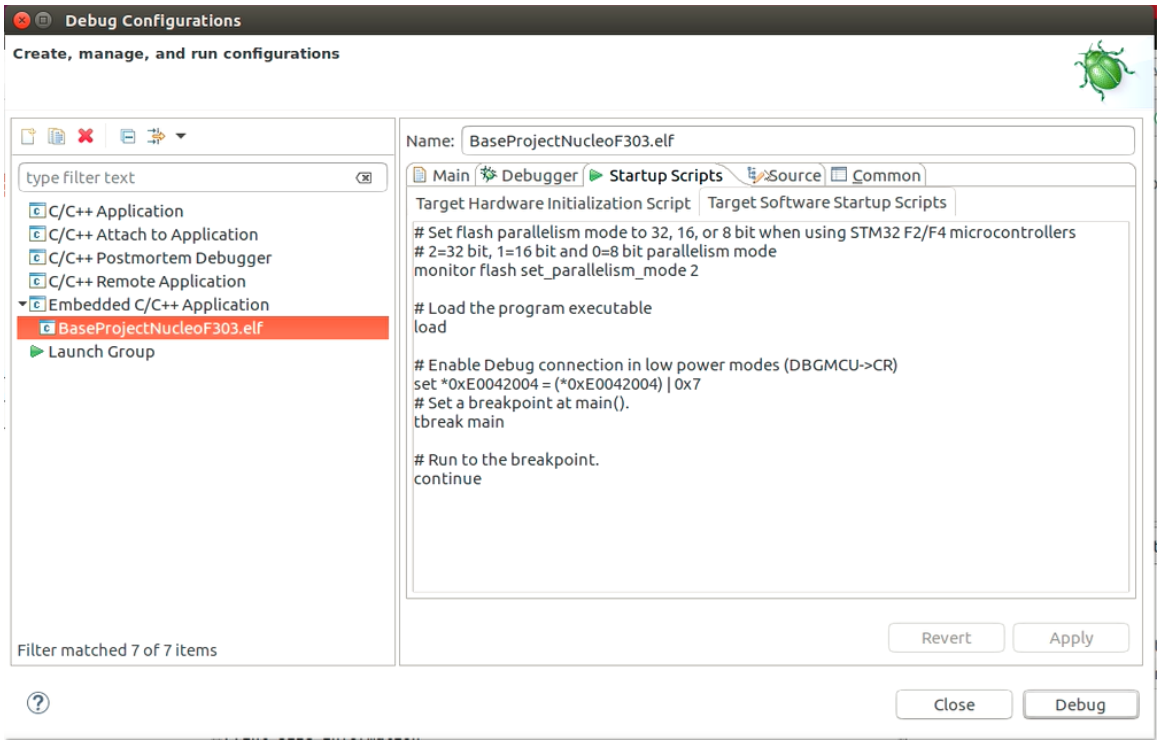
A)



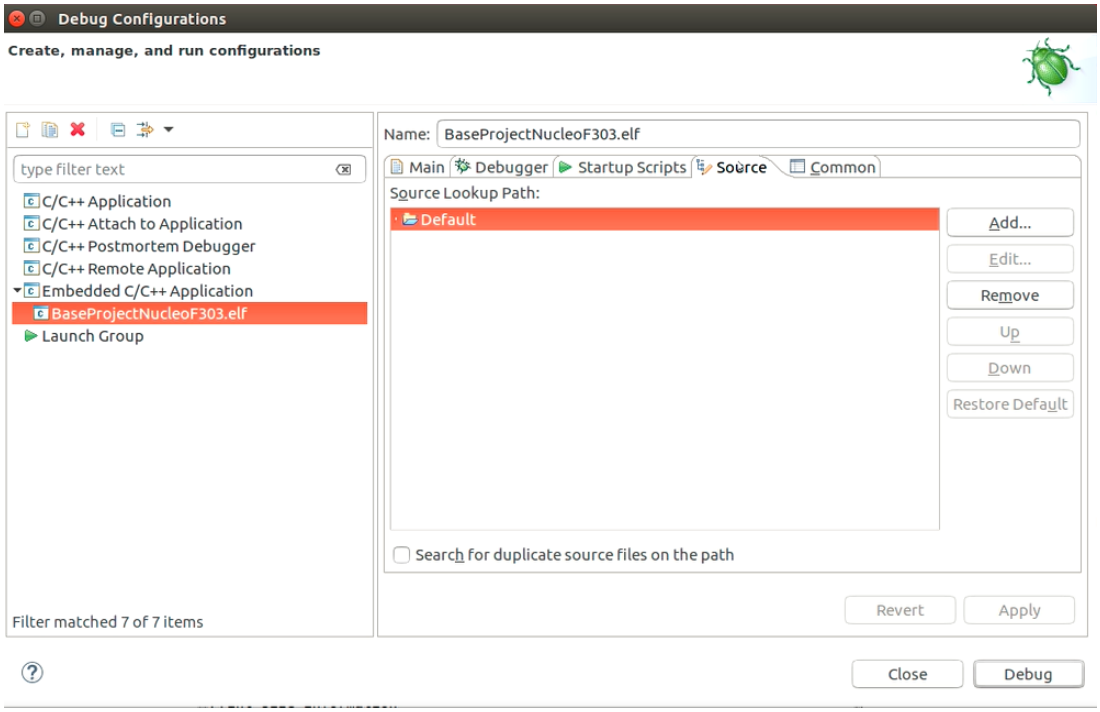
B)


Debug Configurations
Create, manage, and run configurations
type filter text
C/C++ Application
C/C++ Attach to Application
C/C++ Postmortem Debugger
C/C++ Remote Application
Embedded C/C++ Application
BaseProjectNucleoF303.elf
Launch Group
Filter matched 7 of 7 items
Name: BaseProjectNucleoF303.elf
Main
Debugger
Startup Scripts
Source
Common
Debug probe
ST-LINK
GDB Connection Settings
Autostart local GDB server
Host name or IP address
localhost
Connect to remote GDB server
Port number
61234
GDB Server Command Line Options
Interface
SWD
JTAG
Use specific ST-Link S/N
Scan
Serial Wire Viewer (SWV)
Enable
Clock Settings
Core Clock:
120.0
MHz
SWO Clock:
1000
kHz
Revert
Apply
Close
Debug

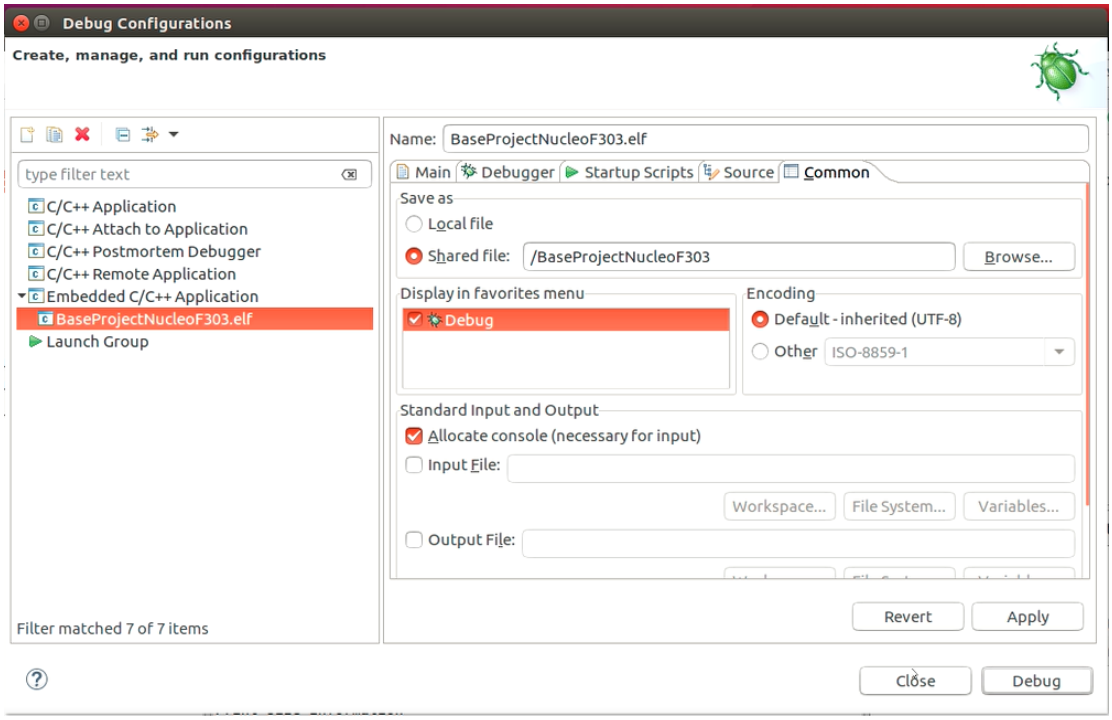
C)


Debug Configurations
Create, manage, and run configurations
type filter text
C/C++ Application
C/C++ Attach to Application
C/C++ Postmortem Debugger
C/C++ Remote Application
Embedded C/C++ Application
BaseProjectNucleoF303.elf
Launch Group
Filter matched 7 of 7 items
Name: BaseProjectNucleoF303.elf
Main
Debugger
Startup Scripts
Source
Common
Target Hardware Initialization Script
Target Software Startup Scripts
Set flash parallelism mode to 32, 16, or 8 bit when using STM32 F2/F4 microcontrollers
2=32 bit, 1=16 bit and 0=8 bit parallelism mode
monitor flash set_parallelism_mode 2
Load the program executable
load
Enable Debug connection in low power modes (DBGMCU->CR)
set *0xE0042004 = (*0xE0042004) | 0x7
Set a breakpoint at main().
tbreak main
Run to the breakpoint.
continue
Revert
Apply
Close
Debug

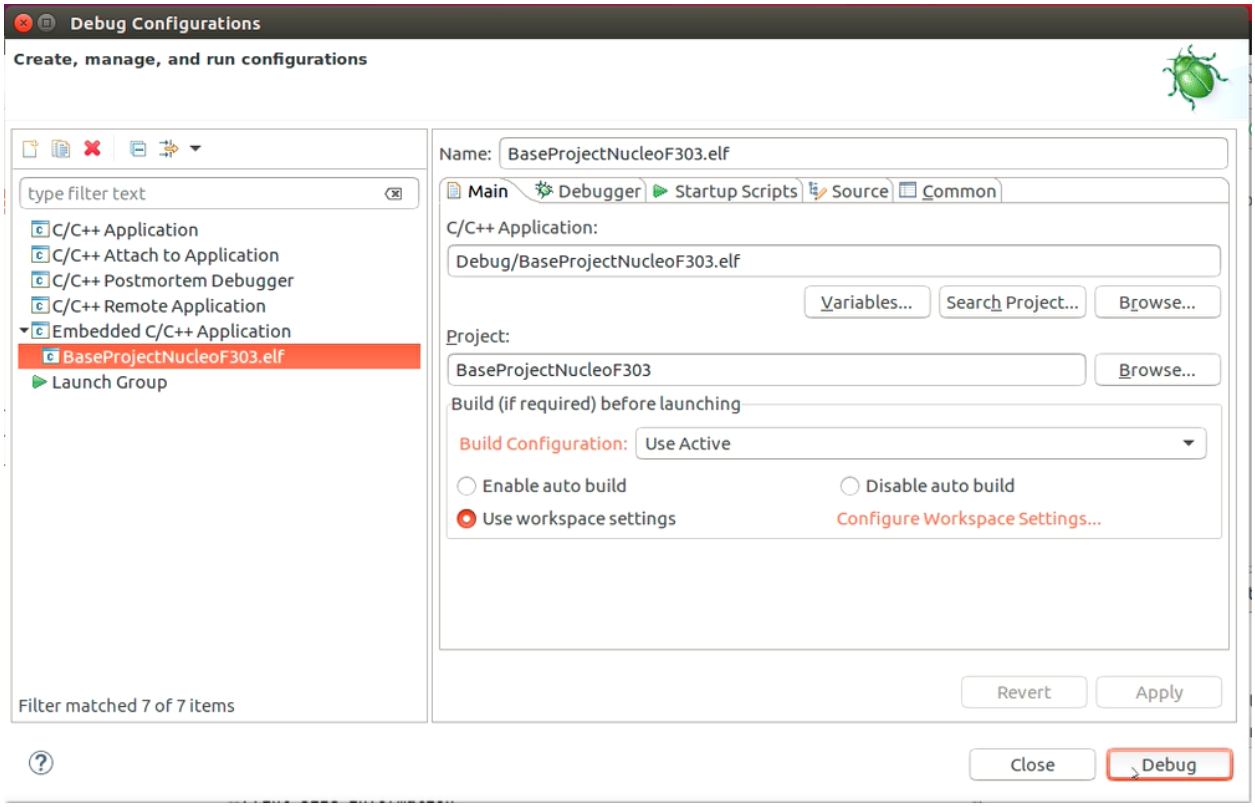
D)



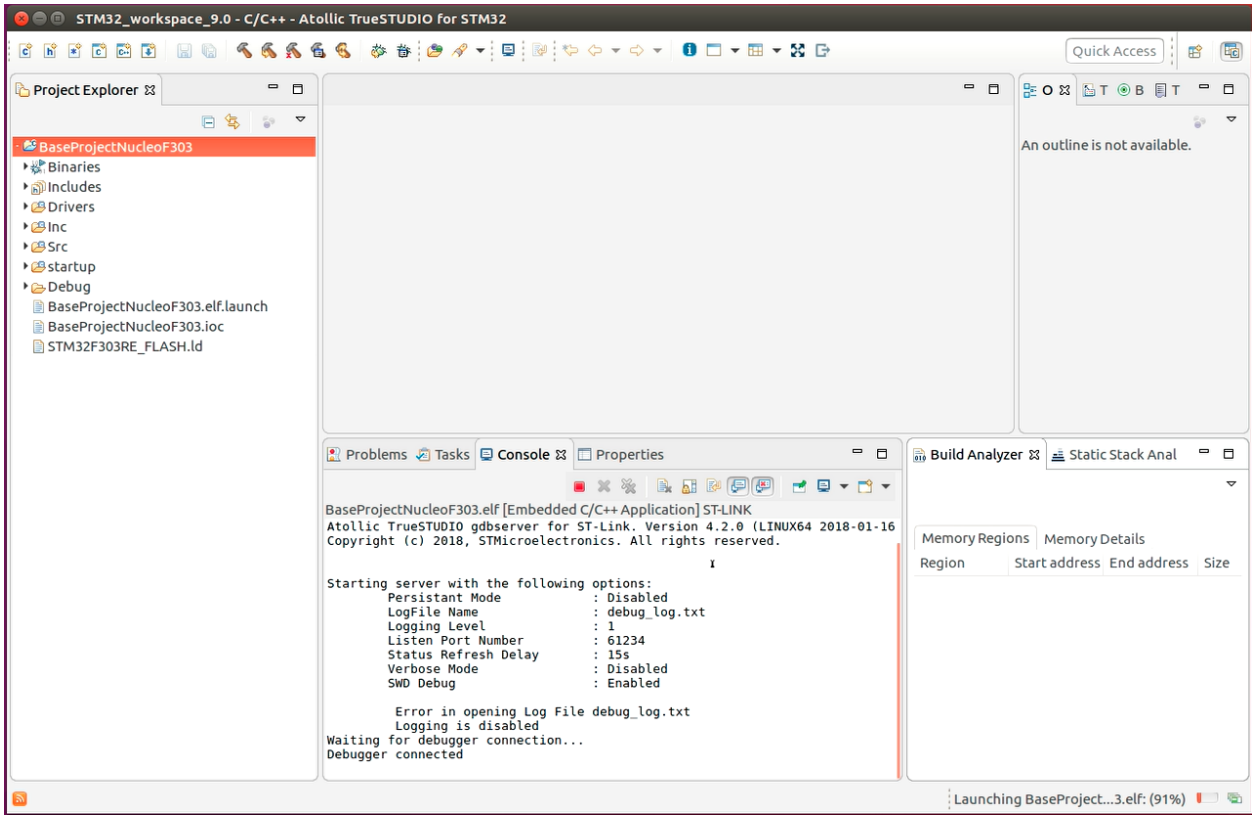
E) In the Common tab, you may select Debug in the Display in favourites menu to show the Debug icon in the TrueSTUDIO menu



19. Click on Apply and then click on Debug



20. In the console window, TrueSTUDIO should report that the Debugger is connected



21. The Debugging perspective is now shown, the code is at a breakpoint at HAL_Init() as shown below and the elf file has been loaded on the Nucleo board.