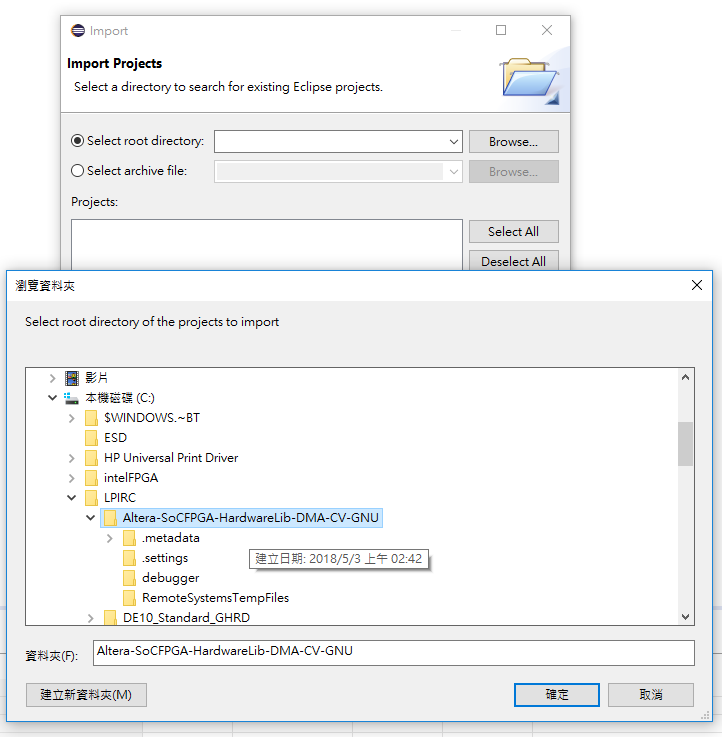
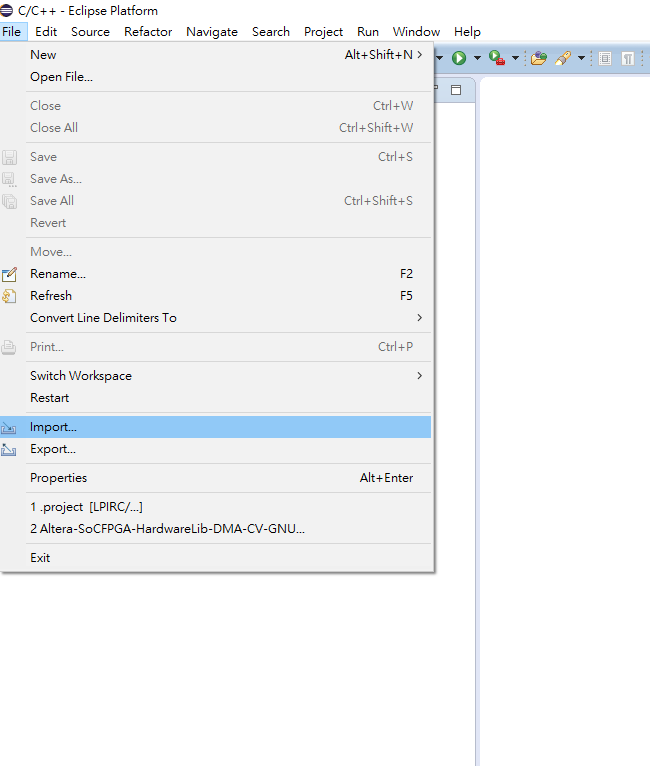
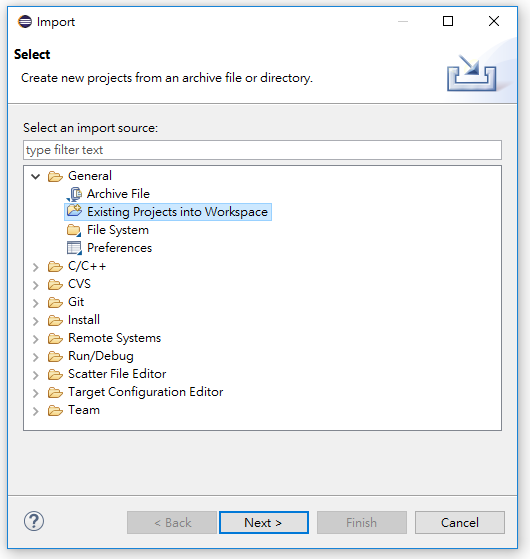
# EDS

## IDE: type eclipse & in the console for GUI

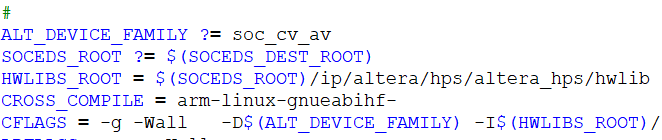
* Import existing example project



workspace should be of same directory as the project

## Drivers:

* Can’t find drivers? First look at the make file, find the file hierarchy.

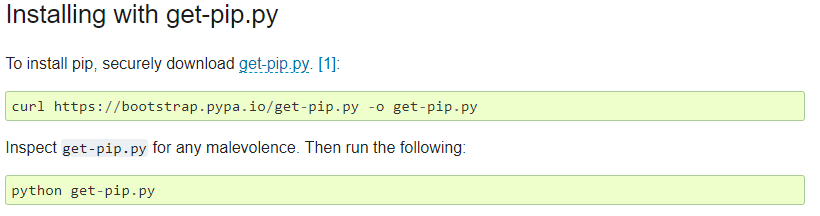


The ones under HWLIBS\_ROOT/include can be directly located.

Such as #include “alt\_dma.h”

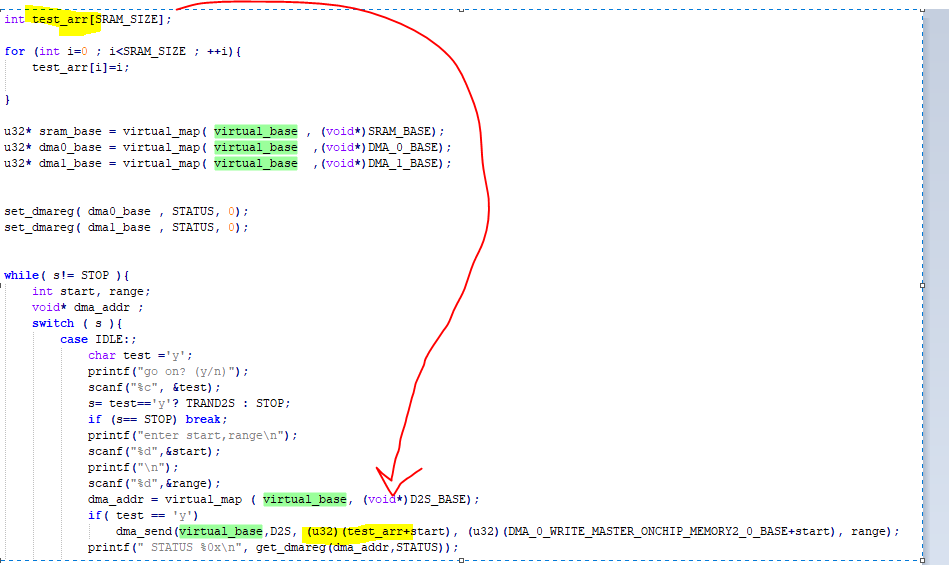
* DMA driver manuel: [https://www.altera.com/documentation/sfo1400787952932.html#iga1401397703359](https://www.altera.com/documentation/sfo1400787952932.html%23iga1401397703359)

## MISC:

* Send file onto the board via router
* 

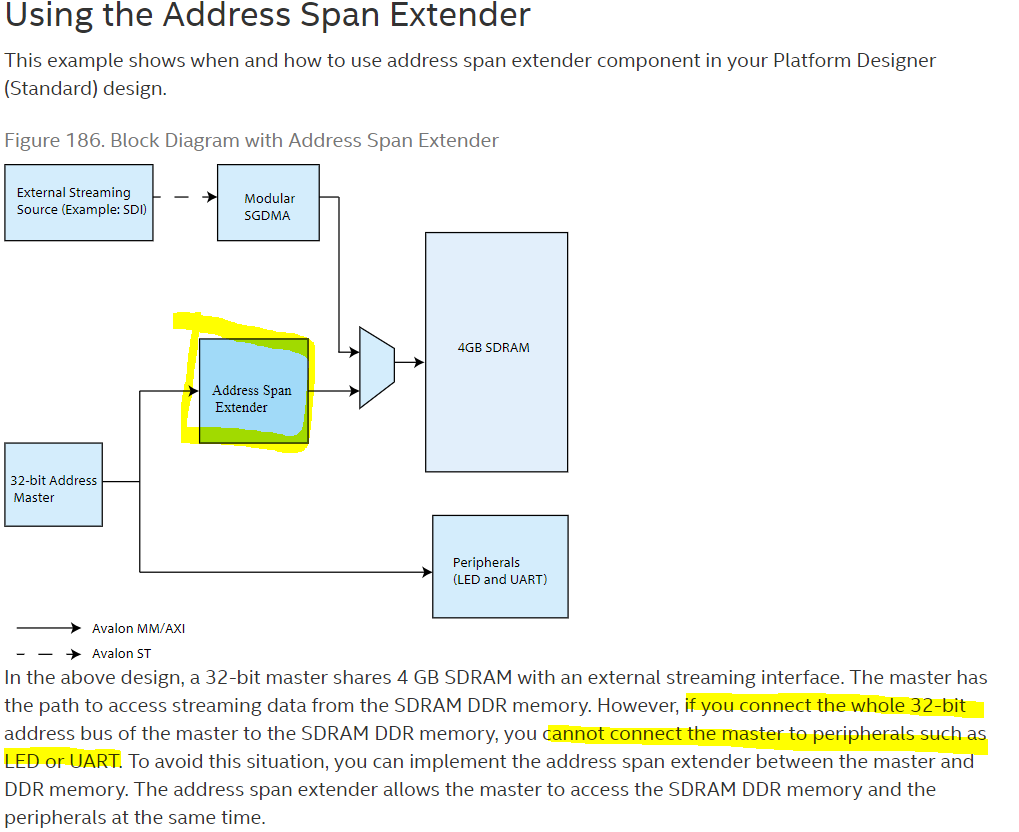
# QSYS

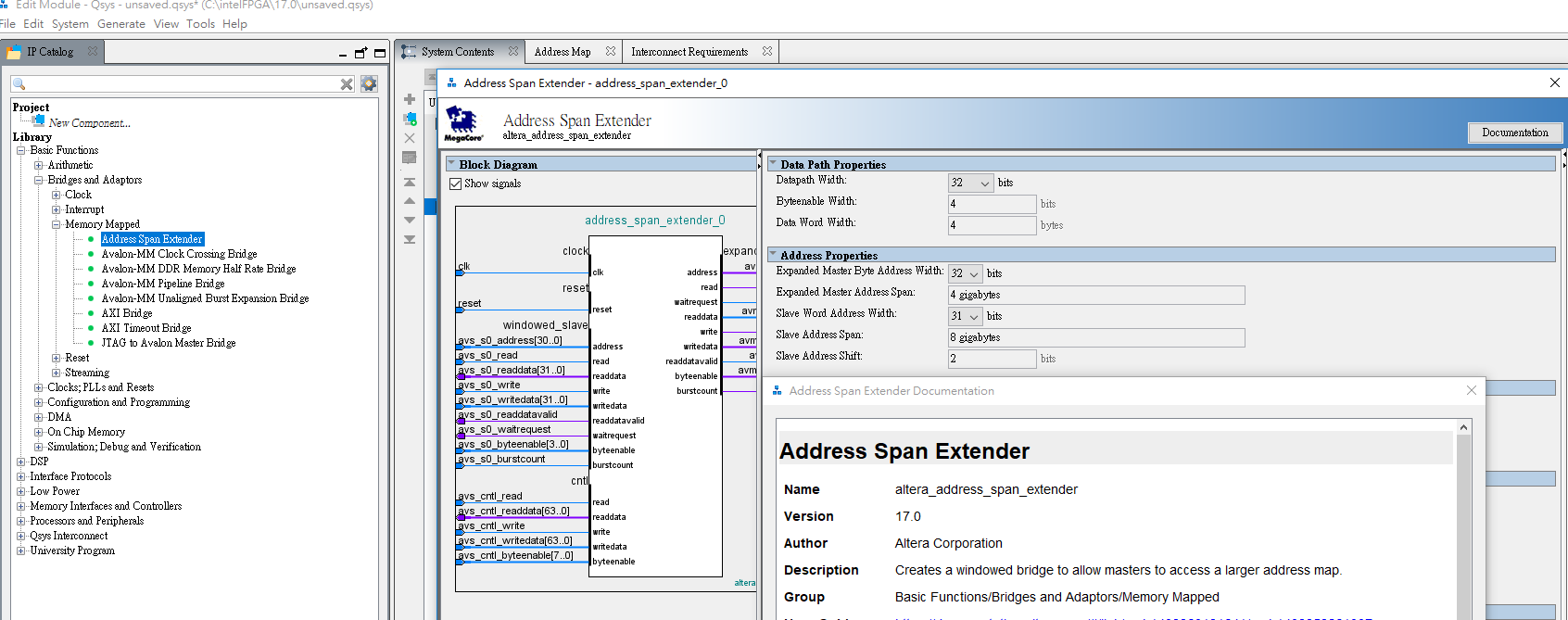
## IP address span

* IPs use physical address, so it’s not possible to pass DRAM PHYSICAL address directly, as such, dma get virtual address from CPU:  
  

Workaround:  

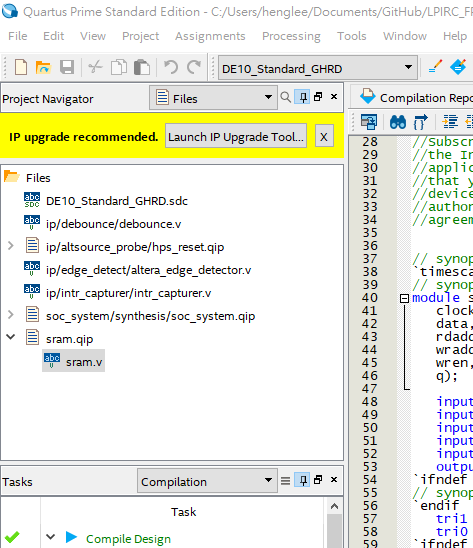
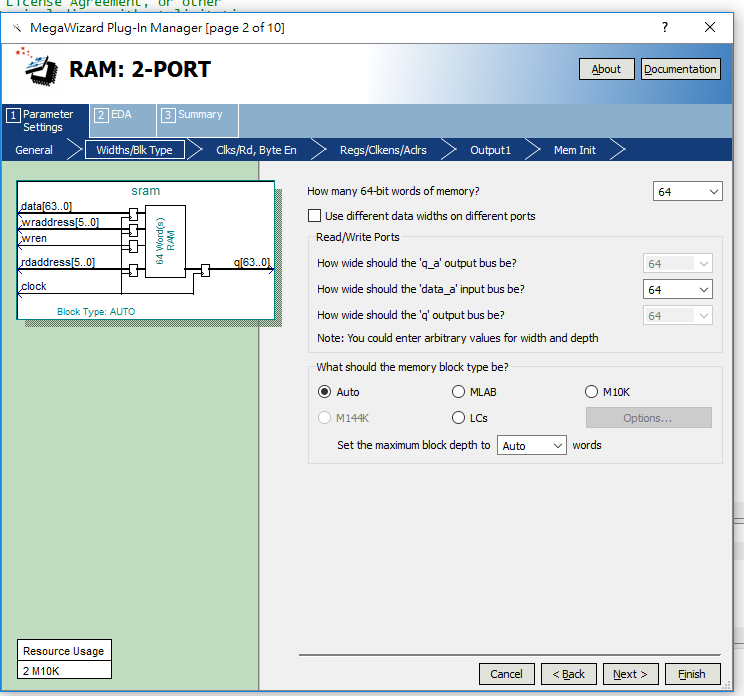
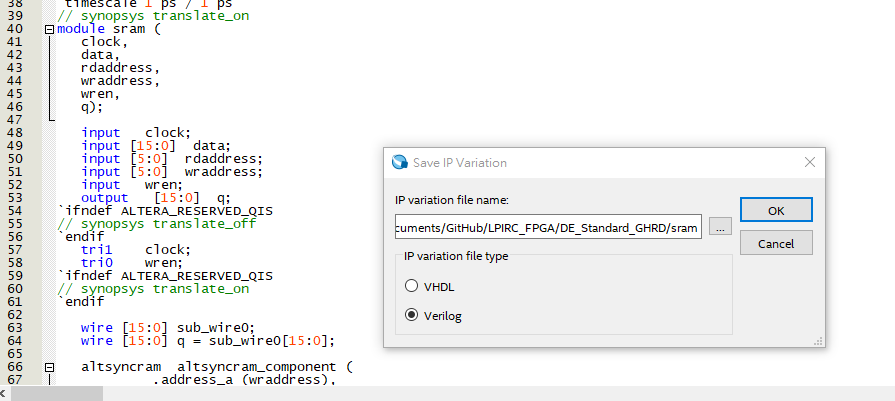
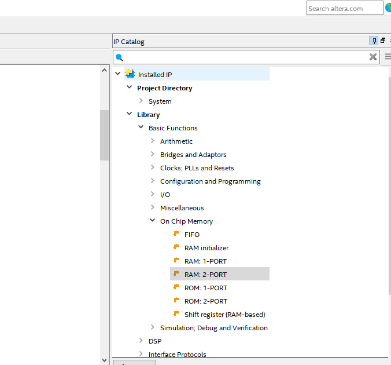

* Wrapper:





# Quartus

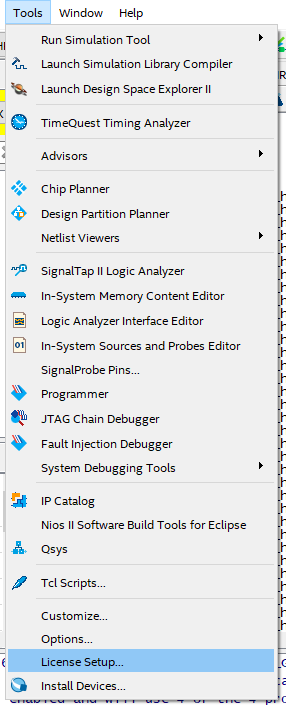
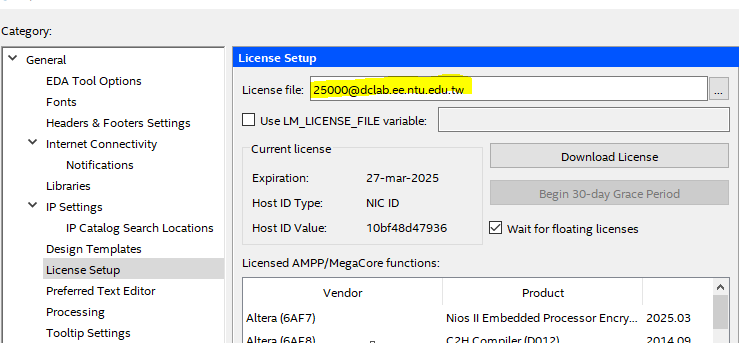
## SRAM:

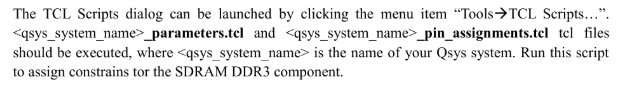


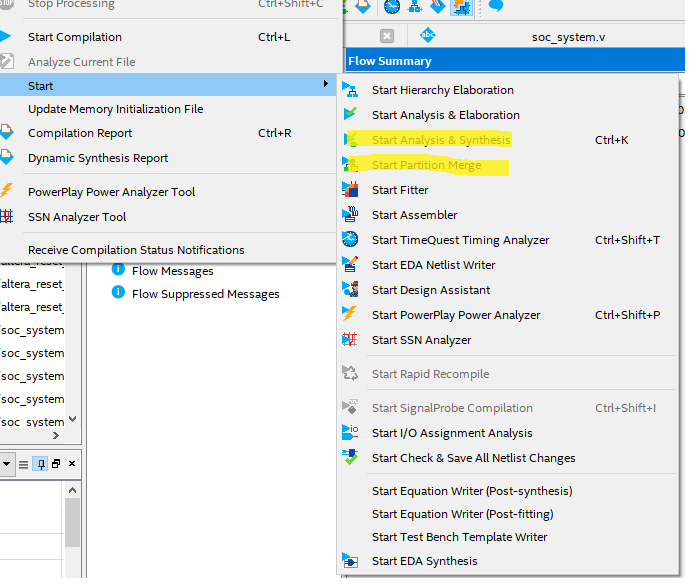
Now if you instiansiate sram module in your own design, this module can be correctly synthesize using the very IP.

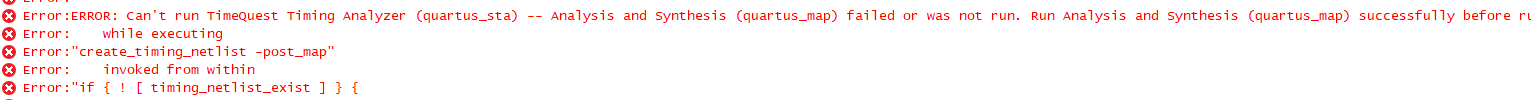
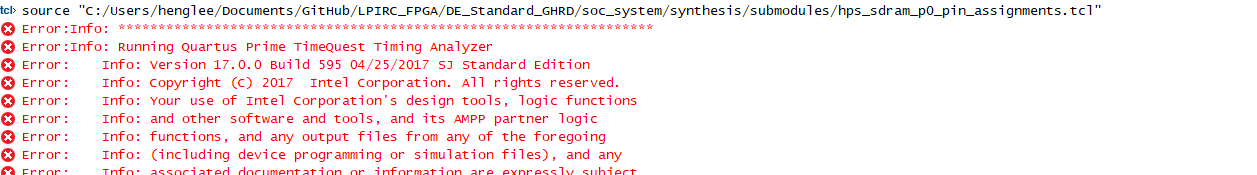
## MISC

* License is needed for generating .sof file, without it your board is useless.

* After generate HDL files using QSYS, we need to execute tcl files for SDRAM,  
    
  however, error might occurs:



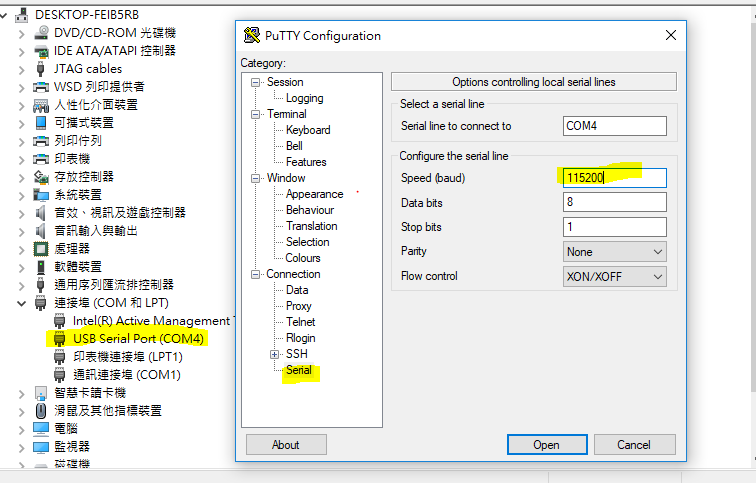


Run these 2 options then run the pin\_assignment tcl again.

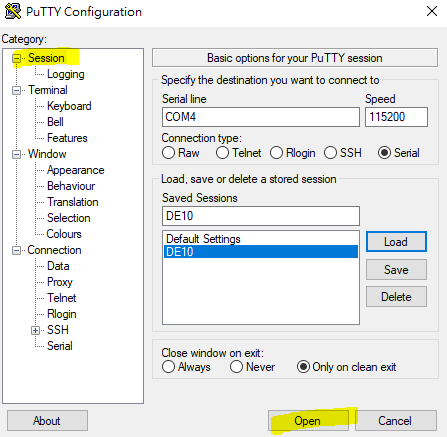
# Putty

## MISC:

* Setting: sometimes it doesn’t connect by clicking on “open” under this tab



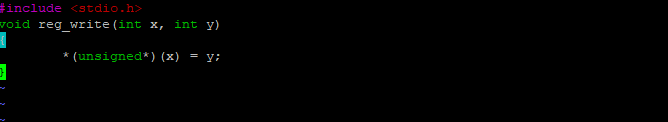
Connect: Instead, connect under Session tab.

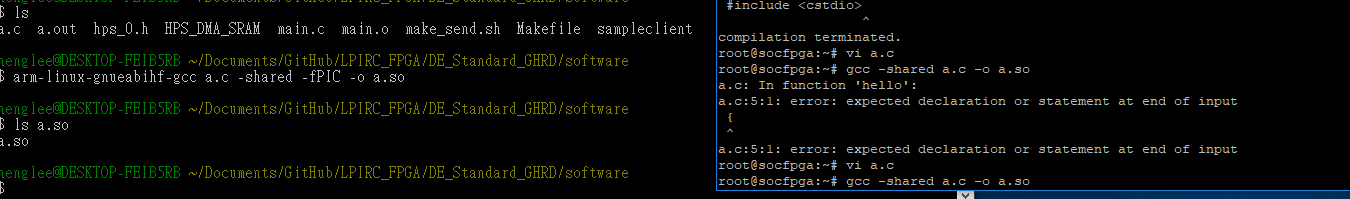


# C to python Communications:

## Example 1: c function to python

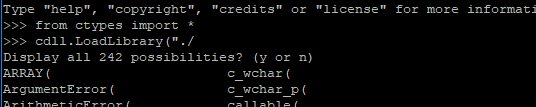
* Source file:

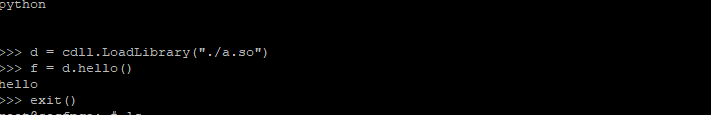


* Compile  
  

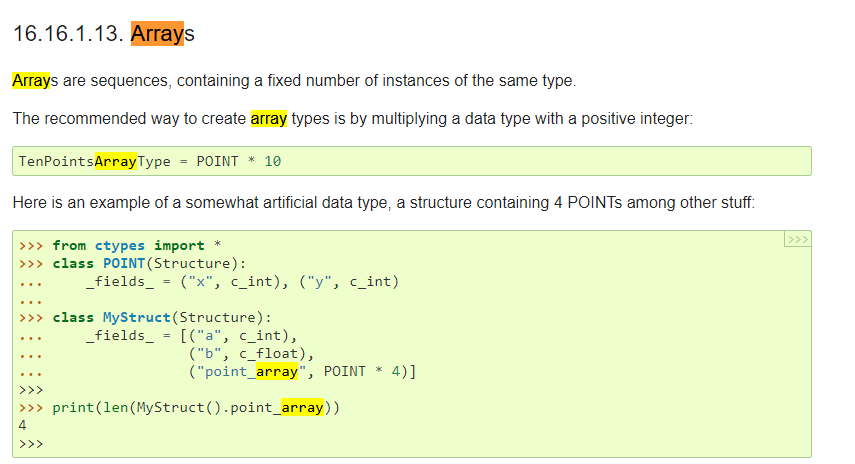
On windows, we need to specify the gcc flag, on DE10 board instead, we simply use gcc. Keypoint: -shared –o .so

* execute





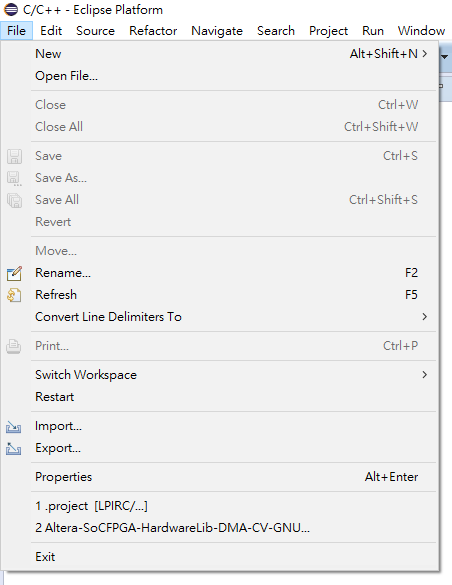
* data can be transferred, include arrays:



## Numpy object example under johnjohn’s project:

# MISC

* Use wins+Windows + Shift + S (Windows 10 only) to capture a region, images are to copied to the clipboard, especially useful when you want a image of a active tab like such:



* https://community.arm.com/cn/b/blog/posts/arm-cortex-a-gcc

## Non-cacheable memory:

## Resources:

* Intel FPGA examples: [https://www.altera.com/support/support-resources/design-examples.html#socdesignexamples](https://www.altera.com/support/support-resources/design-examples.html%23socdesignexamples)
* <http://reneeciou.blogspot.tw/2013/09/linux.html>

## Temp: