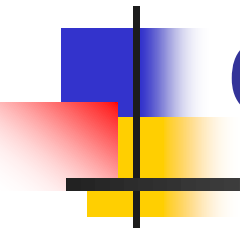
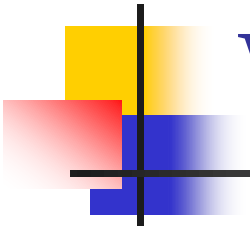


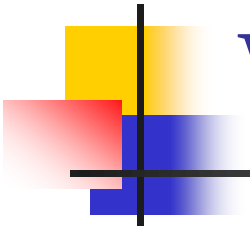
# Computer Organization Lab

Rules of the Game



# Where to get the course material

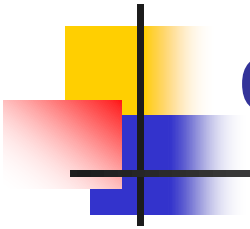
- https://github.com/CGUSystemCourses/ComputerOrg-2015.git



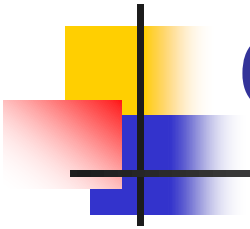
# What you will learn from this lab

- experience what I taught in the lecture
  - the real exercise of the computer organization course
- do your circuit design by yourself and verify
  - start from zero
  - You don’t have a cook-book!

# Your best friend through out this course

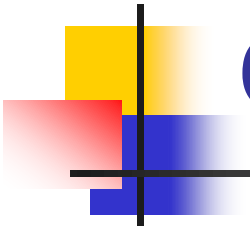


- CIC-560 FPGA board
- Quartus II (the Altera's FPGA design software)
  - download and install in your own computer
  - http://www.altera.com/products/software/quartus-ii/web-edition/qts-we-index.html



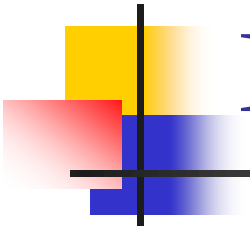
# Course Material

- my lab design documents (no textbook)
- Reference:
  - Altera documents
  - textbook and references of computer organization course
  - 林容益, FPGA數位IC電路設計應用及實驗
    - only the schematic diagram of the experiment board is useful



# Grading

- Lab demo and report: 30%
- Mid-term project: 30%
- Final project: 30%
- Pre-lab report: 10%



# Next: Lab01

- learn how to work with the experiment environment
  - FPGA board CIC560
  - QuartusII software
- we will give you a circuit design and let you realize on FPGA
  - the only circuit design I gave you through out this semester

# What you have to do after this class

- get the free software Quartus II
  - http://www.altera.com/products/software/quartus-ii/web-edition/qts-we-index.html
  - the web-edition is free
  - you can do your circuit design at home
- write your pre-lab report

# Pre-Lab report

- Q1: 開發板上的 FPGA型號 為何?
- Q2: 簡述如何使用Quartus II 畫電路圖?
- Q3: 簡述如何使用 Quatrus II 進行電路模擬並顯示波形圖(waveform)？
- Q4: 什麼是 FPGA (Field Programmable Gate Array)? 其功能與硬體架構為何?
- Q5: 當電路出錯時，你會如何 debug？