Icarus Verilog

2017/10/25

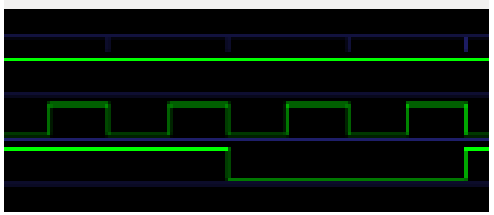
Outline

- How to download Icarus Verilog and use
- Demo

Download Icarus Verilog

- Windows
  - http://bleyer.org/icarus/
- Mac
  - brew install icarus-verilog
- Ubuntu
  - apt-get install iverilog

Download gtkwave



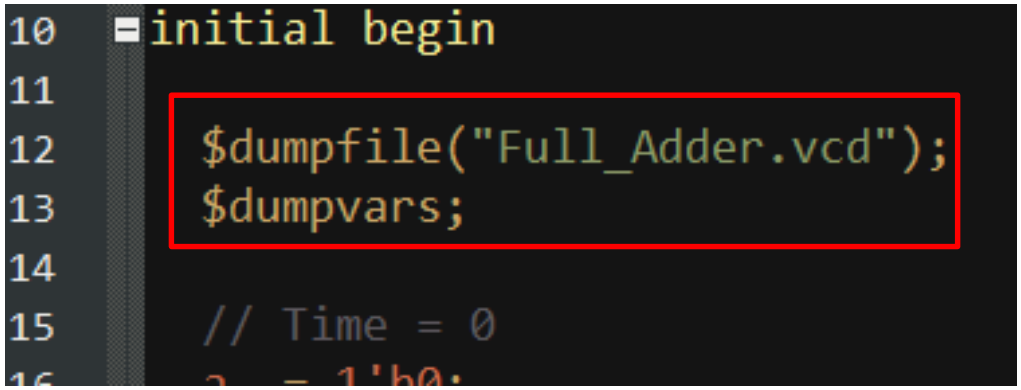
- Windows
  - Automatically installed with Icarus installation
  - C:\iverilog\gtkwave\bin\gtkwave.exe
- Mac
  - http://gtkwave.sourceforge.net/
- Ubuntu
  - sudo apt-get install gtkwave

How to use iVerilog

- Compile
  - $ iverilog -o [output_file] [source_1.v] [source_2.v] …
- Run simlation
  - $ vvp [output_file]

How to generate the waveform

- Insert two lines in the testbench.v
  - $dumpfile(“file_name.vcd”);
  - $dumpvars;



- When you using the vvp to execute the output_file, it will generate the waveform file.

Demo

Windows

- Compile
  - cd workspace

```
C:\Users\Jim>cd C:\Users\Jim\Desktop\Ex1_Full_Adder
```

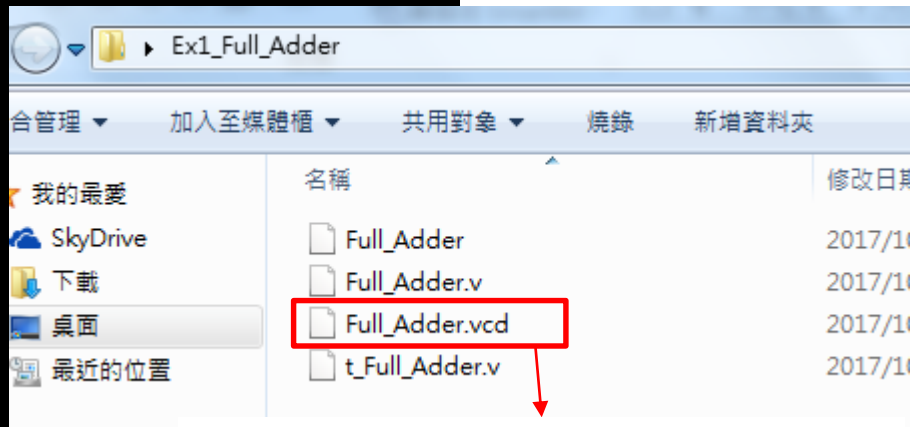
  - iverilog.exe -o [output_file] [source_1.v] [source_2.v] ..

```
C:\Users\Jim\Desktop\Ex1_Full_Adder>C:\iverilog\bin\iverilog.exe -o Full_Adder t_Full_Adder.v Full_Adder.v
```

Windows

- Execute
  - vvp.exe [output_file]

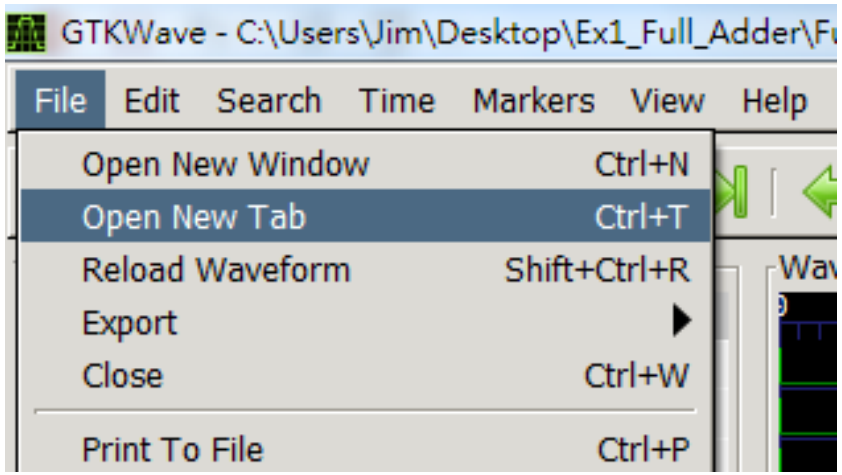
```
C:\Users\Jim\Desktop\Ex1_Full_Adder>C:\iverilog\bin\vvp.exe Full_Adder
VCD info: dumpfile Full_Adder.vcd opened for output.
Time        0 ns, a=0 b=0 ci=0 sum=0 cout=0
Time       50 ns, a=1 b=0 ci=0 sum=1 cout=0
Time      100 ns, a=0 b=1 ci=0 sum=1 cout=0
Time      150 ns, a=1 b=1 ci=0 sum=0 cout=1
Time      200 ns, a=0 b=0 ci=1 sum=1 cout=0
Time      250 ns, a=1 b=0 ci=1 sum=0 cout=1
Time      300 ns, a=0 b=1 ci=1 sum=0 cout=1
Time      350 ns, a=1 b=1 ci=1 sum=1 cout=1
Time      400 ns, a=0 b=0 ci=0 sum=0 cout=0
Time      450 ns, a=1 b=0 ci=0 sum=1 cout=0
Time      500 ns, a=0 b=1 ci=0 sum=1 cout=0
Time      550 ns, a=1 b=1 ci=0 sum=0 cout=1
Time      600 ns, a=0 b=0 ci=1 sum=1 cout=0
Time      650 ns, a=1 b=0 ci=1 sum=0 cout=1
Time      700 ns, a=0 b=1 ci=1 sum=0 cout=1
Time      750 ns, a=1 b=1 ci=1 sum=1 cout=1
Time      800 ns, a=0 b=0 ci=0 sum=0 cout=0
Time      850 ns, a=1 b=0 ci=0 sum=1 cout=0
Time      900 ns, a=0 b=1 ci=0 sum=1 cout=0
Time      950 ns, a=1 b=1 ci=0 sum=0 cout=1
Time     1000 ns, a=0 b=0 ci=1 sum=1 cout=0
```



The waveform file was brought out

Windows

- See the waveform
  - Execute the gtkwave.exe
    - C:\iverilog\gtkwave\bin\gtkwave.exe
  - File -> Open New Tab
    - Select the .vcd file which you want to see



gtkwave

- Move the wires to the signals area