EE6094
CAD for VLSI Design

Compiler and Checker

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Outline

- Compiler
- Checker

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Compiler

- How to compile and execute your source code on workstation?
  - Step1: Use g++ command.

```
[ta110521028@eda359_forclass ~]$ g++ -std=c++11 StudentID_PA1.cpp -o test
```

  - Step2: Execute your output file.

```
[ta110521028@eda359_forclass ~]$ ./test c17.v c17.bench
                                      Input file  Output file
```

Compiler

- Use argc and argv as input arguments on the command line.
- More detailed information can refer to the following websites.
  - https://learn.microsoft.com/zh-tw/cpp/cpp/main-function-command-line-args?view=msvc-170
  - https://blog.gtwang.org/programming/c-cpp-tutorial-argc-argv-read-command-line-arguments/

Outline

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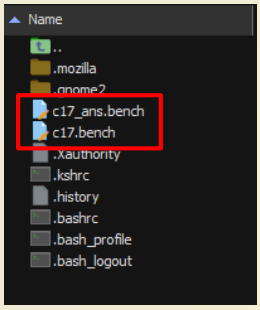
Checker

- How to check the output file that dumped by your c++ code is correct?
  - We need to use **Combinational Equivalence Checking (CEC)** which is one of the useful functions of ABC.

Checker

- How to use ABC?
  - Step1: Make sure you put your output file (.bench) and the bench file we provided in the same folder.



Checker

- How to use ABC?
  - Step2: Key in the following command to enter ABC mode.
    /home/CAD1112/abc-master/abc

```
[ta110521028@eda359_forclass ~]$ /home/CAD112/abc-master/abc
UC Berkeley, ABC 1.01 (compiled Feb 13 2023 14:43:25)
abc 01>
```

  - Key "quit" can leave ABC mode.

```
abc 01> quit
[ta110521028@eda359_forclass ~]$
```


Checker

- How to use ABC?
  - Step3: Key in the following command.
    cec c17.bench c17_ans.bench
  - If the bench file you generated is correct, it will show the "equivalence" message.

```
abc 01> cec c17.bench c17_ans.bench
Networks are equivalent after structural hashing.  Time =     0.00 sec
```

  - If the bench file you generated is wrong, it will show the "Not equivalence" message.

```
abc 01> cec c17.bench c17_ans.bench
Warning: Constant-0 drivers added to 1 non-driven nets in network "c17":
18
Networks are NOT EQUIVALENT   Time =     0.00 sec
```