



## EE6094 CAD for VLSI Design



# Checker and Makefile

Andy, Yu-Guang Chen  
Assistant Professor, Department of EE  
National Central University  
andyygchen@ee.ncu.edu.tw  
Slides Credit: TA黃柏燁



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## Outline



- ◆ Checker
- ◆ Makefile



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# Outline

◆ Checker

◆ Makefile



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# Checker

◆ How to use the checker?

- Step1: Make sure you put your checker, case and your output file case.out at the same folder.

Name	Size (KB)
...	
src	
results	
cases	
build	
.vscode	
.git	
PA3_CHECKER	104
Makefile	1
case0.out	1
case0	1
.gitignore	1

- Step2: Key in the following commands.

```
./PA3_CHECKER case case.out
```



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# Checker



## ◆ How to use the checker?

- Step2: Key in the following commands.

`./PA3_CHECKER case case.out`

```
[109521018@eda359_forclass ~/2022_pa3_testcase]$ ./PA3_CHECKER case0 case0.out
```

- Step3: If you get the error, key in the following commands.

`chmod 700 PA3_CHECKER`

```
[109521018@eda359_forclass ~/2022_pa3_testcase]$ ./PA3_CHECKER
./PA3_CHECKER: Permission denied
[109521018@eda359_forclass ~/2022_pa3_testcase]$ chmod 700 PA3_CHECKER
```



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# Checker



## ◆ How to use the checker?

- Step4: Retry the step2.

`./PA3_CHECKER case case.out`

```
[109521018@eda359_forclass ~/2022_pa3_testcase]$ ./PA3_CHECKER case0 case0.out
```



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# Checker



- ◆ However, there are some errors which will cause your result illegal.
- ◆ We will give you some examples in following slides.



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# Checker



- ◆ Example 1
  - If your result's cut size does not match your partition result, your error count is 1 and you will get the “**cut size mismatch**” message.

```
cut_size 2
A
c1
c3
c7
c5
B
c2
c4
c8
c6
case.out
```

```
[109521018@eda359_forclass ~/2022_PA3_CHECKER]$ ./PA3_CHECKER case0 case0.out
error count: 1
1. cut size mismatch
[109521018@eda359_forclass ~/2022_PA3_CHECKER]$
```

result



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# Checker



## ◆ Example 2

- If your partition result does not meet the constraint of  $|size(A) - size(B)| < total\_module\_size/5$ , which means your result is unbalance. Your error count is 1 and you will get the “**unbalance partition**” message.

```
cut_size 2
A
c1
c5
B
c2
c4
c8
c6
c7
c3
```

case.out

```
size(A): 2
size(B): 6
total_module_size: 8
|2-6| > 8/5 = 1.6
```

result

```
[109521018@eda359_forclass ~/2022_PA3_CHECKER]$ ./PA3_CHECKER case0 case0.out
error count: 1
1. unbalance partition
[109521018@eda359_forclass ~/2022_PA3_CHECKER]$
```



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# Checker



## ◆ Example 3

- If there are some modules disappeared in your partition result, your error count is 2 and you will get both “**module disappear in partition result**” and “**cut size mismatch**” messages.

```
cut_size 1
A
c1
c5
c7
B
c2
c4
c8
c6
```

case.out

c3 is disappear

result

```
[109521018@eda359_forclass ~/2022_PA3_CHECKER]$ ./PA3_CHECKER case0 case0.out
error count: 2
1. cut size mismatch
2. module disappear in partition result
[109521018@eda359_forclass ~/2022_PA3_CHECKER]$
```



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# Checker

## ◆ Example 4

- If there are some redundant modules existed in your partition result, your error count is 1 and you will get **“redundant module in partition result”** messages.

```
cut_size 1
```

```
A
```

```
c1
```

```
c3
```

```
c5
```

```
c7
```

```
B
```

```
c2
```

```
c4
```

```
c8
```

```
c6
```

```
c9
```

case.out

c9 is a redundant module

result

```
[109521018@eda359_forclass ~/2022_PA3_CHECKER]$ ./PA3_CHECKER case0 case0.out
error count: 1
1. redundant module in partition result
[109521018@eda359_forclass ~/2022_PA3_CHECKER]$
```



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# Outline

◆ Checker

◆ Makefile



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# Makefile



◆ In demo session, TA will test your makefile in the following commands.

- make all
- make run INPUT=case OUTPUT=case.out
- make clean

```
[109521018@eda359_forclass ~/PA3]$ make all
Creating object directory
Compiling: PA3_109521018.cpp -> build/PA3_109521018.o
Compiling: linkedlist.cpp -> build/linkedList.o
Generating executable file: build/PA3_109521018.o build/linkedList.o -> go
[109521018@eda359_forclass ~/PA3]$ make run INPUT=case0 OUTPUT=case0.out
./go case0 case0.out
[109521018@eda359_forclass ~/PA3]$ make clean
Removing objects
Removing executable file
[109521018@eda359_forclass ~/PA3]$
```



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