EE6094
CAD for VLSI Design

Checker

Andy, Yu-Guang Chen
Assistant Professor, Department of EE
National Central University
andyygchen@ee.ncu.edu.tw

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Checker

◆ What is the checker?
  ➢ Help you to check whether your solution is correct.
◆ Checker for PA4
  ➢ Chip
  ➢ INL
  ➢ Blocks

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◆How to use the checker?

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

▼ Name	Size (KB)
↰ ..	
case1.block	1
case1.out	1
PA4_checker	95

➢Step2: Key in the following commands to run the checker.

./PA4_checker case.block case.out

```
[ta113521030@ncuee ~/PA4]$ ./PA4_checker case1.block case1.out
```

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◆If you get the **Permission denied** error, key in the following commands and try step2 again.

chmod +x PA4_checker

```
[ta113521030@ncuee ~/PA4_test]$ ./PA4_checker case1.block case1.out
./PA4_checker: Permission denied.
[ta113521030@ncuee ~/PA4_test]$ chmod 700 PA4_checker
[ta113521030@ncuee ~/PA4_test]$ ./PA4_checker case1.block case1.out
All checks passed.
```

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◆ Example

➢ If your floorplan result is legal. Your will get the "All checks passed." message.

```
2061.9880
37.22 55.40
226.21
MM0 0.00 0.00 (9.11 5.54 8 1)
MM1 9.11 0.00 (9.11 5.54 8 1)
MM2 18.22 0.00 (1.90 4.74 1 1)
MM3 20.12 0.00 (1.90 4.74 1 1)
MM4 22.02 0.00 (1.90 18.96 1 4)
MM5 23.92 0.00 (1.90 18.96 1 4)
MM6 25.82 0.00 (1.90 8.48 1 2)
MM7 27.72 0.00 (1.90 8.48 1 2)
MM8 29.62 0.00 (1.90 8.48 1 2)
MM9 31.52 0.00 (1.90 8.48 1 2)
MM10 33.42 0.00 (1.90 55.40 1 10)
MM11 35.32 0.00 (1.90 11.08 1 2)
```
Case1.out

```
All checks passed.
Cost : 2061.99
INL : 226.21
```
result

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◆ However, there are some errors which will cause your result illegal.

◆ We will give you some examples in following slides.

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◆ Example 1

➤ If your result's chip area does not match your floorplan result, you will get the "**Chip area mismatch**" message.

```
2061
37.22 55.40
226.21
MM0 0.00 0.00 (9.11 5.54 8 1)
MM1 9.11 0.00 (9.11 5.54 8 1)
MM2 18.22 0.00 (1.90 4.74 1 1)
MM3 20.12 0.00 (1.90 4.74 1 1)
MM4 22.02 0.00 (1.90 18.96 1 4)
MM5 23.92 0.00 (1.90 18.96 1 4)
MM6 25.82 0.00 (1.90 8.48 1 2)
MM7 27.72 0.00 (1.90 8.48 1 2)
MM8 29.62 0.00 (1.90 8.48 1 2)
MM9 31.52 0.00 (1.90 8.48 1 2)
MM10 33.42 0.00 (1.90 55.40 1 10)
MM11 35.32 0.00 (1.90 11.08 1 2)
```

Error: Chip area mismatch. Calculated: 2061.99, Reported: 2061

case1.out   result

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◆ Example 2

➤ If your result's chip does not match your floorplan result, you will get the "**Chip dimensions mismatch**" message.

```
2061.9980
37.22 5.40
226.21
MM0 0.00 0.00 (9.11 5.54 8 1)
MM1 9.11 0.00 (9.11 5.54 8 1)
MM2 18.22 0.00 (1.90 4.74 1 1)
MM3 20.12 0.00 (1.90 4.74 1 1)
MM4 22.02 0.00 (1.90 18.96 1 4)
MM5 23.92 0.00 (1.90 18.96 1 4)
MM6 25.82 0.00 (1.90 8.48 1 2)
MM7 27.72 0.00 (1.90 8.48 1 2)
MM8 29.62 0.00 (1.90 8.48 1 2)
MM9 31.52 0.00 (1.90 8.48 1 2)
MM10 33.42 0.00 (1.90 55.40 1 10)
MM11 35.32 0.00 (1.90 11.08 1 2)
```

Error: Chip dimensions mismatch. Calculated: 37.22x55.4, Reported: 37.22x5.4

case1.out   result

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◆Example 3

➢ If your result's chip does not match your floorplan result, you will get the "**Chip dimensions mismatch**" message.

```
2061.9880
37.22 55.40
200.21
MM0 0.00 0.00 (9.11 5.54 8 1)
MM1 9.11 0.00 (9.11 5.54 8 1)
MM2 18.22 0.00 (1.90 4.74 1 1)
MM3 20.12 0.00 (1.90 4.74 1 1)
MM4 22.02 0.00 (1.90 18.96 1 4)
MM5 23.92 0.00 (1.90 18.96 1 4)
MM6 25.82 0.00 (1.90 8.48 1 2)
MM7 27.72 0.00 (1.90 8.48 1 2)
MM8 29.62 0.00 (1.90 8.48 1 2)
MM9 31.52 0.00 (1.90 8.48 1 2)
MM10 33.42 0.00 (1.90 55.40 1 10)
MM11 35.32 0.00 (1.90 11.08 1 2)
```

`Error: Chip dimensions mismatch. Calculated: 37.22x55.4, Reported: 37.22x5.4`

case1.out   result

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◆Example 4

➢ If your result's INL does not match your floorplan result, you will get the "**INL mismatch**" message.

```
2061.9880
37.22 55.40
226.21
MM0 0.00 0.00 (9.11 5.54 8 1)
MM1 9.11 0.00 (9.11 5.54 8 1)
MM2 18.22 0.00 (1.90 4.74 1 1)
MM3 20.12 0.00 (1.90 4.74 1 1)
MM4 22.02 0.00 (1.90 18.96 1 4)
MM5 23.92 0.00 (1.90 18.96 1 4)
MM6 25.82 0.00 (1.90 8.48 1 2)
MM7 27.72 0.00 (1.90 8.48 1 2)
MM8 29.62 0.00 (1.90 8.48 1 2)
MM9 31.52 0.00 (1.90 8.48 1 2)
MM10 33.42 0.00 (1.90 55.40 1 10)
MM11 35.32 0.00 (1.90 11.08 1 2)
```

`Error: INL mismatch. Calculated: 226.211, Reported: 200.21`

case1.out   result

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◆Example 5

> If your result's block location is illegal, you will get the "**Overlap**" message.

```
2061.9880
37.22 55.40
226 21
MM0 1.00 0.00 (9.11 5.54 8 1)
MM1 9.11 0.00 (9.11 5.54 8 1)
MM2 18.22 0.00 (1.90 4.74 1 1)
MM3 20.12 0.00 (1.90 4.74 1 1)
MM4 22.02 0.00 (1.90 18.96 1 4)
MM5 23.92 0.00 (1.90 18.96 1 4)
MM6 25.82 0.00 (1.90 8.48 1 2)
MM7 27.72 0.00 (1.90 8.48 1 2)
MM8 29.62 0.00 (1.90 8.48 1 2)
MM9 31.52 0.00 (1.90 8.48 1 2)
MM10 33.42 0.00 (1.90 55.40 1 10)
MM11 35.32 0.00 (1.90 11.08 1 2)
```

```
Error: Overlap between MM0 and MM1
```

case1.out   result

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