

Homework 3

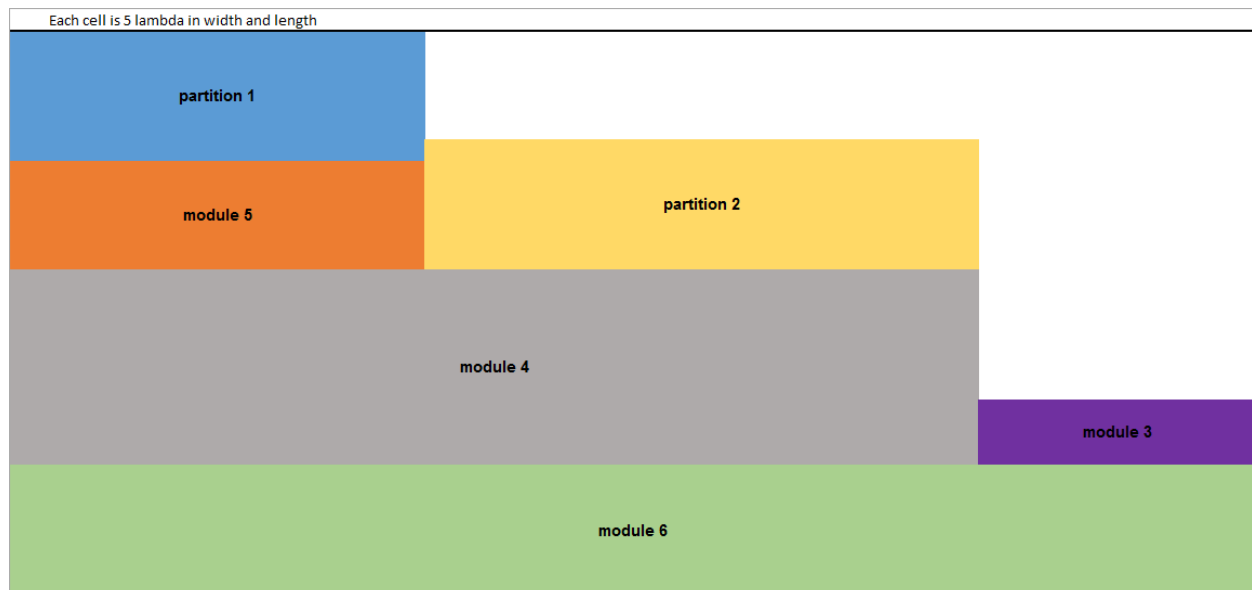
1)

Partition 1 ($30 \times 26.4 \Rightarrow 30 \times 30$):

- 3 input AND = 30×19.2
- Inverter = 30×7.2

Partition 2 ($30 \times 38.4 \Rightarrow 30 \times 40$):

- 3 input XOR = 30×31.2 {XOR2 cell size, No XOR3 in standard cell library}
- Inverter = 30×7.2



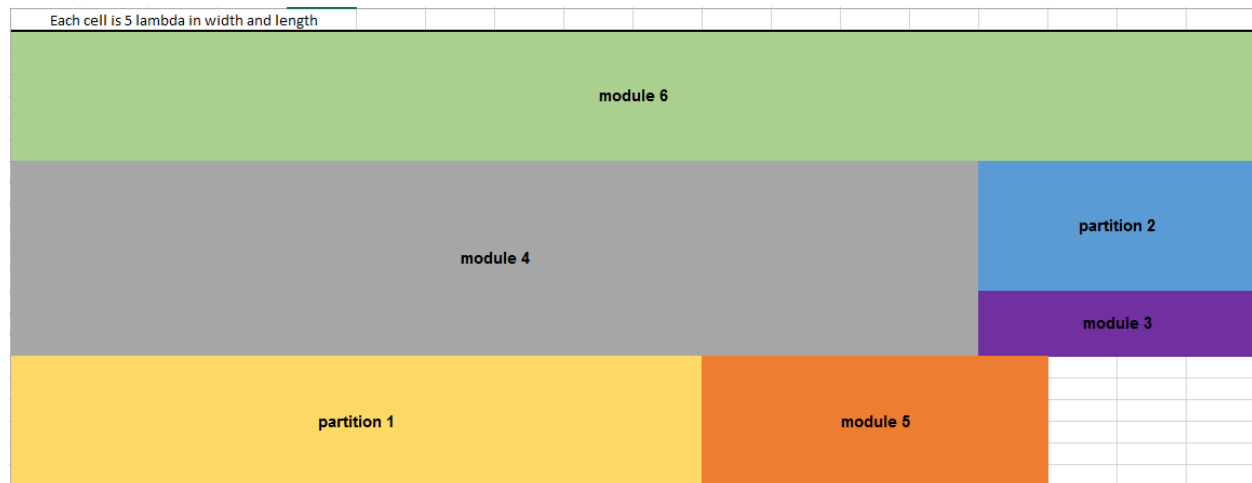
2)

Partition 1 ($30 \times 47.1 \Rightarrow 30 \times 50$):

- 2 input XOR = 30 x 31.2
- 2 input OR = 30 x 15.9

Partition 2 ($30 \times 16.8 \Rightarrow 30 \times 20$):

- 2 input NAND = 30×9.6
- Inverter = 30×7.2



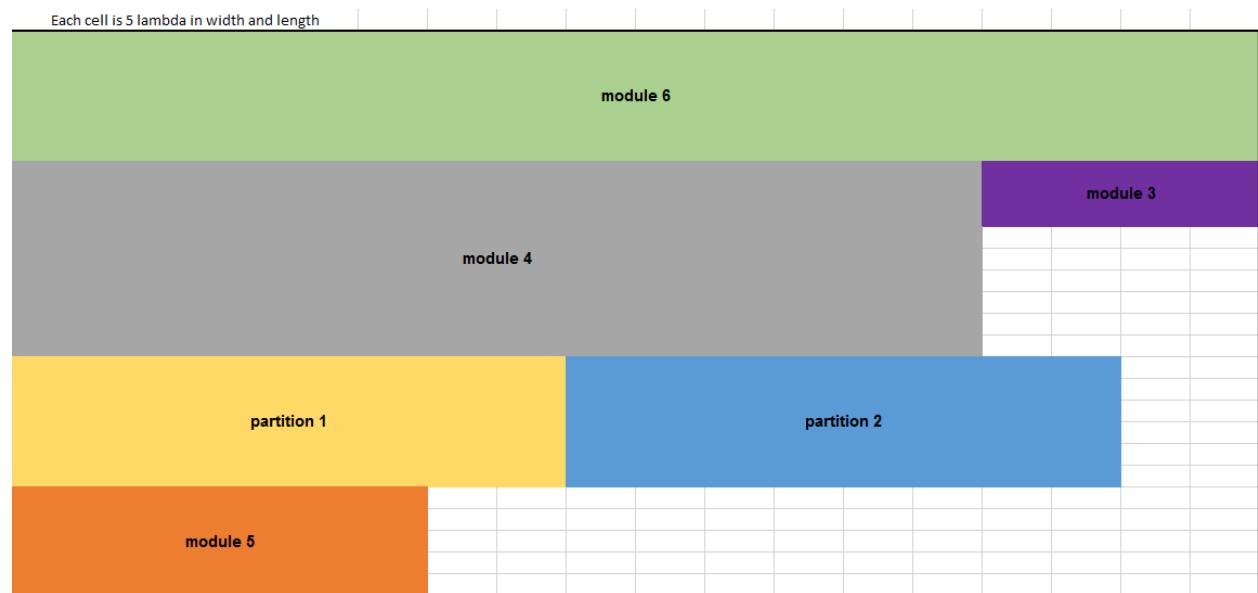
3)

Partition 1 (30 x 37.5 => 30 x 40):

- 2 input NAND = 30 x 9.6
- 2 input NAND = 30 x 9.6
- 2 input NOR = 30 x 8.7
- 2 input NAND = 30 x 9.6

Partition 2 (30 x 37.5 => 30 x 40):

- 2 input NAND = 30 x 9.6
- 2 input NAND = 30 x 9.6
- 2 input NOR = 30 x 8.7
- 2 input NAND = 30 x 9.6



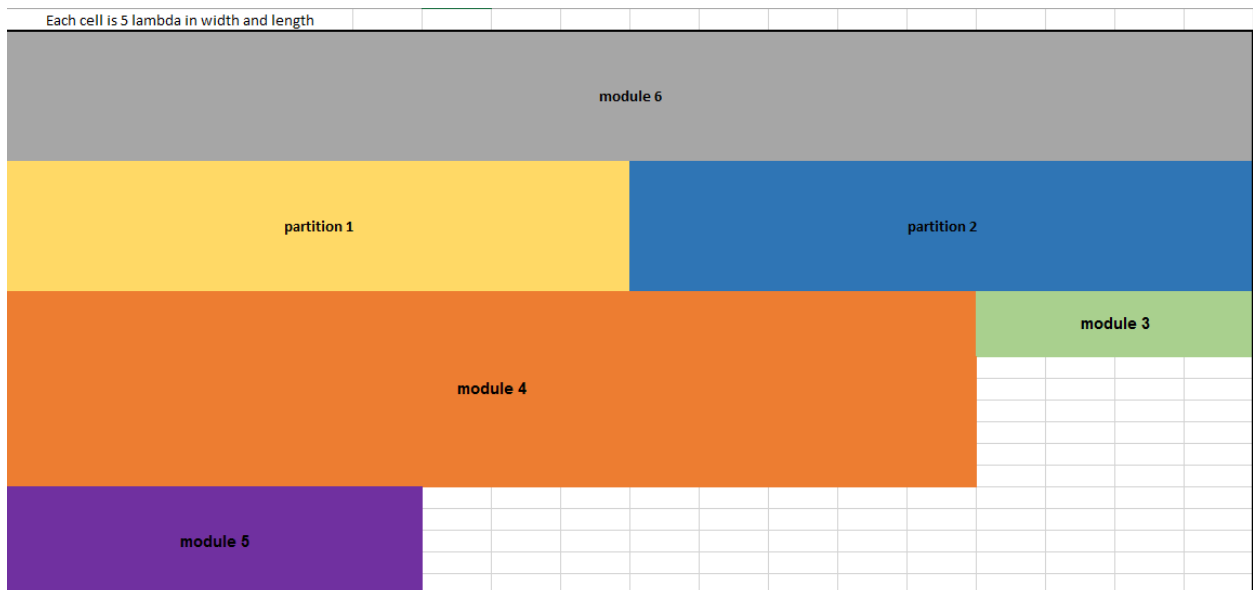
4)

Partition 1 (30 x 48 => 30 x 50):

- Inverter = 30 x 7.2
- Inverter = 30 x 7.2
- 2 input NAND = 30 x 9.6
- 2 input NAND = 30 x 9.6
- Inverter = 30 x 7.2
- Inverter = 30 x 7.2

Partition 2 (30 x 42.3 => 30 x 45):

- Inverter = 30 x 7.2
- 2 input NAND = 30 x 9.6
- 2 input NOR = 30 x 8.7
- 2 input NAND = 30 x 9.6
- Inverter = 30 x 7.2



5)

Partition 1 ($30 \times 73.5 \Rightarrow 30 \times 75$):

- Inverter = 30×7.2
- Inverter = 30×7.2
- Inverter = 30×7.2
- Inverter = 30×7.2
- Inverter = 30×7.2
- 2 input NAND = 30×9.6
- 2 input NAND = 30×9.6
- 2 input NAND = 30×9.6
- 2 input NOR = 30×8.7

Partition 2 ($30 \times 213.6 \Rightarrow 30 \times 215$):

- DFF = 30×72
- TFF = 30×88.8
- BUFFER = 30×12
- Inverter = 30×7.2
- Inverter = 30×7.2
- 2 input AND = 30×16.8
- 2 input NAND = 30×9.6

Each cell is 5 lambda in width and length

