2024 Digital IC Design Homework 5

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| NAME | 李尚宸 | | | |
| Student ID | P76124265 | | | |
| Score = area\*timing (ps) | Score = 45356 \* 925000 = 41,954,300,000  (Area = 45356 + 0 + 0 = 45356  Timing = 925000 ps) | | | |
| Cycle time (ns) | 8 ns | | | |
| **Simulation Result** | | | | |
| Functional simulation | | Completed | Gate-level simulation | Completed |
| (your functional sim result) | | | (your gate-level sim result) | |
| **Description of your design** | | | | |
| AES.v: 循序電路，在每個 posedge，將 statesTemp 和 fullkeysTemp 的值分別assign 給 states 和fullkeys  Others.v: 組合電路，實現 AES 需要的 modules，當states 和fullkeys  的值更新後，modules會計算下一輪的 key 和 state，最後將計算結果分別assign 給 statesTemp和fullkeysTemp | | | | |

The scoring standard: (The smaller, the better)

*Scoring =*

*Area cost \* Timing cost*

*Area cost =*

*Total logic elements + total memory bits + 9\*embedded multiplier 9-bit elements*

*Timing cost =*

*Simulation time*

*A screenshot of a computer program

Description automatically generated*