**Name**: - Aryan Nadurmath

**ID NO**: - 21EL069

**Division/Batch**: - A-11

**Year**: - 2023-24

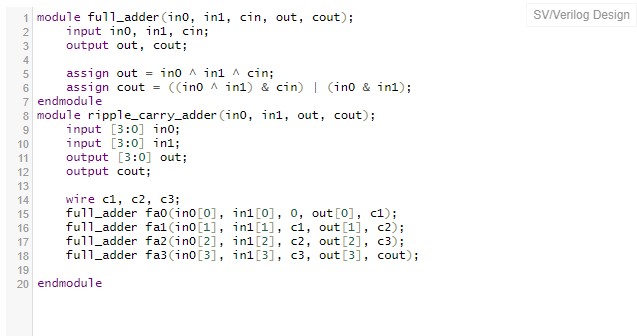
**Subject**: - Digital System Design (3EL42)

**Branch**: - Electronics (EL)

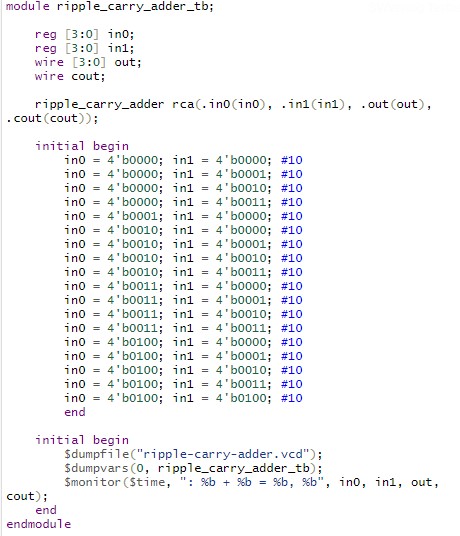
Assignment: - 2

# Q-1: -Design 4-bit Ripple Carry Adder with the help of 1-bit adder

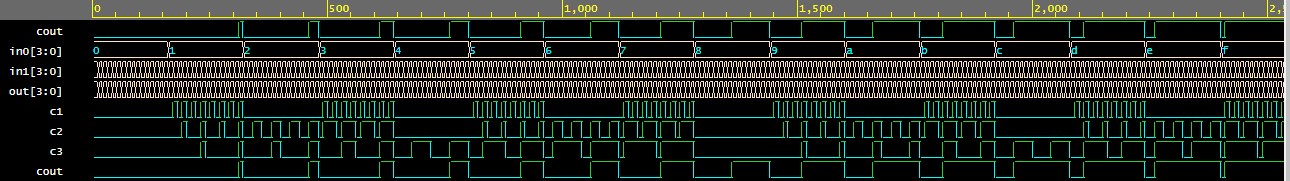
VERILOG CODE:-



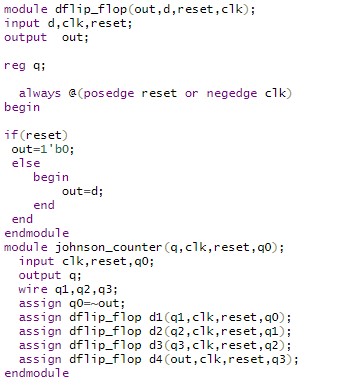
TEST BENCH:-



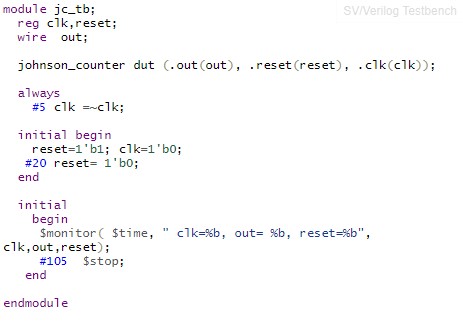
OUTPUT: -



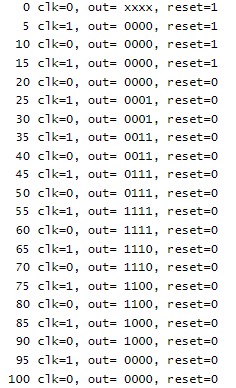
Q-2: - Design D-flipflop and reuse it to implement 4- bit Johnson Counter



TEST BENCH:-

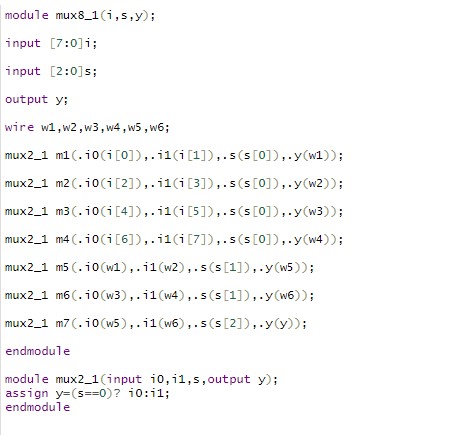


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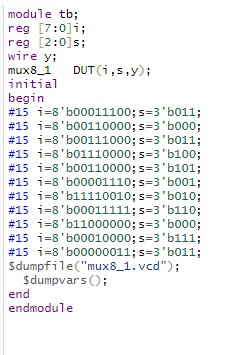


Q-3: - Reuse 2:1 Mux code to implement 8:1 Mux

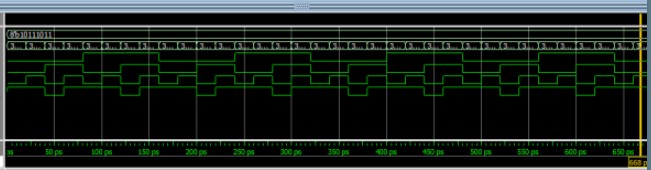
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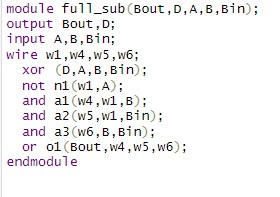


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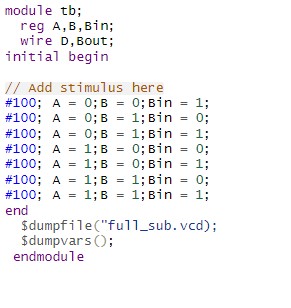


Q-4: - Design a Full Subtractor with Gate Level Modelling Style. (Use primitive gates)

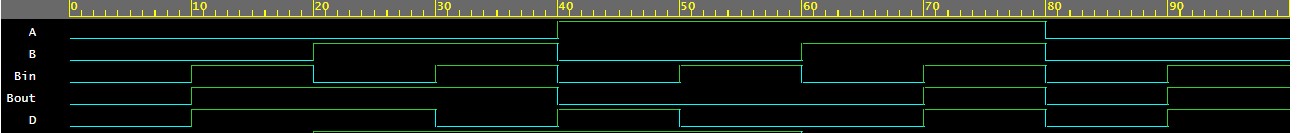
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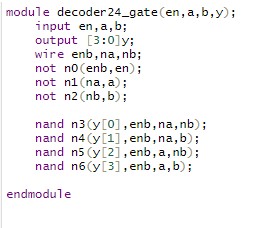


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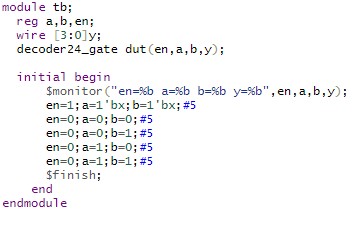


Q-5: - Design a 2X4 decoder using gate level modelling

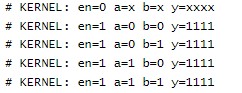
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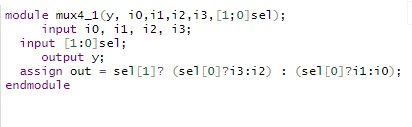


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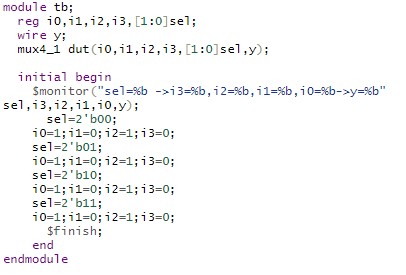


Q-6: - Design a 4x1 mux using operators. (Use data flow)

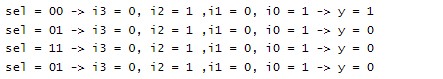
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# TEST BENCH: -

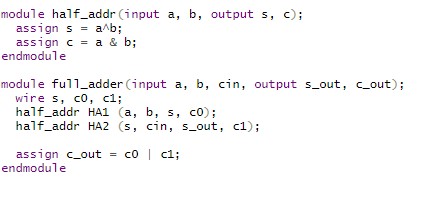


OUTPUT: -

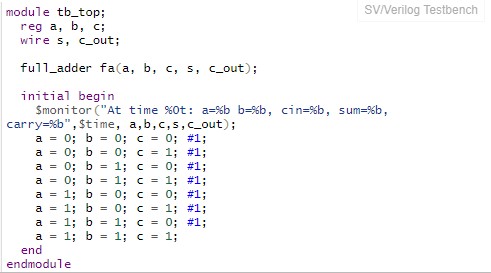


Q-7: - Design a Full adder using half adder.

# VERILOG CODE:-



TEST BENCH: -



OUTPUT: -

