EE214 Digital Circuits Laboratory

EXP6 – Sequence Generator

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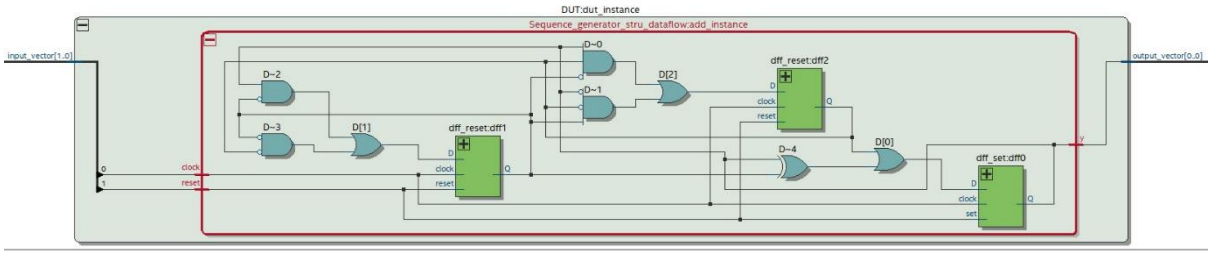
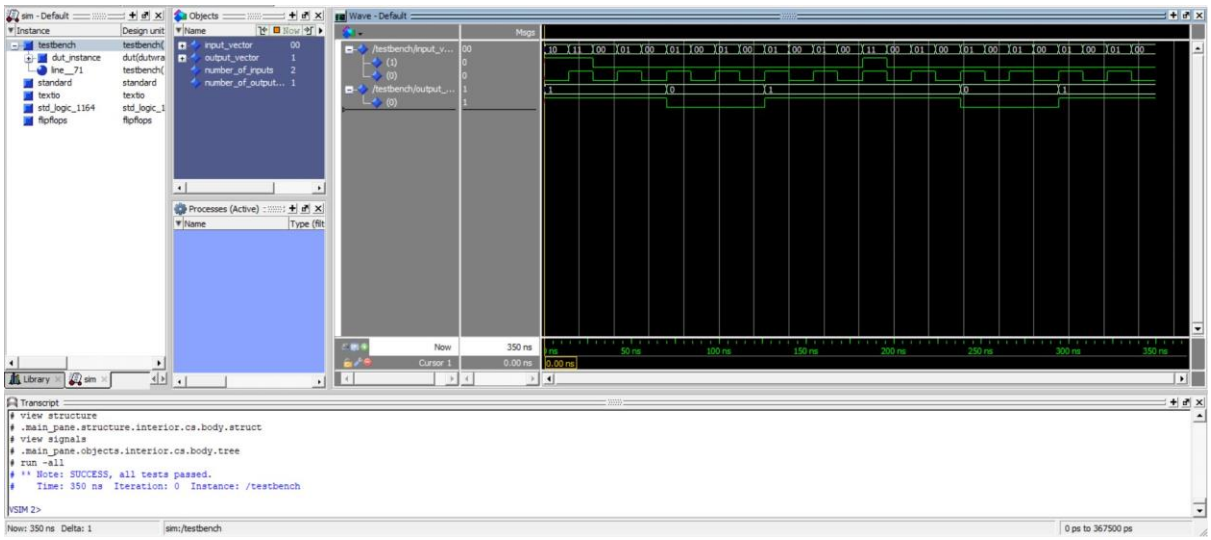
RTL Viewer:



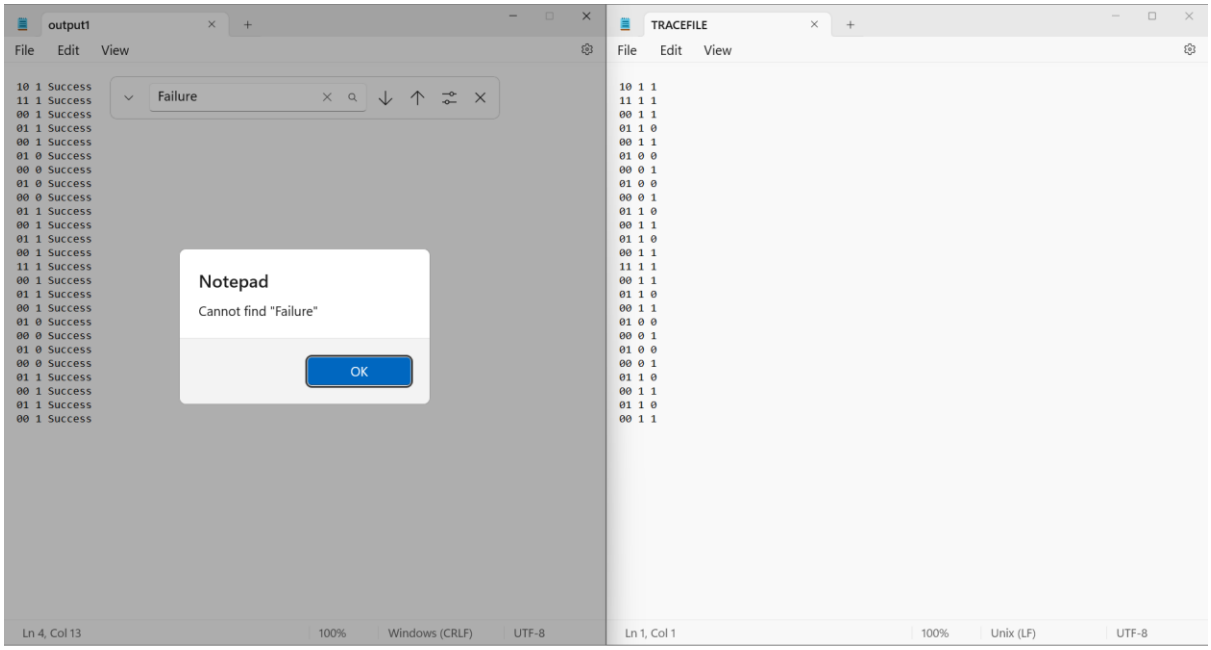
RTL Simulation:

Note: SUCCESS, all tests passed.



Scanchain based testing:

All tests were successful.



Lab Journal:

A state diagram to generate the states so that LSB of the states will generate the required sequence and from the state table with the help of K-Maps generate equations for DFF inputs in terms of present state and reset verified by the TA.

EXPT. NO.

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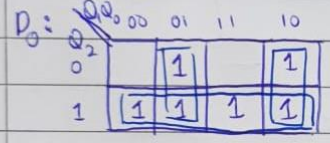
Week 6: Sequence Generator

Present State $Q_2 Q_1 Q_0$	Next State	DFF inputs $D_2 D_1 D_0$
001	011	0 1 1
011	000	0 0 0
000	010	0 1 0
010	101	1 0 1
101	111	1 1 1
111	011	0 1 1
100	011	0 1 1
110	011	0 1 1

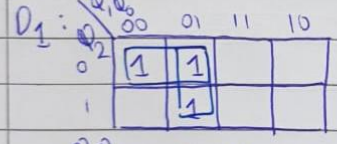
D_0:



$D_0 = Q_2 + \bar{Q}_0 Q_1 + Q_0 \bar{Q}_1$

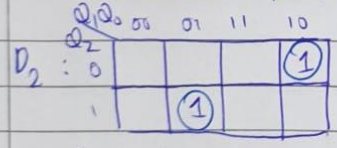
$D_0 = Q_2 + (Q_0 \oplus Q_1)$

D_1:



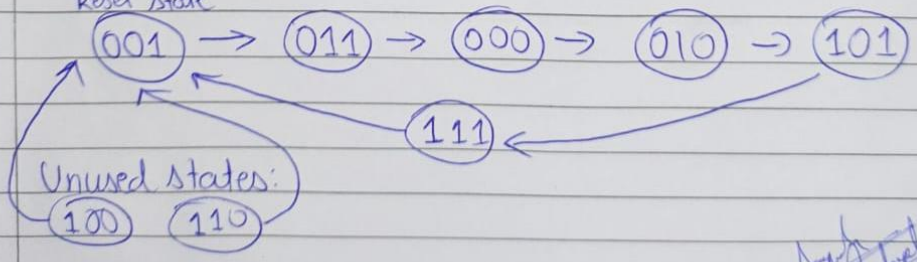
$D_1 = Q_0 \bar{Q}_1 + \bar{Q}_1 \bar{Q}_2$

D_2:



$D_2 = \bar{Q}_1 Q_0 Q_2 + \bar{Q}_0 Q_1 \bar{Q}_2$

Reset state



Teacher's Signature: _____