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CSE 2300W
11/20/18

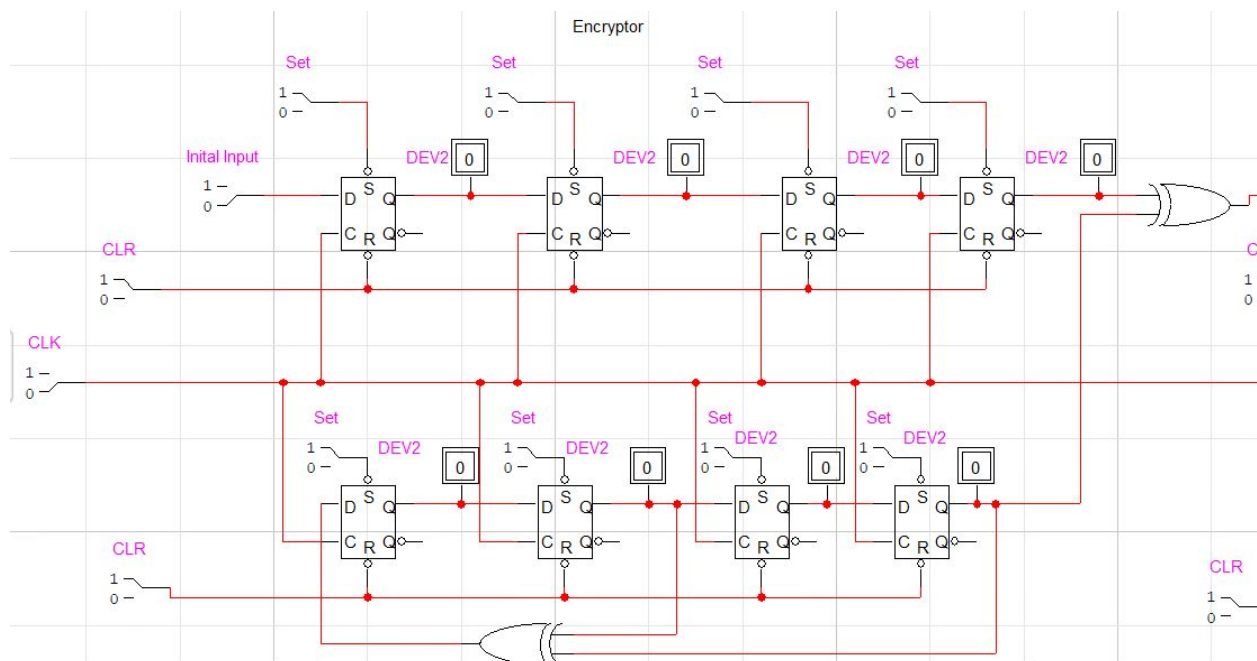
PRBS LAB

The objective of this lab was to create and practice using a LFSR (linear feedback shift register) to create a Pseudo Random Binary Sequence generator. This includes creating the transmitter and the receiver.

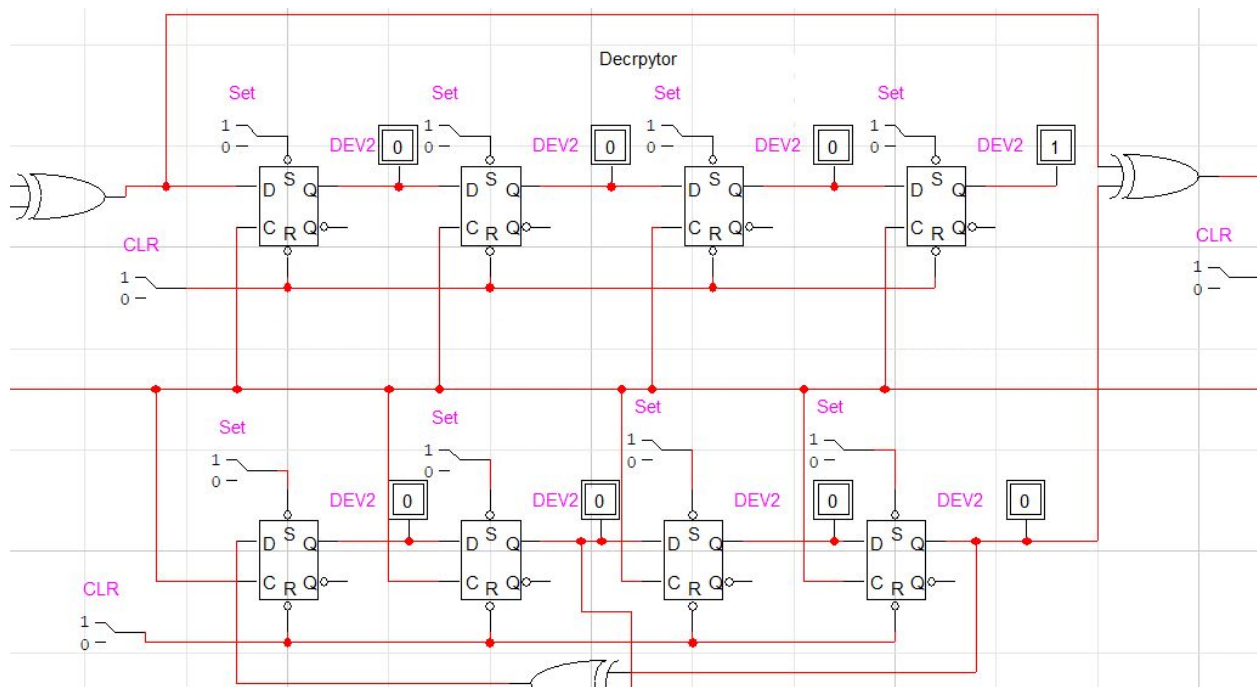
The linear feedback shift register (LFSR) can be used to create the basis for sending and receiving encrypted messages. This lab validates the secure communication process using a Pseudo Random Binary Sequence (PRBS) and has the possibility to show evidence of not knowing the start point of the sequence.

- 1.) Firstly I design a circuit as the source of the data to be transmitted using logic works.
- 2.) Next I designed a circuit to use a XOR gate with a PRBS to produce a “garbage” message.
- 3.) Then I created the receiving circuit using an XOR gate to “decode” the transmitted message and tested it thoroughly.

(The Encryptor Part of The Circuit)

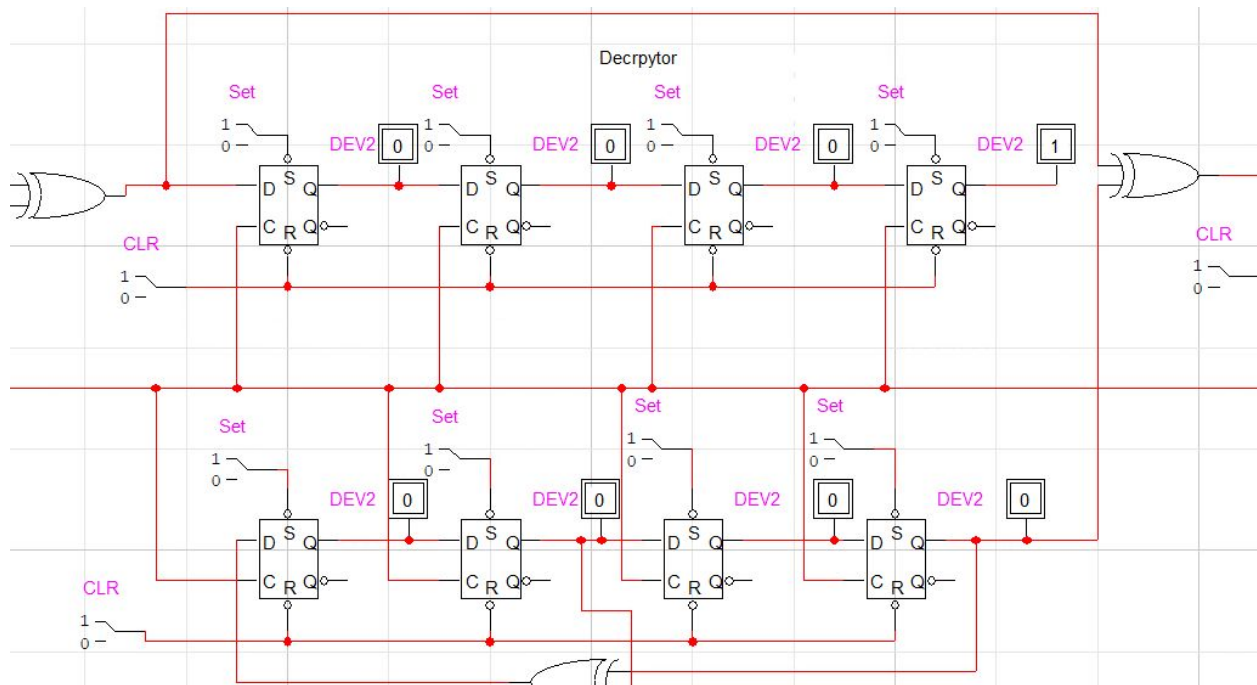


(The Decryptor Part of the Circuit)



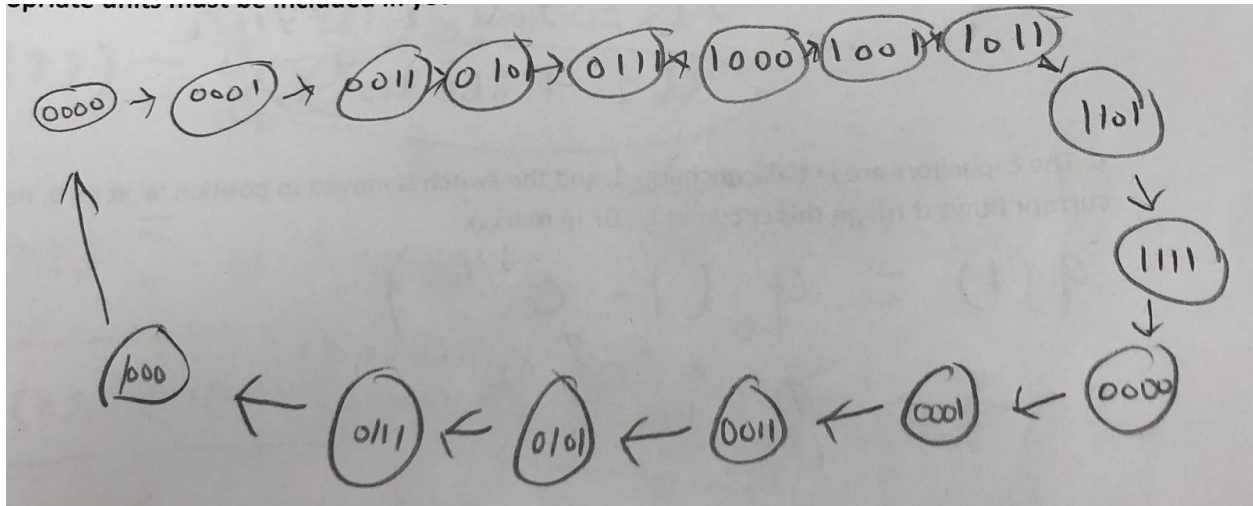
(The Output)

(Had to split from decryptor because it would not fit in the screenshot this part was still created in the decryptor part of the procedure.)



Initial Value	Final Value
0001	0011

0011	1111



The results produced from this logicworks lab were a success as demonstrated to Haitham in the demo.

Discussion:

This lab was the second one in a row that nothing has gone wrong and I would like to thank KB for fixing the labs halfway through the semester. The last lab and this one really have had a great balance between learning the material and having the ability to be successful.

Conclusion:

In conclusion my lab turned out to be a success and I found that the only hard part of the lab was making sure to input the test values into the circuit properly. I did had to make my 16 state diagram off a guess because I never got an email back on what was the proper way to test the encoding and decoding circuit. I think that moving forward if there were maybe example videos for the labs in terms of how to test them or how to do similar labs that would be very helpful.