ECS 455: Quiz 3 Solution

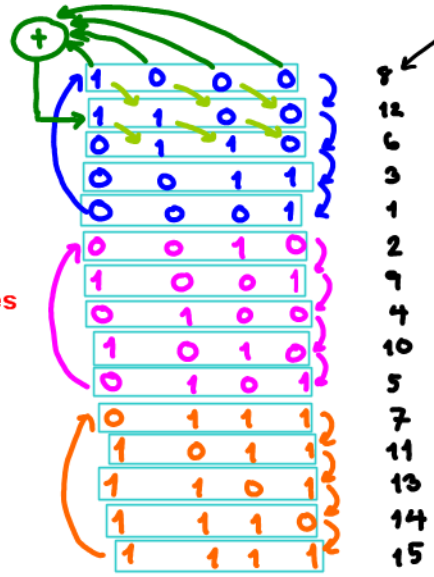
Instructions

1. Separate into groups of no more than three persons.
2. Only one submission is needed for each group. Late submission will not be accepted.
3. ***Write down all the steps*** that you have done to obtain your answers. You may not get full credit even when your answer is correct without showing how you get your answer.
4. **Do not panic.**

Name	ID
Prapun	

Draw the complete state diagrams for linear feedback shift registers (LFSRs) using the following polynomials. Does either LFSR generate an m-sequence?

1. $x^4+x^3+x^2+x+1$

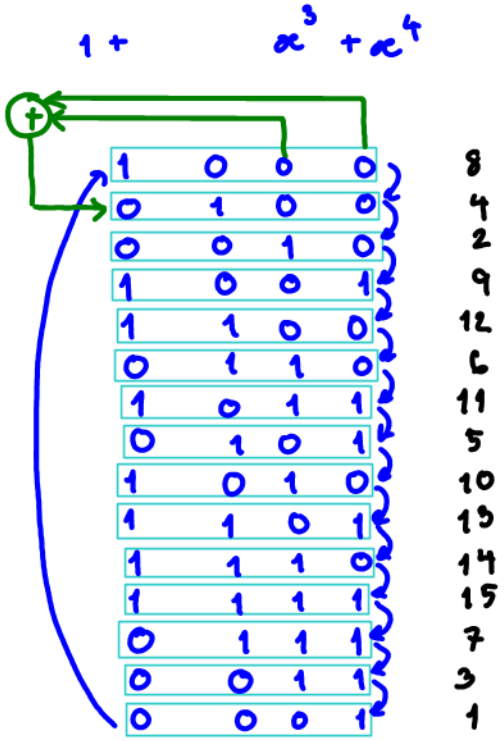


I convert the states to decimal numbers so that it is easy to see which states haven't appeared.

The corresponding LFSR does not generate m sequence because no single cycle visit all non-zero states.

Note that because the question days "complete" state diagrams, we need to show these two cycles as well.

2. x^4+x^3+1



The corresponding LFSR generates an m sequence because one single cycle visit all non-zero states.