**5. Create a LIFO buffer system which can store 5 numbers of 4bit each**

* LIFO stands for Last In First Out
* Thumb rule to design a LIFO is not to read from empty buffer and don’t write when buffer is full.
* So I made a buffer memory of depth 5 with each word 4-bit wide.
* Made flags for full and empty and read and write to LIFO according to flags.
* I preferred case instead of if-else because if-else will generate parity encoder type logic and cause timing issues.

**TEST STIMULUS**

* In the test stimulus, I wrote 7, 4,3,2,6 into FIFO and we can see full flag gets asserted.
* Then I read for 3 clock cycles. So data\_out became 6, 2, and 3.
* Then I wrote 9 to buffer and read once. So data\_out gives 9
* Then I read out remaining values and empty flag gets asserted.