Remember Me

A "Remember Me!" circuit has one 4-bit input "r" and one 4-bit output "m." The output "m" will match whatever the last value that comes after r == 4'hF. When the circuit has just come out from reset, m is reset to 0. Here are 2 examples of operation (the values are shown in hexadecimal):

Use synchronous reset for this design.

cycle	0	1	2	3	4	5	6	7	8
reset	1	0	0	0	0	0	0	0	0
r	4	7	F	3	6	2	F	5	7
m	X	0	0	3	3	3	3	5	5

cycle	0	1	2	3	4	5	6	7	8
reset	1	0	0	0	0	0	0	0	0
r	2	F	A	F	F	9	3	F	6
m	X	0	A	A	F	9	9	9	6

Use the following module specification:

```
module remme (clk, reset, r, m);

    input clk, reset;
    input [3:0] r;
    output [3:0] m;

// Add code here

endmodule
```