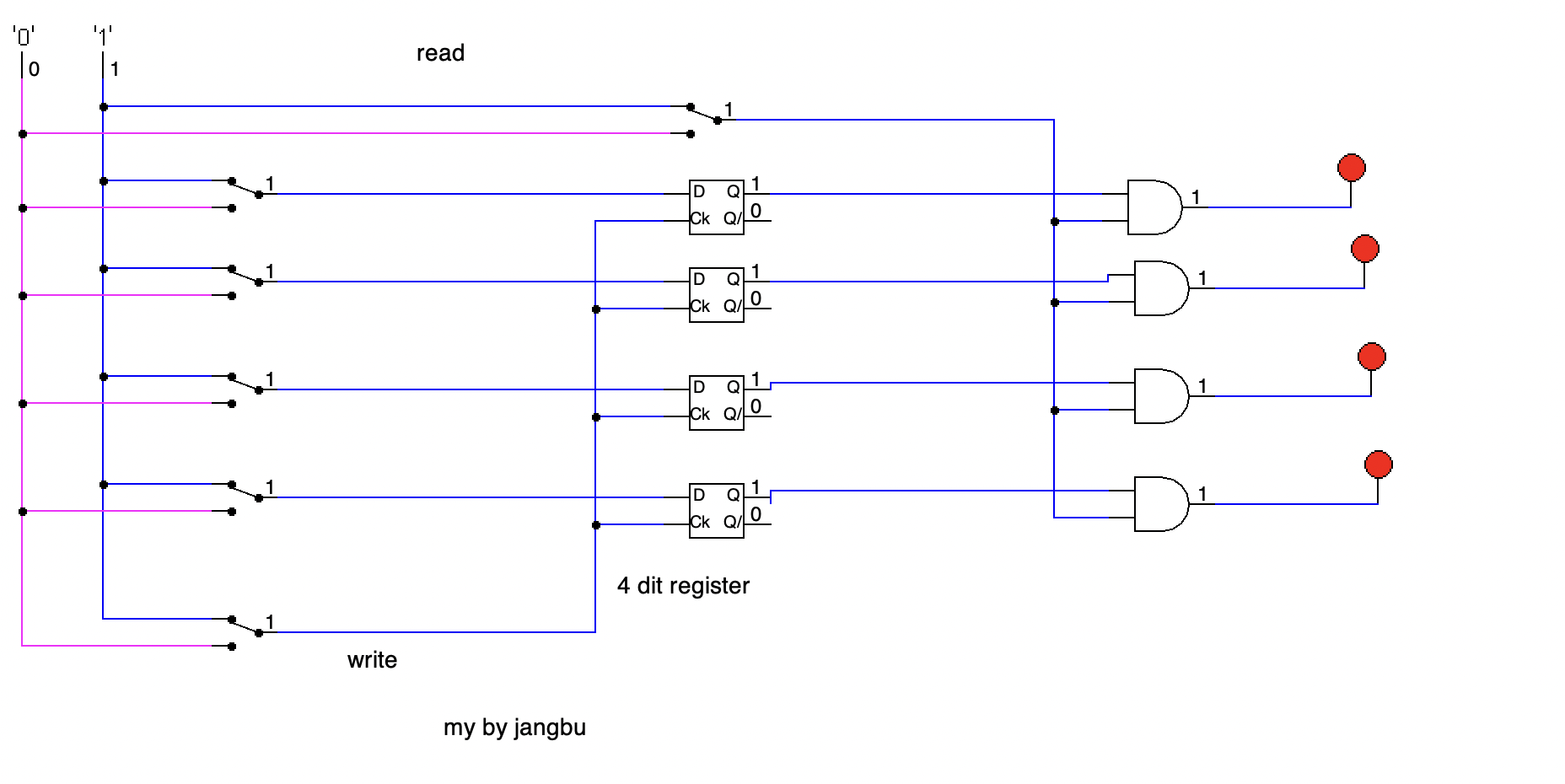
**Instruction**

Complete all questions in **1 hour.**

1. What is flip flop? Describe the working mechanism RS flip flop.

Diagram

Description automatically generated

1. Construct the timing diagram for half adder and half subtractor, full adder.
2. Describe the working mechanism of 4-bit register by constructing the circuit using D flip flop.
3. Differentiate between:
4. Flip flop and Latch
5. Combinational circuit and Sequential circuit
6. SIPO and PISO shift register