SYSTEM BLACK BOX:

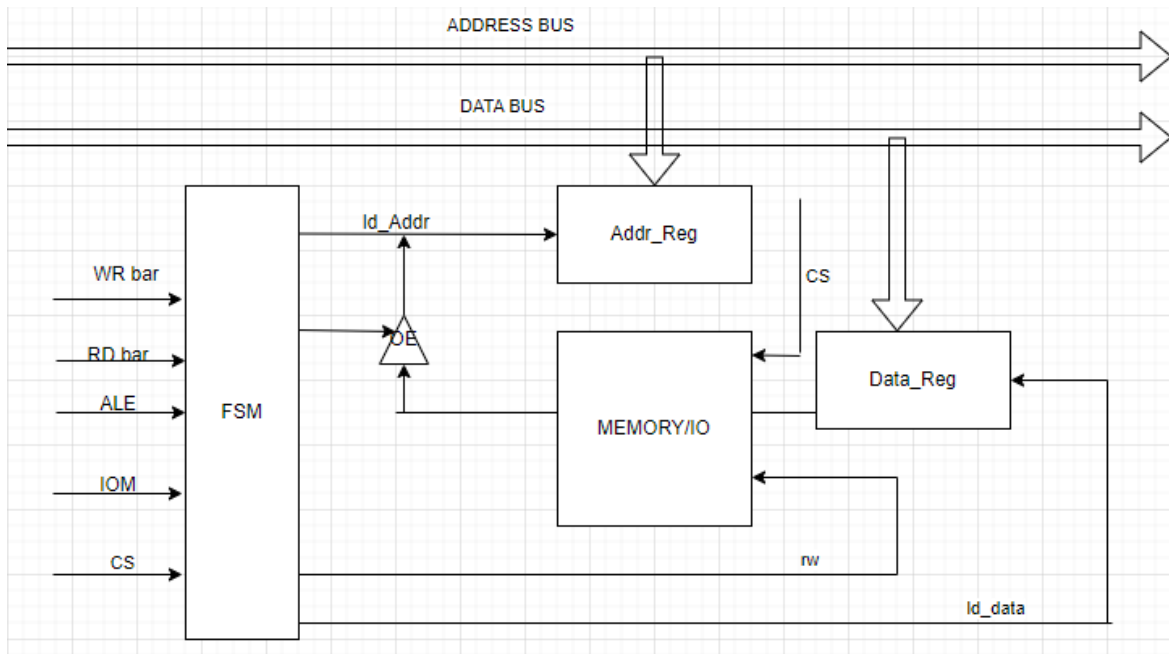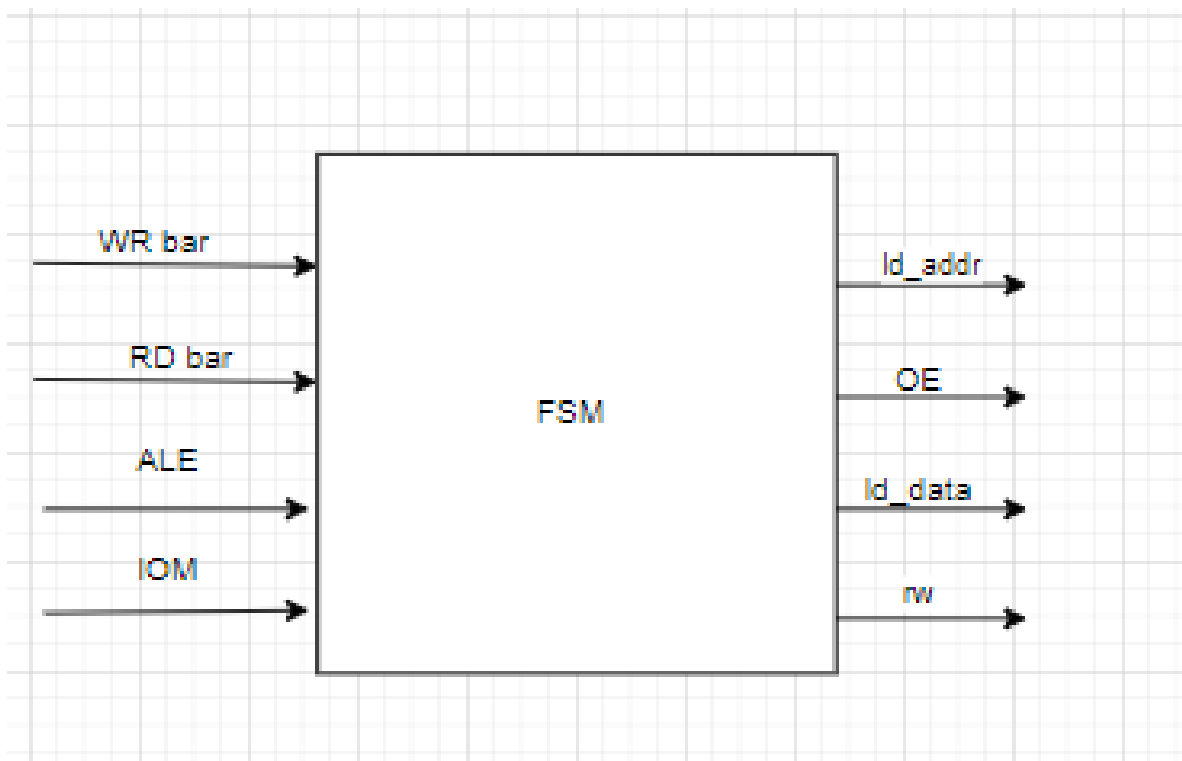**FSM BLACK BOX:**

FSM: