Sample generator:

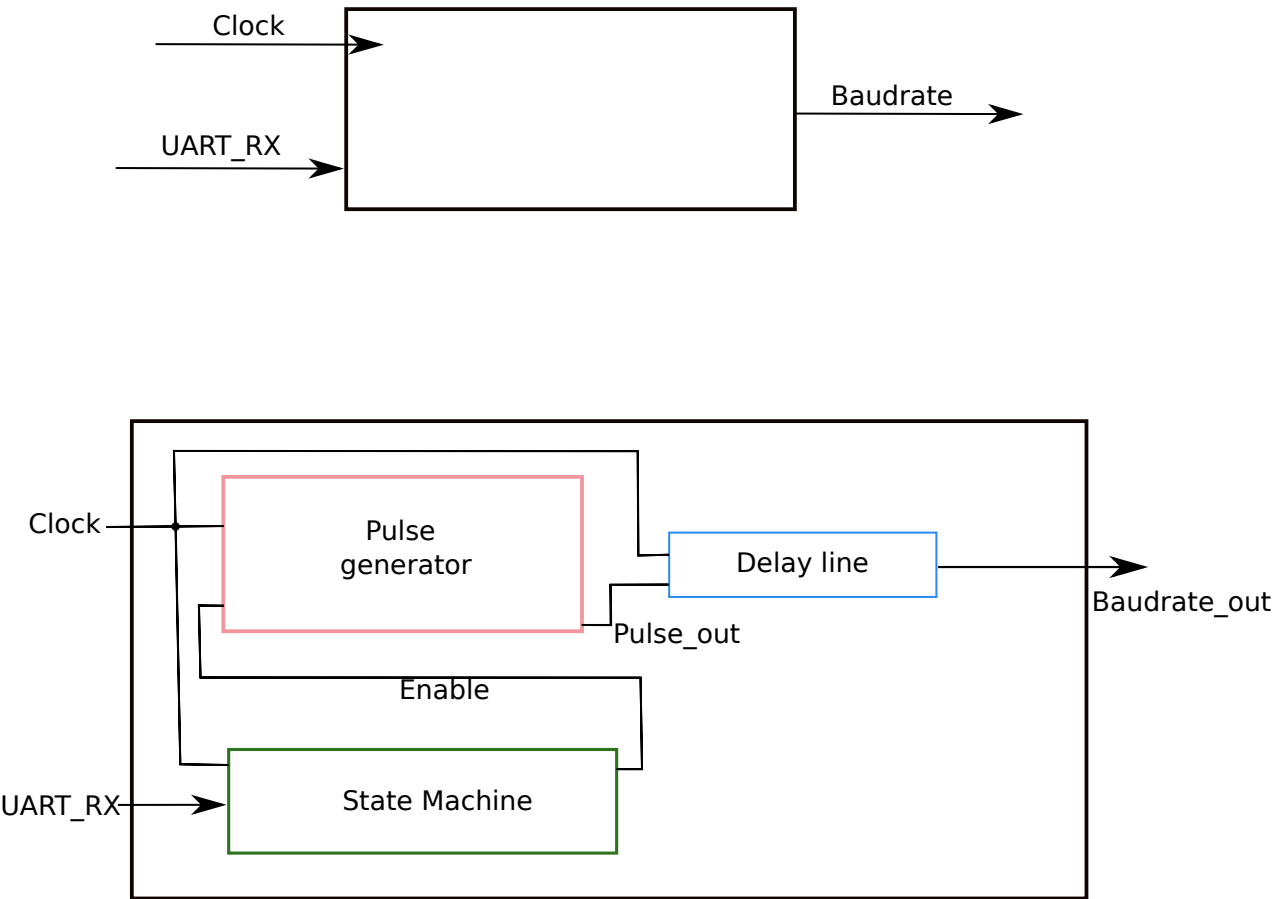# State machine: