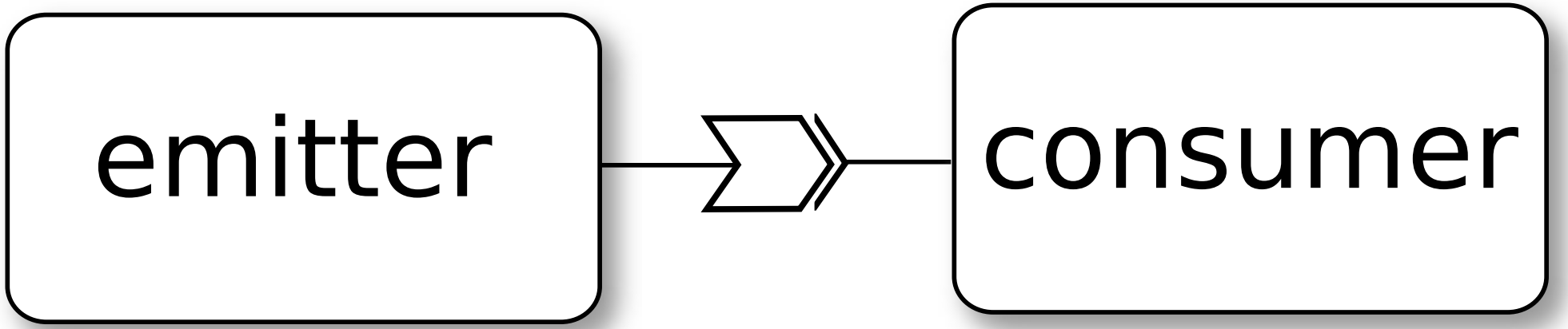
emitter
consumer