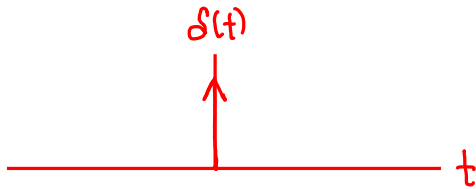


Example 4.9. Consider the LTI system with the impulse response h given by

$$h(t) = \delta(t).$$

Determine whether this system has memory.

Solution. Clearly, h is only nonzero at the origin. This follows immediately from the definition of the unit-impulse function δ . Therefore, the system is memoryless (i.e., does not have memory). ■



memoryless $\Leftrightarrow h(t) = 0$ for all $t \neq 0$