

```
library IEEE;
use IEEE.STD_LOGIC_1164.ALL;
use IEEE.NUMERIC_STD.ALL;

entity TICK_1ms is
    Port ( CLK : in STD_LOGIC;
           Tick : out STD_LOGIC);
end TICK_1ms;

architecture Behavioral of TICK_1ms is
    constant Ndiv: integer := 99999;
    signal Q: integer range 0 to Ndiv:= 0;
begin

    process(CLK)begin
        if rising_edge(CLK)then
            if(Q = Ndiv)then
                Q <= 0;
            else
                Q <= Q+1;
            end if;
        end if;
    end process;

    Tick<= '1' when Q = Ndiv else '0';
end Behavioral;
```