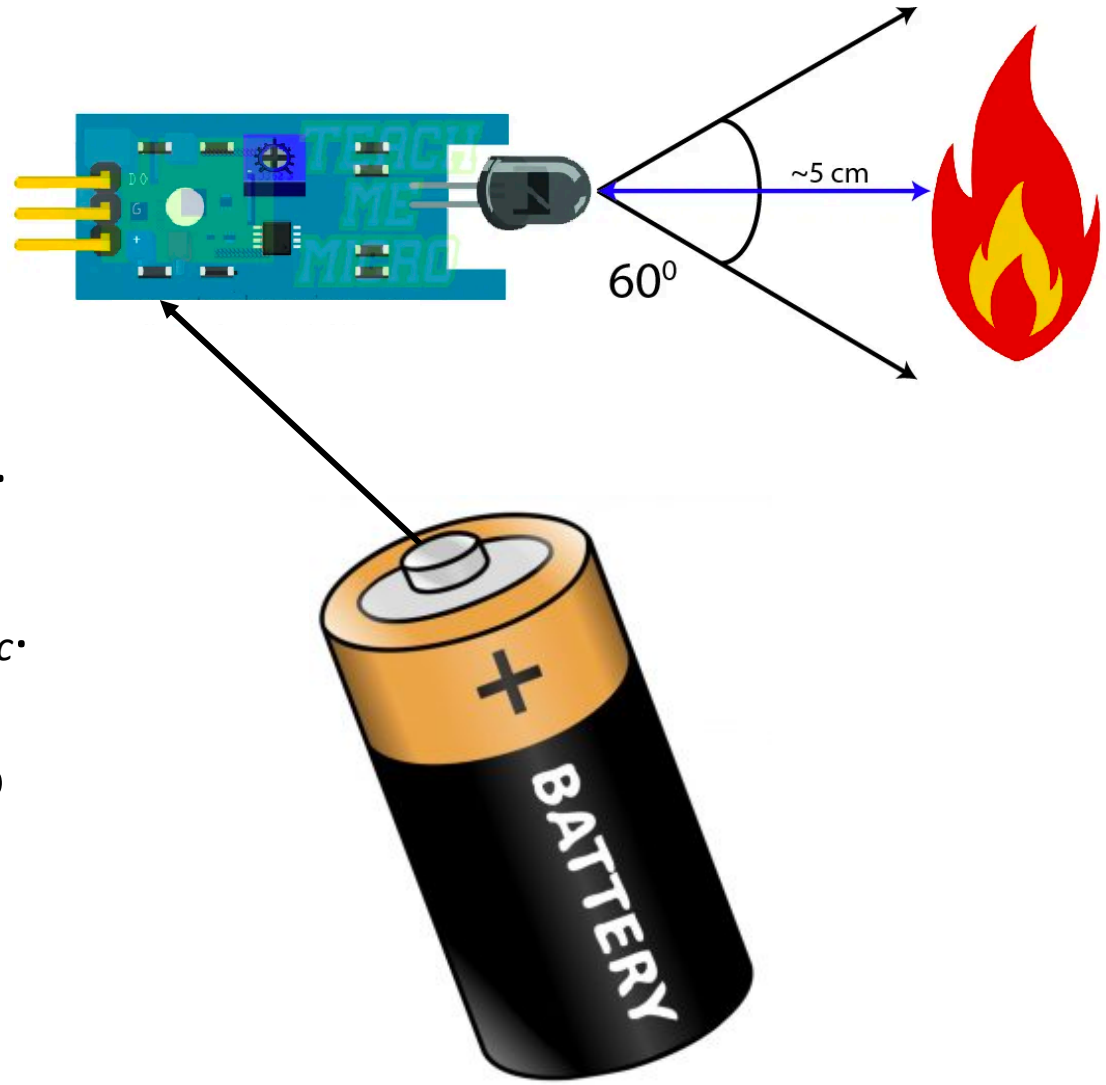
Project Type C

For students with ID (Codice Persona) ending with :
02, 07, 12, 17, 22, 27, 32, 37, 42, 47, 52, 57, 62, 67, 72, 77, 82, 87, 92, 97

A sensing device

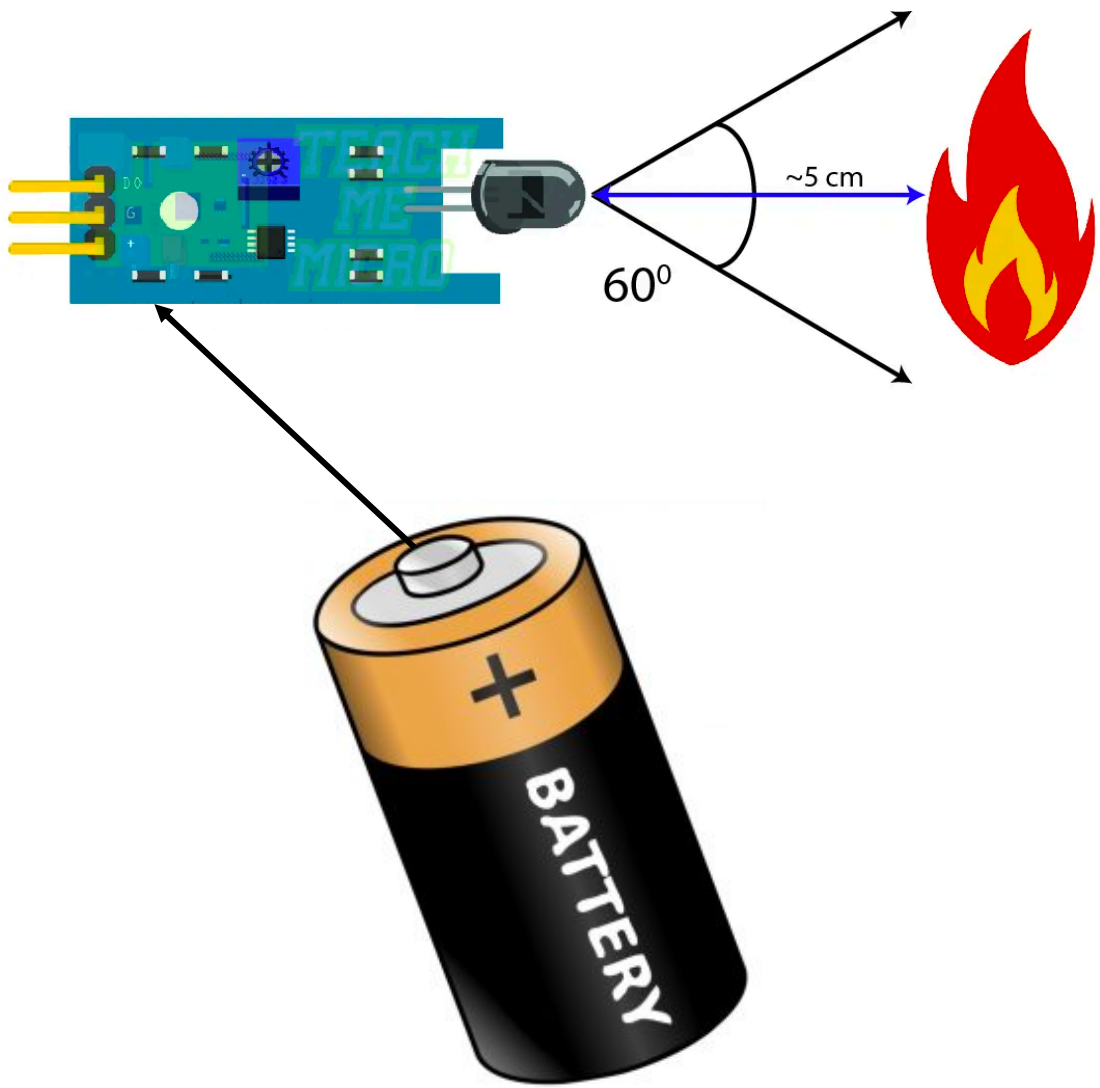
A sensor has the following characteristics

- It switches from on to off, at rate μ_{off} returns on at rate μ_{on}, to save its battery.
- When on, it senses events at rate μ_{sen}.
- Sensed events are processed at rate μ_{proc}.
- Processed event trigger an action with probability p_{act}, otherwise they return to the on state.
- Actions require a random time X_{act}, then the sensor returns to its on state.



A sensing device

- Except for the action X_{act}, all other timings can be considered exponentially distributed.
- Depending on the state, the sensor has a different energy consumption:
  - $\mathcal{E}_{off}$ when off.
  - $\mathcal{E}_{on}$ when on and not processing.
  - $\mathcal{E}_{proc}$ when processing.
  - $\mathcal{E}_{act}$ when acting.



Version C1

For students with ID (Codice Persona) ending with :
02, 22, 42, 62, 82

Considering the following parameters, compute the average energy consumption and the on frequency.

The duration of X_{act} should be determined studying the corresponding trace (measured in seconds): `Trace13.txt`

p_{act}
0.1

μ_{on}	μ_{off}	μ_{sen}	μ_{proc}
0.1 $sec.^{-1}$	1	3	5

ε_{on}	ε_{off}	ε_{proc}	ε_{act}
1 mW	0.1 mW	5 mW	50 mW