Labwork 4 – servo-motor

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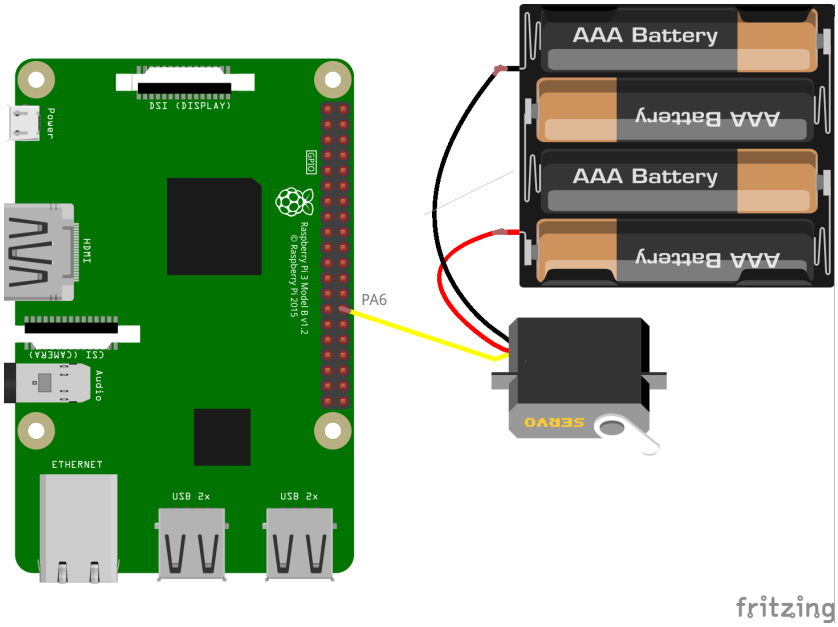
In this labwork, we will control a servo-motor controlled by a PWM signal produced by a timer. The final goal is to implement a flag waver, that is, to make the servo-motor to move from 0° to 180° and the reverse on a long period.

Because of the lack of required hardware, the labwork has to be performed by pairs of students and deposit by each student of the pair.

To implement this application, yuou have to build the circuit described below:



As the servo-motor consumes too much current, it has to be powered up by a third-party source (here the battery block).

To be controlled, the servo-server receives a PWM signal from the STM32F4 on the pin `PA6` with the following characteristics:

- The period is 20 ms.
- To get an angle of 0°, the pulse must have a width of 1 ms.
- To get an angle of 180°, the pulse must have a width of 2 ms.

- The pulse cannot be lower than 1 ms and bigger than 2 ms (without breaking the servo-motor).

To generate the PWM signal, we will use `TIM3` on channel 1. It is connected to the pin $PA6$ of $GPIOA$ (alternale line $AF2$).

To Do: implement the flag waver (with a wave period of 2 s).