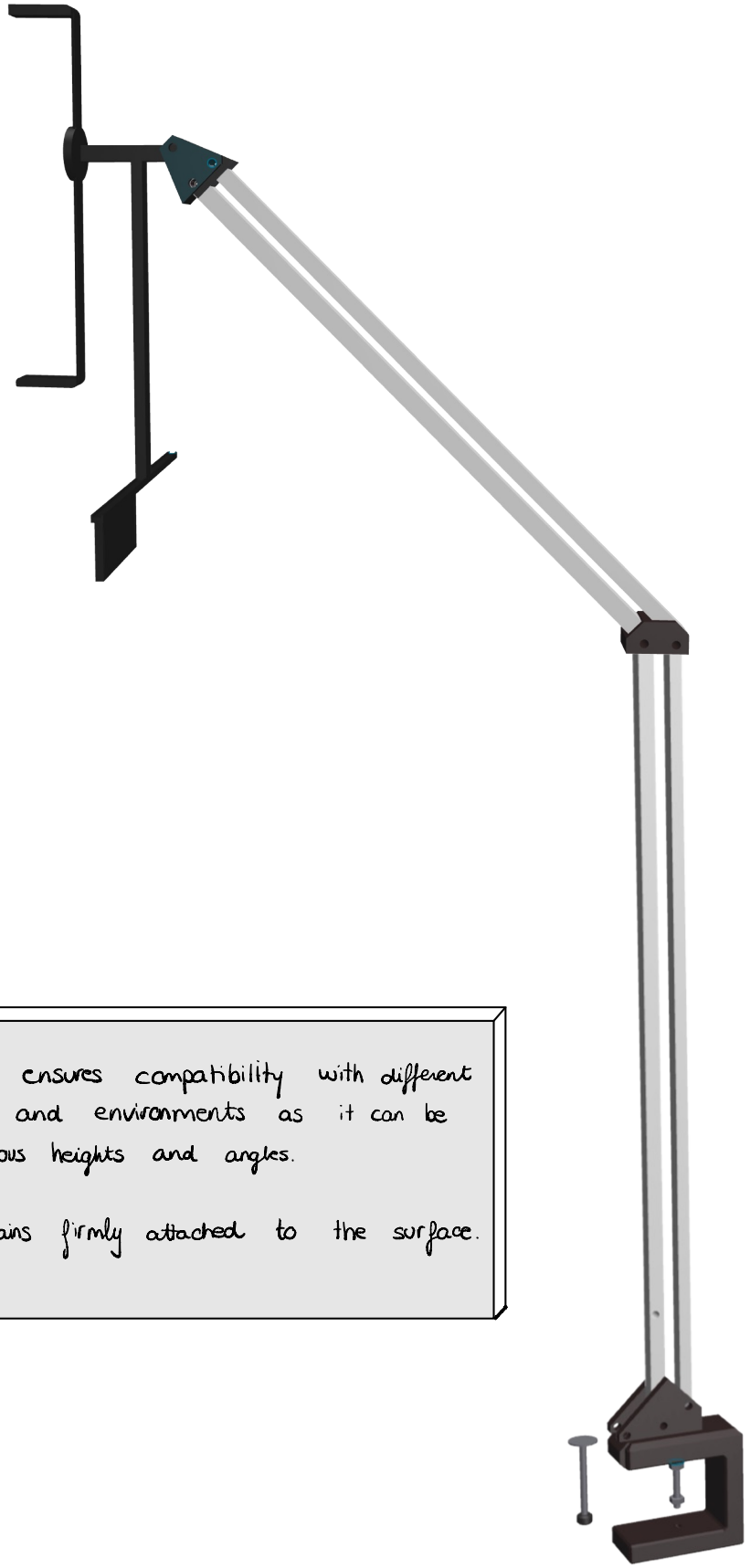
MECHANICAL SUPPORT DESIGN

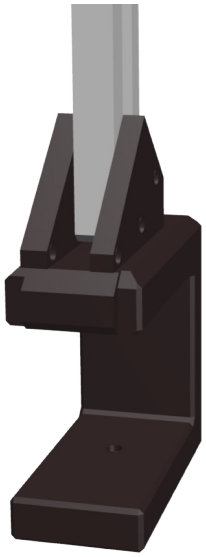


This design ensures compatibility with different user needs and environments as it can be set at various heights and angles.

It also remains firmly attached to the surface.

• The Support

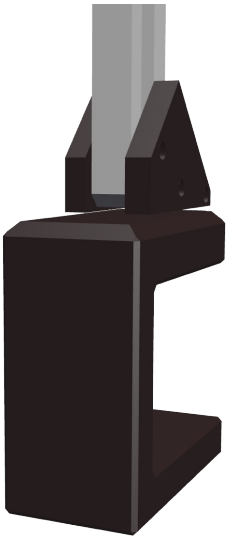
The support is designed to be adjustable so it can be attached to different surfaces.



How?

1. C- clamp

2. Adjustable screw



Use cases

Wheelchair

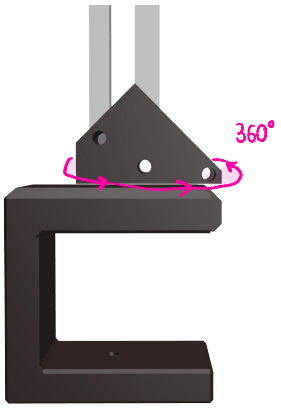
Desk

◦ Segmented Arm

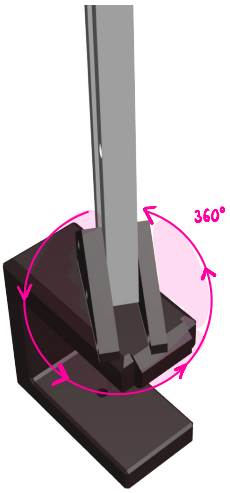
The "arm" consists of 3 segmented sections connected by joints that enable an independent movement and a flexible position to set the desired height.

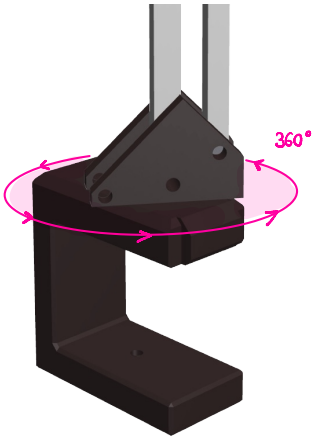
→ The sections are rigid bars
→ Screws are used to adjust it and help to support the tablet weight.

→ 360° Rotation

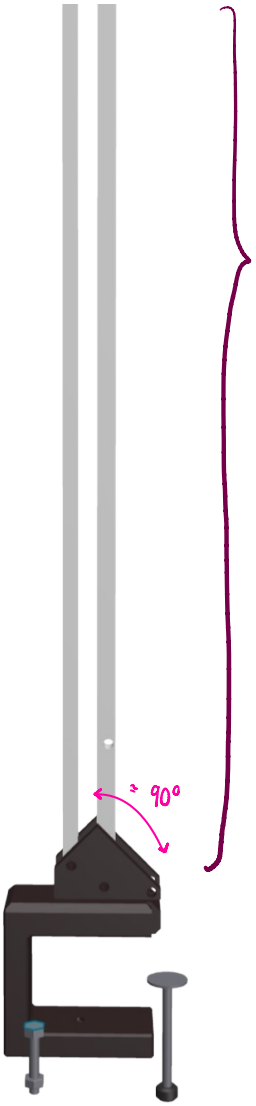


The clamp's connection to the segmented arm allows a 360° rotation horizontally.
This help to align the tablet with the patient's viewpoint

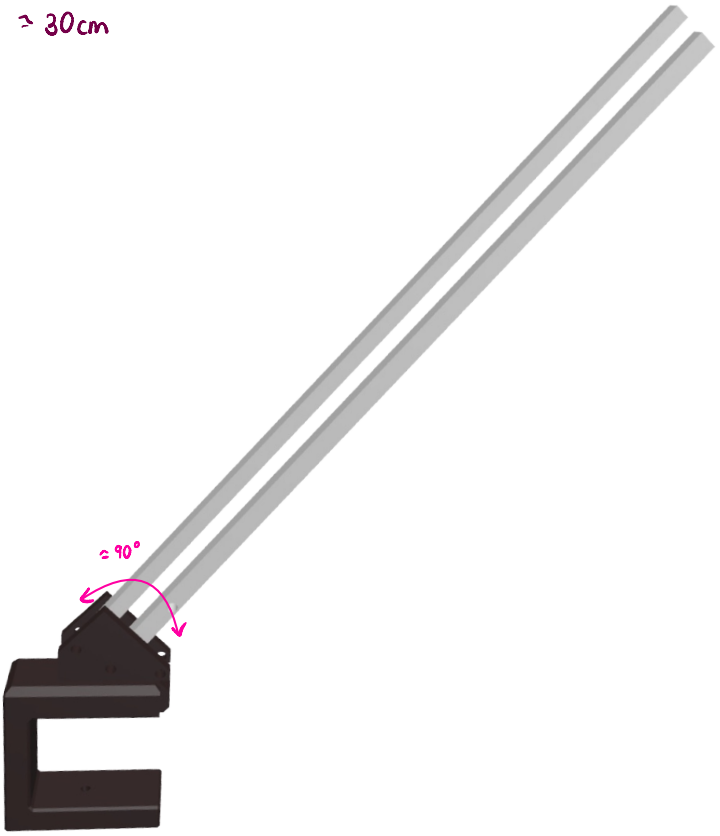


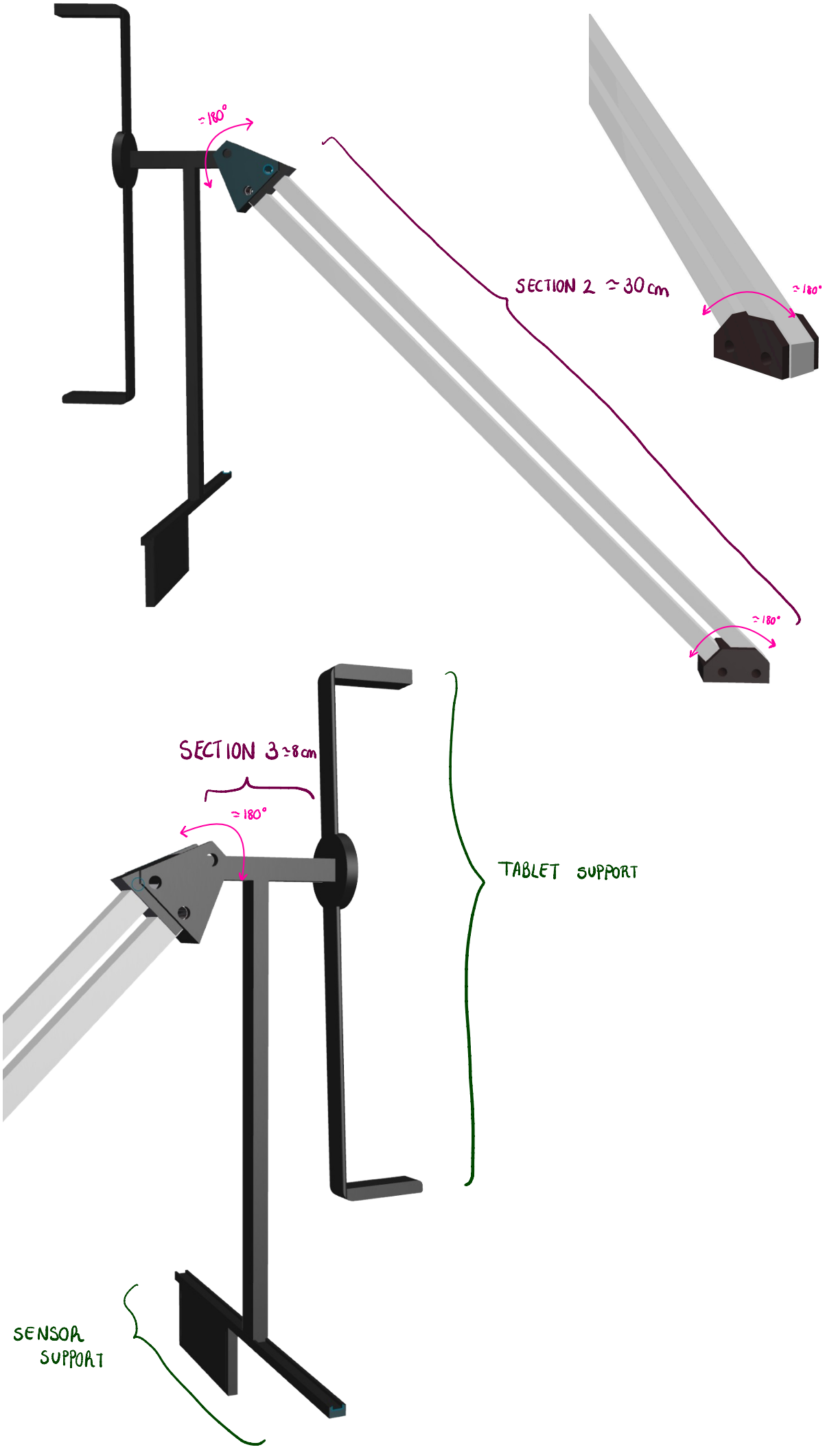


→ Articulated Movements



SECTION 1 ≈ 30cm

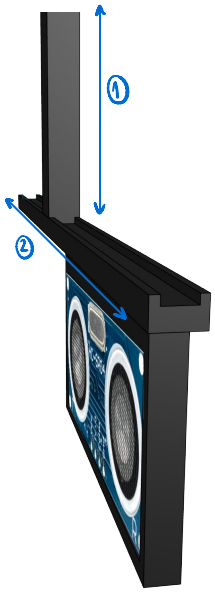


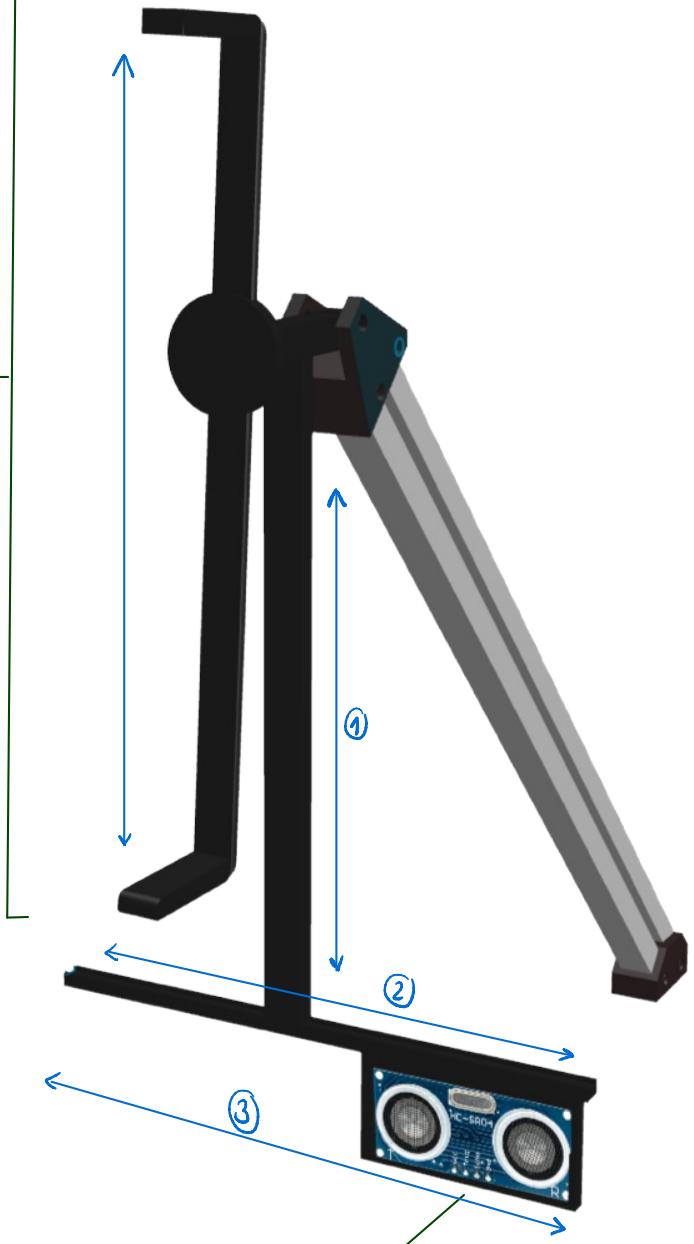

≃180°
SECTION 2 ≃30cm
≃180°
≃180°
SECTION 3 ≃8cm
≃180°
TABLET SUPPORT
SENSOR SUPPORT

◦ Tablet and Ultrasound Support

Securely holds the tablet in place.

It should be adjustable to accomodate tablets of various sizes and dimensions



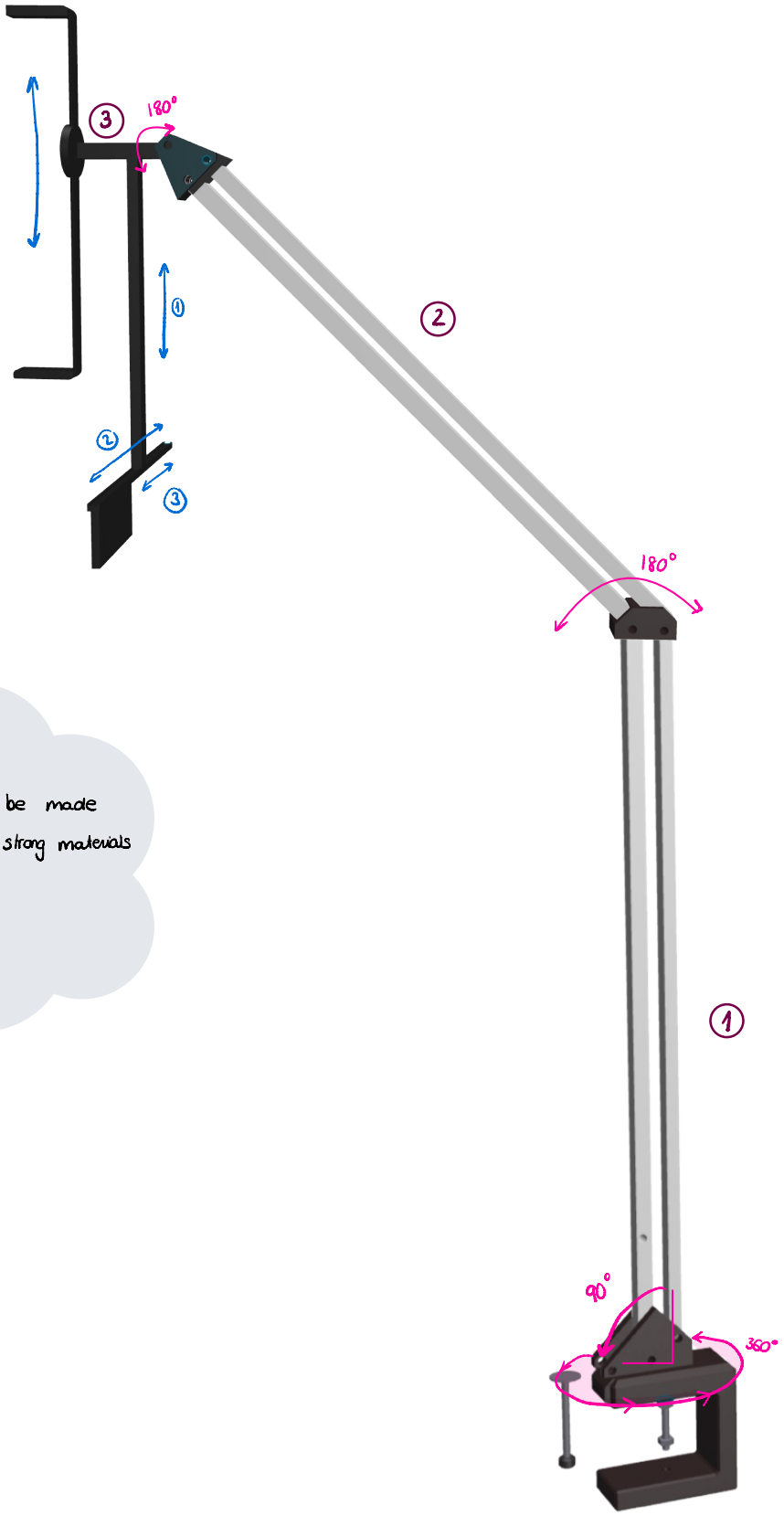


The ultrasound sensor must be positioned at a height suitable for the user. Its support should allow horizontal and vertical adjustments (along the x and y axes) to ensure accurate detection of the extremity's movements (left/right arm).

* The adjustments may be done by using a hole and pin system.

(1, 2, 3)

- Overview



The structure should be made of lightweight and strong materials providing stability.
↳ Alluminium

=> Improvements

- Figure out how the ESP-32 board is attached. Next to the US sensor?
- Think about how cables are going to be placed and distributed.