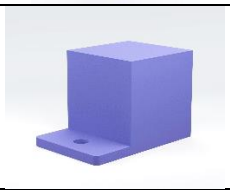
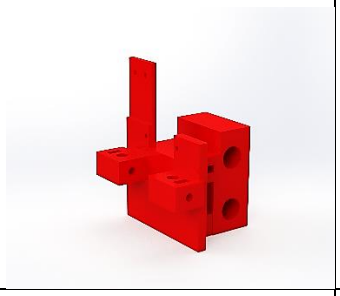
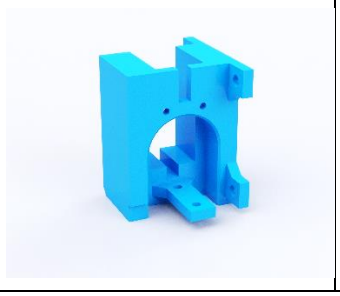
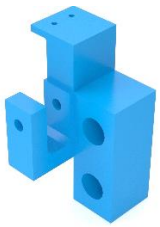
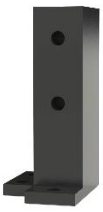
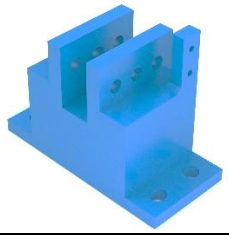
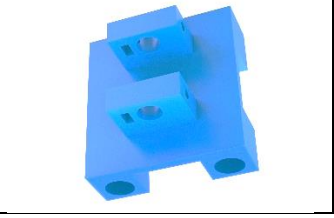
Bill of Material

Sr. No.	Part Name	Price	Quantity
1	**Plug-in board MB-102**	-	1
2	**Moto Driver Adafruit DRV8833**	-	1
3	**Development Board ESP32 NodeMCU**	-	1
4	**TT Motor Encoder**	-	2
5	**Servo Motor Miuzei 9G**	-	1
6	**Cable Motor Driver to ESP32**	9 €	1
7	**Cable Power Supply**	-	1
8	**Jumper Wire**	-	1 set
9	**Motor Feetech DC-130D**	-	2
10	**Power supply unit MB102**	-	1
11	**Base Plate 305x305x15 mm**	-	1
12	**Microswitch red XSS-5GL13**	-	3
13	**Belt T2 2mm pitch 6mm wide**	-	1.6m
14	**Linear ball bearing LMU-N6**	-	8
15	**Push Button**	-	1
16	**Shafts d6 x 300mm**	-	7
17	**Storage box**	-	1
18	**Screws (M4, M5, M6)**	-	20
19	**Screws (M2, M3) Box**	10	13
20	**Led**		1

Bill of Material – CAD

Sr. No.	Diagram	Part Name	Short Description	Quantity
1		**Base Plate 305x305x15 mm**	A wooden base plate used for mounting other parts in the project.	1
2		**Move-Pulley**	A 3D-printed pulley part used for mechanical movement in the system.	2
3		**Geared-Pulley**	A 3D-printed pulley with teeth mechanism for precise movement.	2
4		**3D-printed feet**	Feet designed and printed to support the system structure.	4
5		**X-axis moving guide**	The X-axis moving guide is a component that moves along the X-axis using a belt mechanism. The stationary part is where the servo motor is mounted to drive the movement.	1
6		**x axis rod support with motor**	The X-axis rod support with motor is designed to securely fix a DC motor for X-axis movement. It also accommodates an encoder to monitor and control the motor's position and movement.	1

7		**X-axis end support guide**	The X-axis end support guide provides structural support for the X-axis, while also connecting the belt to the roller, ensuring smooth and efficient movement along the axis	1
8		**X-axis_Motor_Blocker**	The X-axis motor blocker is designed to securely hold the DC motor in place, providing stability and support during operation.	1
9		**y axis rod support with motor**	The Y-axis rod support with motor and encoder is designed to mount a DC motor for Y-axis movement, while the encoder ensures precise position tracking and control.	1
10		**y-axis parallel support**	The Y-axis parallel support is built to connect the rods, facilitating smooth and accurate movement along the Y-axis. It ensures proper alignment and stability during operation.	1
11		**y-axis parallel support back**	The Y-axis parallel support back is built to connect the rods, facilitating smooth and accurate movement along the Y-axis. It ensures proper alignment and stability during operation.	1
12		**Y-axis right support**	The Y-axis right support is designed to provide stability for the Y-axis, connecting the belt to the roller and securing the rod for smooth and controlled movement along the Y-axis.	1

13		**Y axis trolley**	The Y-axis trolley is designed to hold the X-axis rod support with motor, allowing the rod to pass through it. It features bearings for smooth and frictionless movement during operation.	1
14		**Z axis movable part**	The Z-axis movable part is designed to hold the pen and control its vertical movement, allowing the pen to lift up and down as needed during operation.	1