

ESP32 NodeMCU	This was the choice of software subteam, and we agree for its suitable size.
N20 mini gear motor	for its reasonable price and small size.
TOF sensor (VL53L0X)	“Time of Flight” sensor measures distance accurately. Ranging distance: 30 ~ 2000mm, high speed, low cost compared to IR sensor.
L298N H-bridge ic	We choose Integrated H-Bridge Motor Driver ICs not module for its Compact size, Flexibility and Customizability. can handle up to 2A per channel and a maximum voltage of around 46V.
the AS5600 magnetic encoder	It’s a type of magnetic encoder, which can be more robust in dirty or dusty environments compared to optical encoders. The AS5600 boasts a 12-bit resolution, translating to 4096 counts per revolution (CPR). This provides accurate and detailed positional information compared to encoders with lower resolutions. he is compact, has a lightweight and Easy to use.
3.7v Li-Ion batteries	its Capacity: 2000 mAh which is suitable for our calculations.
TP4056 Lithium battery charging module	Provide us: <ul style="list-style-type: none"> <li>• Overcharge protection.</li> <li>• Over-discharge protection.</li> <li>• Short circuit protection.</li> <li>• Overcurrent protection.</li> </ul>
Lithium Battery Charger Protection Module	Provide us: <ul style="list-style-type: none"> <li>• Monitoring Battery Parameters such as voltage, current, temperature, and state of charge</li> <li>• Cell Balancing</li> <li>• Fault Detection and Diagnostics</li> </ul>
IMU (MPU-6050) Gyroscope + Accelerometer Sensor Module	For its accuracy and sensitivity because it has the 3-axis gyro and 3-axis accelerometers on a single chip. That helps us to measure acceleration, velocity, orientation and displacement