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SUMO Bot Junior Design Final Project Requirements

Customer requirement: The robot shall be powered by a low voltage power supply.
Engineering requirement: The robot shall operate at input voltage ranges of +6VDC to +12VDC.

Customer requirement: The robot shall have a battery life capable of easily lasting through the competition, and can charge at a reasonable rate.
Engineering requirement: The robot shall have a battery life of at least 15 minutes before needing a recharge. The battery shall charge from empty to full in three hours or less.

Customer requirement: The robot shall be able to sense an object and push it out of the competition ring.
Engineering requirement: Nine out of ten times, the robot shall successfully detect and be able to push a test object out of the ring from the starting position. This test object shall be within the range of 475 to 500g.

Customer requirement: The robot shall not be controlled by the user during the competition.
Engineering requirement: This robot shall run autonomously for the test object and during the competition.

Customer requirement: The robot shall be debuggable.
Engineering requirement: The robot shall send debug data to an external display. This debug data will include a battery level indicator, sensor data, and current engine output.

Customer requirement: The robot shall be as small as possible.
Engineering requirement: The robot shall not exceed 10x10cm, but shall not have a height restriction. The weight of the robot shall be in the range of 475 to 500g.

Customer requirement: The robot should look aesthetically pleasing.
Engineering requirement: The robot shall not contain breadboards, shall not have sharp corners, shall not have wires soldered to the PCB directly, shall have a rugged enclosure, and nine out of ten people find the robot aesthetically pleasing.