

AUTOMOW NEXUS
THE ROBOTICS CLUB-SNIST
INDUCTION'24
TEAM-08
ABSTRACT

PROBLEM STATEMENT

Maintaining a well-manicured lawn requires significant time and effort, particularly when it involves manually operating traditional grass-cutting equipment. This manual process is not only labour intensive but also inefficient in terms of achieving consistent and comprehensive lawn coverage, leading to uneven grass heights and missed areas, especially around corners and edges. There is a need for an automated solution that can systematically and efficiently mow a lawn with minimal human intervention, ensuring complete and uniform grass cutting.

APPROACH

The Smart Grass Cutter with Lawn Coverage is an automated lawn mower designed to address the inefficiencies and labour demands of traditional grass-cutting methods. This system utilizes a robotic vehicle equipped with a high RPM grass cutter blade, microcontroller-based circuit, ultrasonic sensors to provide comprehensive lawn coverage in a systematic zigzag pattern. The smart functionality of the system allows it to detect corners and edges, enabling it to cover the entire lawn area effectively. The mower is powered by two batteries: one dedicated to the movement of the vehicle and the other to the operation of the grass cutter motor and the Vacuum. The microcontroller coordinates the operation of the DC motors and the grass cutter, using inputs from the ultrasonic sensors to navigate and ensure precise 180-degree turns. This automated system eliminates the need for human intervention, offering a time-saving, consistent, and efficient lawn maintenance solution.

BLOCK DIAGRAM

