FINAL PROJECT REPORT

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Problem Statement

The given problem statement was to develop a grass cutting robot using Arduino board and other required accessories.

Scope of the Solution

The aim was to develop an automatic grass cutting robot. In this project we have used Arduino uno board as the base. In this prototype we have used very basic components and fundamental programming only, yet it is a highly practical low budget grass cutter for a common man in India.

This robot was designed with minimum number of parts required with the idea to make its functioning highly efficient and yet simple that too at a very lower cost. Going in an unconventional manner we have used two Arduino uno boards(one for motors and sensor while other for stepper motor). This will improve the longevity of the robot as the processors are less strained and increase the response accuracy of the robot as well.

The hardware parts are capable of high rugged usage and makes cruising on uneven lawns a lot more easier. The high ground clearance of the wheels helps to protect the electronic components form getting damaged as well.

Overall this prototype is a highly functional yet simple and cheap grass cutter which is practical for daily rough usage with minimum maintenance required.

Components Required

1. **Software**
    1. Arduino web editor(IDE)
    2. Fritzing software
    3. Tinkercad
2. **Electronic components**

Sl no.	**Component name**	**quantity**
1	Arduino Uno Board	**2**
2	Bread board	**2**
3	**DC motor**	**4**
4	**L293d**	**2**
5	**Ultrasonic sensor**	**1**
6	**Stepper motor**	**1**
7	**9V Battery**	**2**

3. Hardware

Sl no.	**Component name**	**quantity**
1	**Robot chasis**	**1**
2	**Wheels**	**4**
3	**Tyre**	**4**
4	**X type cross holder**	**1**
5	**Cutting blade**	**1**
6	**Ultrasonic sensor holder**	**1**
7	**Nuts and bolts**	**1 box**