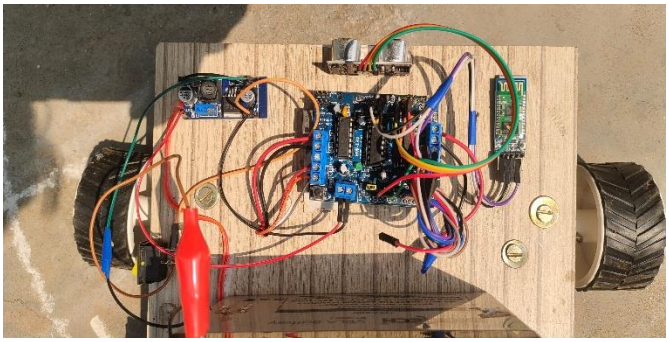
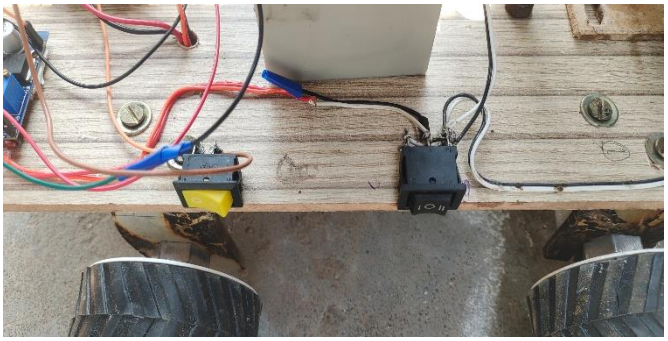
Fabrication Pics/video URL's:

The fabrication process of the **Automated Seed Sowing Machine** involved designing, assembling, and testing various mechanical and electronic components. The chassis, seed dispensing unit, ploughing mechanism, and levelling system were carefully integrated to ensure efficient operation. Below are the images and videos showcasing different stages of the fabrication process, from initial assembly to final testing.

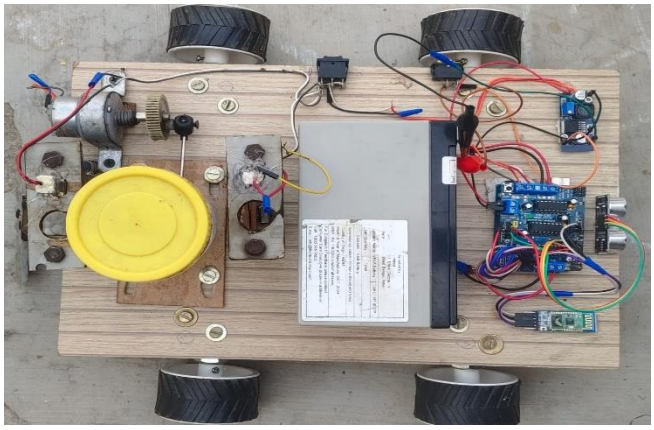


Connections

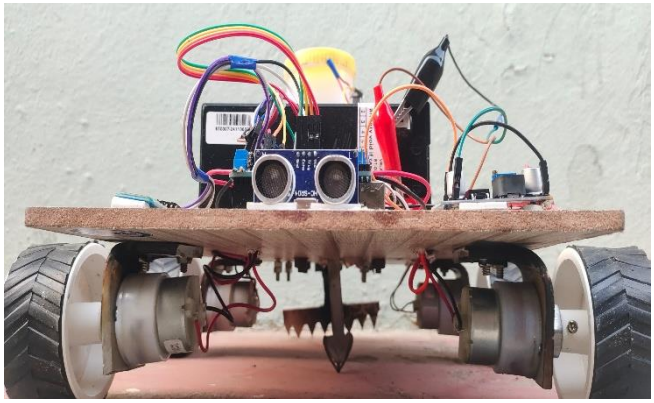
Container



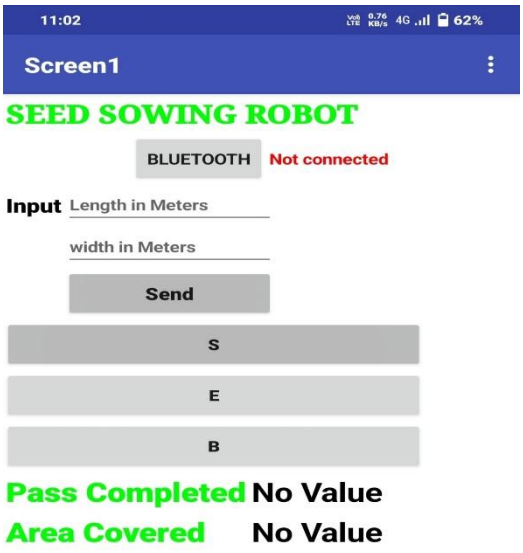
Switches



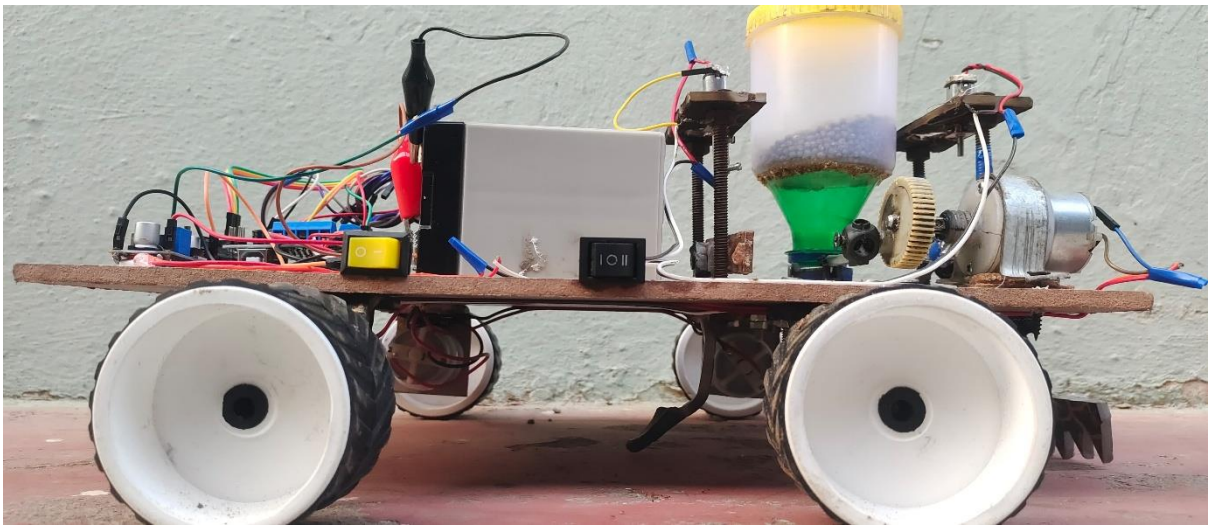
Top View



Front View



App Frontend



Side View

Nut and Screw Mechanism – Upward and Downward Motion:

The nut and screw mechanism plays a crucial role in the automated seed sowing machine, enabling precise upward and downward movement of the ploughing and levelling units. As the machine starts, the ploughing and the levelling units moves downward to loosen the soil, creating a suitable environment for seed deposition. Once the seeds are dropped, the levelling unit cover the soil efficiently. This entire motion is controlled using a nut and screw mechanism, ensuring smooth and reliable operation throughout the sowing process.

Here is the video link:

https://drive.google.com/file/d/1r0I-R5tKIe3CuKXeNEOJSYxvH78M8fy6/view?usp=drivesdk

Slider Crank Mechanism for Controlling Seed Flow:

The slider crank mechanism is responsible for regulating the seed flow in the automated seed sowing machine. This mechanism activates when the machine starts and stops automatically when the ultrasonic sensor detects an obstacle, ensuring precise seed dispensing. The seed container has a small hole sized to match the seeds, allowing controlled seed flow. As the slider crank mechanism operates, it generates vibrations that gradually move the seeds through the hole, ensuring uniform distribution. When the mechanism stops, the vibrations cease, preventing further seed movement. Additionally, the seed container is replaceable, making it adaptable for different seed types by changing the hole size accordingly.

Here is the video link:

https://drive.google.com/file/d/1r6wAAE4UIv56zi0MTuj_aQ756yaT164Y/view?usp=drivesdk

Testing of the Automated Seed Sowing Machine:

The automated seed sowing machine was tested to ensure smooth operation. The machine connects via Bluetooth using a customized MIT App Inventor application. Initially, the app displays a red "Disconnected" status, which turns green upon successful connection. The machine starts when the Start button is clicked and automatically stops upon detecting an obstacle, pausing both the movement and the seeding process. Once the obstacle is cleared, the machine resumes its operation.

Additionally, the Back button allows the machine to move in reverse, enabling repositioning when needed. When the End button is clicked, the entire operation stops, ensuring that all processes, including seeding and movement, halt completely.

Here is the video link:

https://drive.google.com/file/d/1r46IwjCguAD91lG4q-IcyI42myqCe1oD/view?usp=drivesdk