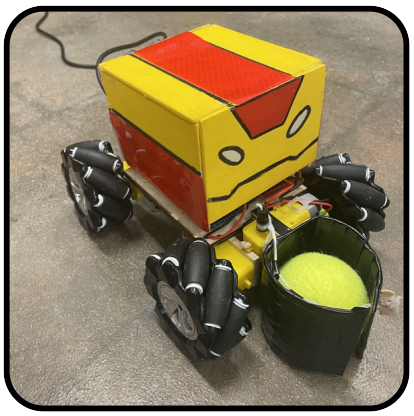
R2R TEAM 1 - ROBOTNEEKS

Robustness

To protect the electronics of the robot, we used an easily replaceable **paddle-stick "Iron-Man" themed casing**. Maintenance on the electronics can be easily performed by removing and replacing the casing, adding to the robustness of the build.

Furthermore, the **large wheels** assist the robot in keeping it stable and to climb stairs, and the **plywood chassis** effectively houses the electronic components enabling the robot to function in most environments and traverse through rough terrain.

Additionally, the **code is robust** in that it has been written and tested to ensure that errors are handled effectively. Moreover, the code is modular and optimised, making it easy to understand and perform maintenance.



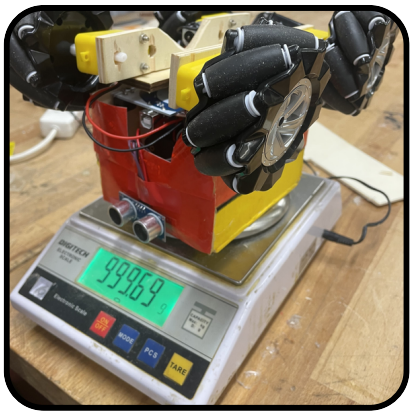
Aesthetic Appeal

A **sleek and compact design** is used on the robot, such a design allows the robot more agile and manoeuvrable in tight spaces. Furthermore, **the robot is conspicuous**. In a rescue context, the robot can be easily spotted by victims due to its conspicuous design, with **reflective taping** on the casing enabling the **robot to be seen in the dark**. With an **"Iron-Man" themed casing** for the electronics, victims in rescue contexts can rest assured that help is on the way when they see **the robot superhero!**

Engineering Quality

In accordance with the **size and weight constraints** set by our client, in its fully extended position, our robot is 180 mm wide and 145 mm tall, and is thus able to fit inside a cylinder 250 mm in both diameter and height and it also weighs about 999.97 g which is less than 1000 g.

With an **efficient UI and simple control commands**, the robot is easily able to be controlled by the operator.



Innovation

Instead of 3D printing a plastic claw or purchasing an expensive Arduino claw, **our claw utilises a string and paddle-stick mechanic** that is connected to a DC motor that can close and contain the tennis ball on command. As string and paddle sticks are both cheap and recyclable, the claw is not only innovative, but also **sustainable and an inexpensive component** of the robot to replicate.