TAHMO SENSOR DESIGN COMPETITION
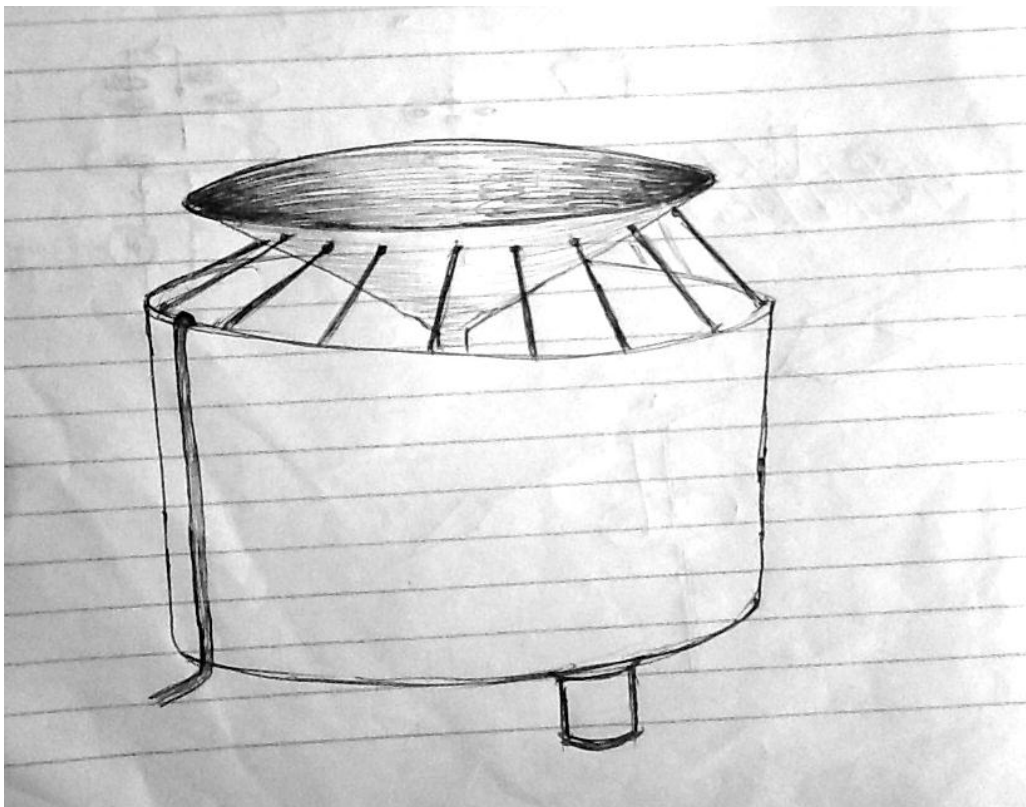
AUTOMATED RAIN GAUGE

TEAM MEMBERS

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EXECUTIVE SUMMARY

Automated rain gauge

The principle of a simple rain gauge applies to this (we don't need to re-invent the wheel). This design is modelled in such a way that the user would not need to physically see the rain gauge before he gets his readings on the amount of rainfall in that area. It is also projected in this design would be able to empty itself at a certain level thereby giving the user rest of mind and spare time, saving him the stress of going to take readings from the equipment directly.

This has been made feasible by applying the mechanism of a water level sensor to the equipment, whose output could be terminated at any desired location. Also a floater system has been integrated into the equipment to allow for self-drainage of the equipment to prevent an overflow.

Working operations of the automated rain gauge
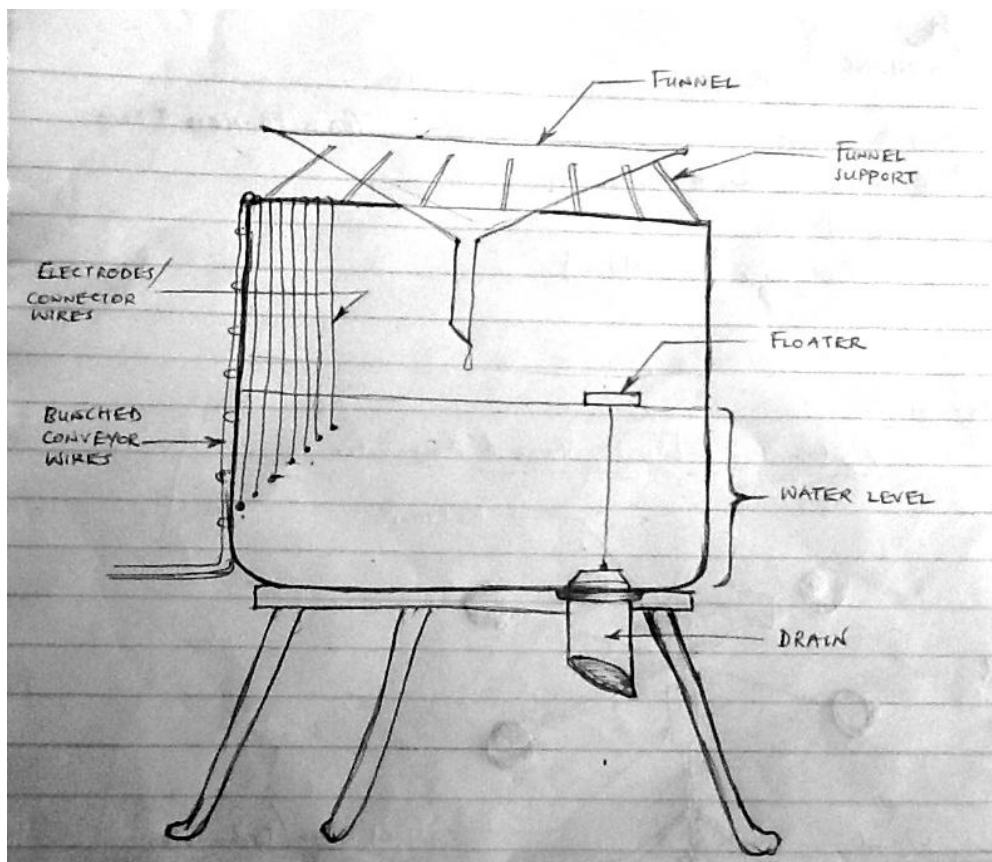
Schematic diagram of the automated rain gauge

Here, the container is drilled at the bottom for water outlet, which works with a floater system for its self-drainage when it gets to the desired point of the user. The floater system uses a light weight object at the top which floats on water attached to a thread and then the other end of the thread is connected to the cover of the water outlet

On the body of the container (inside), we have connector wires streamlined or attached at different water indicating levels and having all their ground wires connected to the base of the container to complete the circuit. The other ends of the wire are the connectors for the water level sensor.

List of materials needed

Water container

Funnel

Connector wires

Thread

Outlet cover

9v power source

 10 bc547 npn transistor

10 LED's

Vero board

10 470k resistors

10 470ohm resistors

10 33ohm resistors