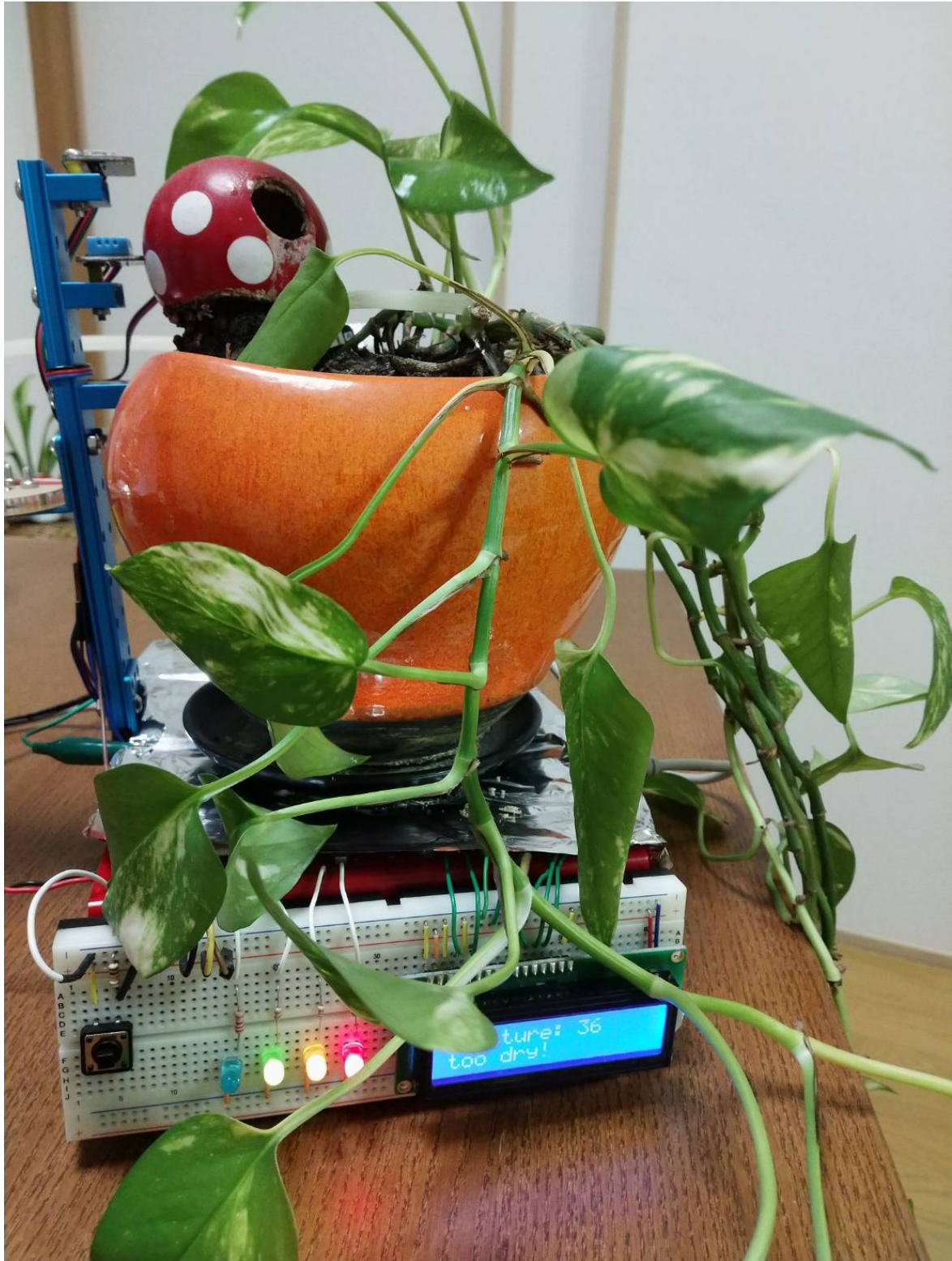# Automatic plant tutor

Main concept

The idea is to build an automatic plant base station that controls all the parameters affecting the plant life and gives the owner direct information.

Moreover, with the help of a touch detection system and two motorized wheels, the base station provides a basic interaction platform for the users, motivating them to go and check on the plant.

Specifications

The base station is equipped with several sensors and actuators.

- Plant basic life affecting parameters

    - Ambient light sensors

    - Air humidity sensors

    - Ambient temperature sensors

    - Soil moisture sensors

    - Blue led warning light – ambient temperature insufficient or in excess

    - Green led warning light – ambient light insufficient or in excess

    - Yellow led warning light – air humidity insufficient or in excess

    - Red led warning light – soil moisture insufficient or in excess

    - LCD – parameters current values

    - Water pump

- Plant interaction sensor

    - Touch capacitive base

    - Motors

Working conditions

The plant is placed on the base station, the soil moisture sensor is gently inserted in the soil (if any), the water pump tube is positioned on the vase and the water reservoir is filled up.

If a parameter is outside the acceptable range for the plant, the corresponding led will switch on. Moreover, if the soil moisture sensor detects dry soil, also the water pump will turn on automatically.

If the user touches the base station, the motors will move the wheels slightly back and forth to acknowledge the touch and give the impression that the plant is greeting the user.
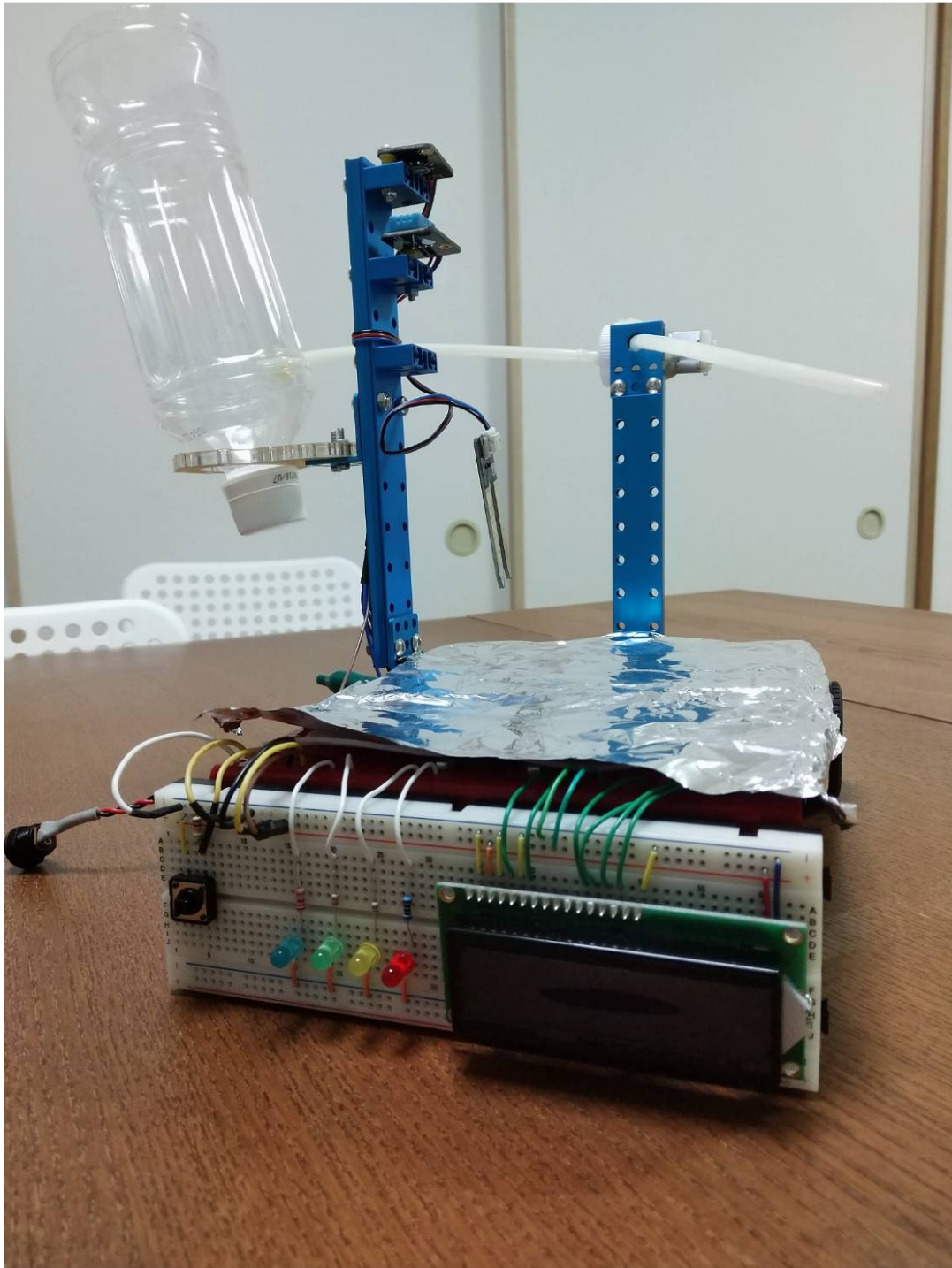
Pressing the button will rotate the LCD screen through the parameters values.

Fig. 1 The automatic base station