



NUTRITECH POT

A self-watering
and fertilizing
plant pot

EN 1190 PROJECT PROPOSAL
BY
GROUP POWER ON

GROUP MEMBERS:
KODIKARA U.S.S(210293K)
KODITHUWAKKU J.N(210294N)
SEHARA G.M.M(210583B)

Problem Identification

In recent times, there has been an increasing trend of people planting and maintaining their own gardens at their residences. However, the successful growth and maintenance of plants require consistent care, including proper watering, adequate sunlight, and fertilization. Despite the desire to undertake gardening activities, many individuals have difficulty allocating the necessary time due to their busy schedules. Consequently, they find it challenging to provide the required level of care for their plants, which ultimately hinders their ability to pursue gardening as a hobby or means of improving their home environment.

Solution

Instead of the manual care of the plant, we proposed an engineering design project involving developing a smart pot that can detect the water and fertilizer levels of the soil and automatically add them as needed to meet the requirements of the plant. Furthermore, a dedicated application will be developed to enable monitoring of the plant's condition, which will be connected to the smart pot. Through this application, users will be able to view information regarding soil moisture, as well as receive alerts and notifications when adjustments are needed. This will provide a convenient and accessible means for users to monitor and manage the health of their plants, even when they are not physically present.

Methodology & Scope

We have incorporated standardized water and fertilizer levels into the smart pot. Should the need arise, we can adjust these levels to suit the requirements of a specific plant. The smart pot features a small tank that is filled with fertilizer liquid. The soil moisture sensor integrated within the smart pot monitors the moisture levels in the soil. If the water or fertilizer levels are found to be below the preset standard levels, the tank automatically opens to add the solution and maintain the standard levels.

Furthermore, there is a sunlight-measuring feature for the smart pot using IR sensors. This feature will enable the smart pot to measure the amount of sunlight the plant is receiving. If the plant is found to be lacking sufficient sunlight, a notification will be sent to the owner to take appropriate action. Additionally, the smart pot will notify the owner when the liquid level in the tank is low, prompting them to refill the tank.