

Development of Automated Mini Greenhouse Embedded with Arduino

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Abstract: *Many apartment dwellers dream of growing plants in their own home. But, they are limited with the space and time for planting a fresh healthy plant in their home. However, it doesn't have to be a dream anymore as we are introducing a portable mini greenhouse to accommodate this community. A greenhouse is used to grow plants such as flowers, vegetables and fruits under the controlled climatic conditions for efficient production, forms an important part of the agriculture and horticulture sectors. A mini greenhouse also has such quality with the extra advantages as it comes in compact sizes which fit in the apartment lifestyles. The mini greenhouse proposed by this project uses an automatic monitoring system to monitor the temperature, humidity and water supply for the plant of the mini greenhouse. This will accommodate the user to monitor their greenhouse remotely. This automated greenhouse monitoring system also collects the data from the greenhouse measured by the sensors and the results will be shown on the LCD screen for easy monitoring purposes. It is easy to install yet comes with low cost monitoring system. In addition, it will provide more convenient and low maintenance system for the mini greenhouse user who desires to plant at home but has a very limited fund and space in their living area.*

Keywords: Mini Greenhouse System, Automated Green House, Arduino, Sensors

1. Introduction

It's well-known that having plants at the home is good for health. It also serves as peace and calm sense to the homeowner. However, not everybody is gifted with such space and time for the planting purposes. The apartment dwellers are among the community who has limited space and time for planting fresh plant at their home. However, it doesn't have to be a dream anymore as we are introducing a portable mini greenhouse to accommodate this community. A greenhouse is used to grow plants such as flowers, vegetables and fruits under the controlled climatic conditions for efficient production, forms an important part of the agriculture and horticulture sectors. A mini greenhouse also has such quality with the extra advantages as it comes in compact sizes which fit in the apartment lifestyles. The mini greenhouse proposed by this project uses an automatic monitoring system to monitor the temperature, humidity and water supply for the plant of the mini greenhouse. This will accommodate the user to monitor their greenhouse remotely. This automated greenhouse monitoring system also collects the data from the greenhouse measured by the sensors and the results will be shown on the LCD screen for easy monitoring purposes. It is easy to install yet comes with low cost monitoring system.

2. Objective

The objective of this project is to develop an automated mini greenhouse with a low cost and effective monitoring system to aid apartment dwellers dream of growing plants in their own home. The automated mini greenhouse should simultaneously address the issues of air flow, water, light and humidity control of the greenhouse.

3. Novelty

The automated greenhouse embedded with Arduino is designed to accommodate apartment community due to their limited space and time for planting a fresh healthy plant. The plants will be able to get enough source of water when the watering system is triggered based on the humidity and temperature of the surrounding. Proper ventilation system help provide fresh air and good airflow for plants as the mini fan allows for the removal of excessive heat. Overall this automated mini greenhouse is cheaper to install, easier to maintain and last a long time compared to current greenhouse available in the market.

4. Usefulness

The automated mini greenhouse embedded with Arduino is expected to provide assistance to the apartment community who desires to plant at home but has a very limited fund and space in their living area. The automated system also is believed can assist the user for remotely control the needs for the plant such as water, light and humidity control via the automated system designed to the mini greenhouse.

5. Conclusion

With the invention of this automated mini greenhouse, many apartment dwellers dream of growing plants in their own home can be fulfilled. The mini greenhouse proposed by this project uses an automatic monitoring system to monitor the temperature, humidity and water supply for the plant of the mini greenhouse. This will accommodate the user to monitor their greenhouse remotely. This automated greenhouse monitoring system also collects the data from the greenhouse measured by the sensors and the results will be shown on the LCD screen for easy monitoring purposes. It is easy to install yet comes with low cost monitoring system. In addition, it will provide more convenient and low maintenance system for the mini greenhouse user who desires to plant at home but has a very limited fund and space in their living area.