

# The 24/7 Gardener.



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## Proposal

This project is an application of green technologies for sustainable living. An indoor garden will be created, where plants (Snake Plant, Peace Lilly and Spider) will help clean and recycle the air. The technological solution will measure the oxygen and carbon dioxide levels in the air, and display this using an android application. Building on this idea, other fruit and vegetables will be grown with the aid of robots to assist with irrigation by using thresholds for dryness and wetness.

This project is broken into 2 parts, the hardware, and the software.

The hardware includes different sensors to measure different quantities in the garden then a native Android app will be built to monitor and display these values of the garden.

An analysis of green technologies based on IOT solutions will be carried to identify potential solutions and features for my project. These include:

1. The Raspberry Pi Powered Garden. (Technovation, n.d.)
2. The Automated Garden System Built Of Raspberry PI For Outdoors or Indoors. (mudpi, n.d.)
3. Smart Home Gardening System Using Raspberry Pi. (P, 2017)

## Technologies

### Hardware Requirements

1. A main mother board e.g. (Raspberry Pi, Arduino).
2. Sensors (light sensor, soil/moisture sensor, CO2 sensor).
3. Water pump.
4. LCD screen.

### Software Requirements

1. Android Studio (Kotlin or Java).
2. Database (Firebase or MongoDB).

## Methodology (Process)

There are many different software lifecycles that could be used in this project, but for the purpose of this document I am going use either Kanban or SCRUM and implement a Trello board to monitor the progress of this project.

The whole idea is that all parts of the project be broken into can smaller tasks where I plan, build, test, and review, then put all finished pieces together at the end to create the finished product.

I will have to create a plan for 14 weeks, design cards and estimate the time of each sprint.

## Bibliography

mudpi, n.d. *Automated-Garden-System-Built-on-RaspberryPi-for-O*. [Online]

Available at: <https://www.instructables.com/Automated-Garden-System-Built-on-RaspberryPi-for-O/>

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P, K. M., 2017. *smart-home-gardening-system-using-raspberry-pi*. [Online]

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