

IOT FARMING AT HOME

MUHAMMAD NOR HAFIZ BIN ABDUL RAHIM MUHAMMAD AFIQ BIN ROSFA

FACULTY OF ELECTRICAL ENGINEERING UNIVERSITI TEKNOLOGI MARA MALAYSIA

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ABSTRACT

search shows that existing farming methods including land farming and hydroponic g are lacking of monitoring system. Therefore, a good monitoring system is eded for easily monitor the plant condition. The main purpose of this project is to esign a hydroponic monitoring system by sensing the water level and also monitoring e temperature and humidity of the surrounding for optimum growth of the plant. In ddition, the project also monitors sunlight intensity for enabling plant to grow faster. The sensors used are DHT11, LDR, and Water level sensor. The sensors are connected to Arduino Mega for data processing and interfacing. The system is connected to the Espresso lite V2 for internet connection. The data obtained is transmitted to the BLYNK app for remote monitoring by the user apart from local monitoring by the LCD display. To achieve this objective, some research and studies has been done in some previous similar project. Based on the review, the methodology that used in this project are divide into two, which is hardware and software parts. Software development includes project simulation and creating source codes for the Arduinobased system. Hardware designs include schematic drawing, PCB manufacturing, and prototype modelling. Both development involves design, experimentation, simulation and construction to get an expected result which meets the project objective. Data analysis for this project will proceed after the completion of the hardware and the software procedure. This is for the purpose to ensure the project can achieve the objective and also to ensure the reliability of the system. The result is the system can be monitored using BLYNK app. The output relay will turn on, activating installed light bulb that supplies auxiliary lighting for the plant growth. The applications for the system is various, including monitoring farms and aquaponics system. User can carry the system anywhere since it is portable. The system can also be mounted on hanging rails for easy movement around the client's premise.

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INTRODUCTION

1.1 INTRODUCTION

The Internet of things is the concept of connecting any device to the Internet. This includes any working device ranging from home appliance to business equipment to any machines. It is embedded with electronics, software, sensors, and network connectivity that enable these objects to collect and exchange data. These devices can be controlled remotely using Internet. The analyst firm Gartner says that by 2020 there will be over 26 billion connected devices. The IOT is a giant network of connected "things" (which also includes people). The relationship will be between peoplepeople, people-things, and things-things. The IOT FARMING AT HOME is the project that minimizes the need for checking the plant condition. It allows the user to monitor plant condition remotely and decide whether to water the plant or and more nutrient to the plant. Apart from the Arduino MEGA itself, The IOT FARMING AT HOME uses light intensity sensor, water level sensor, and humidity-temperature sensor. It is mainly for home and institutional use.

By using the IOT FARMING AT HOME, both overall energy and water wastage will be minimized. This device is versatile, portable and cheap. It detects any changes in the soil. When the changes exceed desired value, the system will send out warning message to the user reminding them to reduce the amount of water on the plant ina particular vase. These messages are sent via an Android application, downloadable on most smartphone.

This project will fulfil everyone needs. It is because everyone needs easy way to take care of their plants. People are getting busier every day, making them easily forgot things. The IOT FARMING AT HOME will definitely save their money and reducing energy waste. It also corresponds with today's technology which are implementing IOT in almost everything.