UNIVERSITI TEKNOLOGI MARA

SAFETY BOX FOR CAMERA AND ELECTRICAL DEVICES

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ABSTRACT

Cameras are one of the most expensive electronic devices and some people use it as a major source of income. Therefore, they must be kept carefully. Most of the new generation camera is not durable and the greatest enemy of a camera are high humidity level. Other than that, because of unreasonable prices even for second-hand cameras and lenses. These items are mostly will be stolen or robbed. With the emergence of the computational era, the old storage box can be improved by using IoT such as Arduino and ESP32. In the current scenario, IoT is considered an active research area for safety features. This study proposed a safety storage box using IoT technology. There will be 2 aims for this study. Which is hardware development that consists of DHT11 sensor to monitor the humidity, a Keypad for password, RFID for faster access, and a buzzer. While the second part is to alert the box owner if the box is getting vibration meaning it moved using mobile approach. Thus, this system will reduce the risk of cameras getting robbed or infected with fungus.

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CHAPTER 1: INTRODUCTION

1.1 Introduction

Fungus is the biggest enemy of optical products, including cameras and lenses. The fungus will make the picture blurry while eating and destroying the coating of these lenses and the cost of recoating the lenses are super high due to the level of difficulty of doing it. Therefore, to save money to buy greater lenses, photographers should prevent fungus from appearing. Other than that, robbery is also one of the biggest threats to a camera owner. Even second-hand has soaring prices on them. According to a camera specialist, Zamin Omar and [1]. There are a lot of cases that include a huge loss to the camera owner when it comes to camera lenses. The most cases are fungus on the lenses followed by dust and scratches on them. The camera communities around the world suggested using dry boxes for storage purposes. There is a lot of option for dry box such as VAMOS DB-25C. but, the prices are quite high for beginners. Moreover, the box has no safety features, and only a humidity monitoring system is included in the boxes.[1] These days, IoT systems technology can be implemented to overcome this problem [2]. The application of IoT is to assist in developing the system for sending warnings to users. In this study, the storage box based IoT system will be implemented to give a warning to the user if there is a vibration detected by the sensors inside the boxes meaning someone tries to steal it. Besides, it can be used to monitor the humidity and it needs a password or RFID to access the box. Therefore, the purpose of this project is to protect the camera from robbers and avoid fungus from growing on the lenses while reducing the risk of huge money spent on service charges. In this project, a storage box with extra safety feature will be built. With the help of IoT technology, users will get notification if something abnormal happen either to the box or in the box. The main objective of the projects is to open the box using password, RFID or smartphones. While the secondary objective is to activate the buzzer when vibration sensor detects huge vibration.