

UNIVERSITI TEKNOLOGI MARA

**SAVEETHINGS: ARDUINO- BASED TOOLS
TO ALERT AND TRACK LOST ITEMS**

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ABSTRACT

The issues of lost or misplaced valuable items can happen to everyone, it will be difficult to trace or recall where the items are misplaced. This project aims to develop a tracking system that uses Arduino as an IoT Technology to track the location in a mobile platform using GPS to track the location's items. This project also helps the user to track their lost item in the community surrounding. The objectives of this project are to identify the user requirement to design and develop SaveUThings: Arduino - Based tools to track and alert the lost items. This system is developed via IoT with NodeMCU V3 ESP8266 Lolin, Neo6M GPS module, jumper wire, power supply, and mobile application. The methodology developed for this project is up till the testing phase only. The system was developed using IoT NodeMCU ESP8266 as a microcontroller. SaveUThings mobile application will help the user by providing features such as user authentication, GPS, push notifications, update current location, and store location history. The project provides an application that allows for real-time in collecting latitude and longitude of the place and alerts the user. The significance of SaveUThings: Arduino - Based tools to alert and track the lost items, while can also be used by the IoT developer who wants to develop this system into the market by providing the smart device technology for anti-theft technologies. For future work, it is proposed to enhance the tracking features and develop an IoT platform.

Keywords: lost items tracker, Internet of Things, NodeMCU V3 ESP8266 Lolin, Neo6m GPS module, Mobile Application Development Life Cycle, Firebase, Anti-theft technologies

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CHAPTER 1

INTRODUCTION

This chapter focuses on the background of this project. Furthermore, it also has the specific of this project's issue statement, aim, scope, and project significance.

1.1 Project Background

Nowadays, technological advances make life easier to handle during difficult times. As a result of our fast-paced lives, the number of lost and misplaced items is increasing (Saleem Ahmad,2015). Many surveys and research are highlighted to solve the misplaced items. Many Bluetooth devices are effective and affordable for all people to use (Saleem Ahmad, 2015). Losing items, in addition to generating stress and aggravation, can have a significant influence on one's day, with more than 60% of respondents saying that they have been late to work or school owing to hunting for items. Furthermore, nearly half of those polled have missed an appointment or meeting while looking for misplaced items (Calif, 2017).

It's challenging for the user to track their lost items without using any technologies. Internet of Things (IoT) platform to allow data integration and exchange between the computer system and physical devices. Next, the number of IoT devices in use, as well as the number of IoT applications is increasingly growing. Rapid technological advancements and globalization have posed new difficulties to the safeguarding of personal data (Vargo.D,2020).