IoT INTELLIGENT MONEY BOX

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ABSTRACT

Effective money management and instilling saving habits from an early age are crucial for financial well-being. However, the lack of emphasis on saving during childhood and poor money management skills pose significant challenges. In this study, we propose an IoT-based money box system that incorporates automatic recognition of coins and notes. The methodology involves utilizing an Arduino MEGA as a microcontroller along with main sensors such as a Coin Acceptor and a Color Sensor. The system enables real-time monitoring of the money balance and setting goals for savings by using a user interface or a cloud platform. By leveraging IoT technologies, this solution aims to improve money-saving habits and enhance financial management skills. The collected data is processed to provide effective results: the Color Sensor detects notes insertion, the Coin Acceptor detects coin insertion, and the balance is displayed through an LCD and the Blynk app. Through the implementation of automatic recognition and monitoring features, individuals can nurture better saving practices and maintain a track record of their finances. This research contributes to the advancement of IoT-based approaches in promoting responsible financial behaviour and empowering individuals with improved money management skills.

Keywords – IoT, Money Box, Saving Habits, Automatic Recognition, Coin Acceptor, Color Sensor

TABLE OF CONTENT

CHAPTER ONE

INTRODUCTION

1.1   Research Background

Saving money has become increasingly crucial in today's world, yet many individuals encounter difficulties in establishing and maintaining a savings habit. This issue is particularly prevalent in Malaysia, where a significant number of people either save insufficiently or not at all. While limited financial resources and a lack of knowledge on effective saving strategies contribute to this challenge, the absence of a savings habit stands out as a significant factor.

Forming habits is a complex process that requires time and effort, often presenting obstacles when attempting to break long-standing patterns [1]–[3]. However, technological advancements offer promising opportunities to simplify and facilitate the saving process. In line with this objective, the project focuses on the development of an IoT-based smart money box that aims to cultivate and enhance individuals' savings habits.

The proposed smart money box incorporates cutting- edge features, including a color sensor and coin acceptor, to automatically recognize and differentiate various denominations of coins and notes. This information is seamlessly transmitted to the user's mobile phone, enabling real-time tracking of savings progress. By providing users with immediate insights into their monthly savings, the smart money box empowers individuals to take active control over their financial goals and expenditures.

Through the utilization of IoT technologies, the project strives to bridge the gap between the challenges of saving money and the ease of monitoring and tracking savings. By harnessing the potential of smart devices and seamless connectivity, the aim is to foster a more disciplined and informed approach to personal finance. Ultimately, the project seeks to empower individuals in cultivating a strong savings habit and achieving their financial aspirations.

1