Chapter 12

# An Energy-Efficient Keyless Approach to Home Security Using Internet of Things

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## ABSTRACT

*The primary goal of the chapter is to modernize the security requirements for smart homes while building a complete home security system based on the internet of things. This system provides better security and dependability at a lower cost when compared to other security systems. Using the registered data to unlock the door increases security by preventing unauthorized unlocking. Security is ensured using two different techniques: first, the user can utilize facial recognition technology; second, they can provide access using a control app. The system provides the user with safer and more secure locking and unlocking technologies than the traditional technique.*

## INTRODUCTION

The Internet of Things, or IoT, is a network of connected physical things that can exchange information and communicate with one another without a person's help. Since it enables us to gather data from various sources, such as people, animals, cars,

and kitchen appliances, IoT has been formally referred to as an "Infrastructure of Information Society." Therefore, any physical object that can be given an IP address to facilitate data transfer across a network may be regarded as a member of the IoT system by adding electronic hardware like sensors, software, and networking tools.

The IoT differs from the Internet in that it makes it possible for everyday items with embedded circuits to interact and communicate with one another using the Internet's pre-existing infrastructure. Peter T Lewis first mentioned the concept of the "Internet of Things" in his speech to the Federal Communications Commission (FCC) in 1985, and it was then given that name. The IoT has grown significantly since that time. Currently, there are more than 12 billion linked devices, and by the end of 2020, experts expect that number to rise to 50 billion. The IoT infrastructure's real-time information collection and processing capabilities, which rely on accurate sensors and seamless connection, let people make smart decisions. Both businesses and consumers have profited from the development of IoT. By offering value-added services that enhance and lengthen the lifespan of their products or services, manufacturers may gain a greater understanding of how their products are used and how they function in the real world as well as boost their revenue. For a more personalized and effective user experience, consumers, on the other hand, have the choice to combine and control several devices.

## Overview

As we all know, automation is taking over every aspect of life. The notion of automation is only one of the amazing discoveries that man, with his intellect, is always behind. As a result, the proposed paper is working to develop a marvellous solution that encourages keyless entry into your lovely homes. Deep learning and the internet of things help make keyless technology viable. Using a Raspberry Pi, this unlocking may be accomplished as a face recognition and smartphone app. The project places a strong emphasis on the concept of smart keyless home security. The most popular locking and unlocking method is the actual key, and it is all mechanical in nature. It is challenging for the resident when the key is lost or stolen. When employees at a company are required to keep numerous keys for various doors, the issue with handling keys gets worse. Therefore, keyless technology is being implemented as a solution to this issue. It is more flexible and practical because it allows users to lock and unlock the doors. The majority of keyless entry locks are just as simple to install—if not simpler—than their conventional equivalents. It gives users the option to remotely lock and unlock their houses, increasing flexibility and convenience.

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