Selected Readings in COMPUTING AND TELECOMMUNICATIONS

Editors
Mira Kartiwi
Teddy Surya Gunawan
Aisha Hassan Abdalla Hashim

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10. DESIGN AND DEVELOPMENT OF RFID SECURITY MODEL

Ahmed Wathik Naji and Fatema-Tuz-Zohra

ABSTRACT

RFID stands for Radio Frequency Identification, a technology that has been used for many years in stock tracking and secure access applications. At the most basic level, RFID is a wireless link used to distinctively identify objects. RFID systems use electronic devices called transponders or tags, and readers to communicate. Unidirectional or bidirectional radio signals are used to carry data. Each day millions of securities are breached and electrical energy is wasted, to overcome this, a model needs to be developed that will control the entrance, exit and power supply automatically. In this work a RFID security model has been proposed, developed and implemented. The proposed model is composed of a RFID transponder, reader, and electromagnetic door lock and integrated lighting system. Methodology used is studying the background and theory of the project, propose the design, construct and implement the model. As an outcome, the security model allows only authentic users inside a room turning lights on for them, and lights are turned off when they exit. The principal objectives of the project have been fulfilled, the model is functional but it is always open to more contributions.

10.1 INTRODUCTION

RF technology has been involved in markets in various applications such as access controls, sensors, metering applications, payment system, communications and transportation, parcel and document tracking, distribution logistics, automotive systems, livestock/pet tracking and