



# International Journal of Innovative Research in Computer and Communication Engineering

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## A Survey Paper on Smart Library System

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**ABSTRACT** -The Smart Tracker System focuses on more simpler and advanced way to detect the particular object. This is a versatile tracker which will track the location of object of any system like library management system, shopping Malls, Medicals, Hospitals etc. In these existing systems activities like updating information of products, searching for products, updating records of new products in stock is done by manually or it's partially automated process. But due to implementation of SMART TRACKER system, existing system has become fully automated, more efficient. It has taken existing system one step forward.

For demonstration of this idea we have taken a system which is important in our day to day life that is Library management system as a case study. Drawbacks of existing library management system are as manual process of maintaining records, addition of new books, searching of books is completely changed into smart system. In smart tracker system the users are registered by the admin and when next time user comes he will only need to signing his account and search for the book. The location of the particular book will be highlighted, and book will get issued. When new books will be added to library each book will be provided with Smart Card which will have unique code, and the details of the book will be added to that particular card and while issuing book user will only need to swap the card and the book will be issued on particular user's name. If the position of the book will be misplaced the buzzer will beep. If the quantity of the book will get low that time admin will be notified.

So Smart Tracker is more efficient than existing library management system and Malls and Medicals.

**KEYWORDS**:-Smart card, Location Indicator, LED lights, Buzzer.

### I. INTRODUCTION

In Today's world most of things we used in our day to day life are automated system. These things are not only automated but all need these things are to be operated on single click of button. Some of scenarios of these systems are shopping mall, Medical shoppy, super shoppy, Library system, hotels, Hospitals etc. In this system to search a particular object or product is very time consuming job and all other management activities of these system are either done by manually or may be its semi-automated process. What if we get location of searched product on single click?? And managing all other related things in smart way rather than manual work. So to provide a solution we have developed a versatilesmart tracker. A smart trackerwill detect the location of object and highlight that object. All management activities like keeping records of users to whom products are sold as well as quantity of products available, maintenance of products, arrangement of products, and applying dues or fine, searching product, misplaced product etc. which are carried out currently manually or partially automated are turned into a smart system using Smart Tracker. To illustrate the idea of Smart Tracker we have taken a very important thing of student's day to day life Library System. Using Smart tracker we have developed a Smart Library System.

Our tradition attendance monitoring system or we can say in and out entry in the library of the student and teacher staff is manual by entering details in register. To overcome this, our propose system of in and out entry of students and teacher staff will be automatic. For this we are going to use RFID card and UHF reader to detect the RFID tag on the identity card. RFID tag will be read by the UHF reader at the entrance of the library and same for the exit.



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## II. LITERATURE SURVEY

### 1. DESIGN & IMPLEMENTATION OF RFID BASED BOOK TRACKING SYSTEM IN LIBRARY

Abstract: The prime hurdle of user is to find exact title of book in library. The basic reason is wide spread of books or sometimes disordered arrangement in library. To avoid such issue, RFID based book tracking system is designed using PIC microcontroller. In this paper, near field RFID tags are used to locate exact position of books. The implemented system displayed the result on GLCD screen by tracing the shortest path. The main contribution of this work is that, the system is handy, easy to carry, highly accurate and reasonably low priced.

### 2. SMART LIBRARY MANAGEMENT SYSTEM USING RFID

Abstract: Applicability of Radio Frequency Identification (RFID) system which is a new generation of Auto Identification and Data collection technology in a future Smart Library Management System is presented in this paper. It helps to automate business processes and allows identification of large number of tagged objects like books, using radio waves. In existing system barcode and token card system were used. Barcodes have no read/write capabilities; they do not contain any added information such as expiry date etc. and it needs line of sight, less security and it also can easily damage. By using token card system, they are very labour intensive and work process for the librarians was more. By considering the above demerits in the existing systems, the proposed Smart RFID system, which is a wireless non-contact system that uses radio frequency to transfer data from a tag attached to an object, for the purpose of automatic identification and tracking. RFID doesn't need the line of sight, it remove manual book keeping of records, improved utilization of resources like manpower, infrastructure etc. Also less time consumption as line of sight and manual interactions are not needed for RFID Tag reading. RFID based Library Management system would help to allow fast transaction flow for the library and will prove immediate and long term benefits to library in traceability and security.

### 3. IDENTIFICATION OF EMPLOYEES USING RFID IN IE-NTUA7666

Abstract : During the last decade with the rapid increase in indoor wireless communications, location-aware services have received a great deal of attention for commercial, public-safety, and a military application, the greatest challenge associated with indoor positioning methods is moving object data and identification. Mobility tracking and localization are multifaceted problems, which have been studied for a long time in different contexts. Many potential applications in the domain of WSNs require such capabilities. The mobility tracking needs inherent in many surveillance, security and logistic applications. This paper presents the identification of employees in National Technical University in Athens (IE-NTUA), when the employees access to a certain area of the building (enters and leaves to/from the college), Radio Frequency Identification (RFID) applied for identification by offering special badges containing RFIDtags.

### 4. ONLINE PEOPLE TRACKING AND IDENTIFICATION WITH RFID AND KINECT7666

Abstract : We introduce a novel, accurate and practical system for real-time people tracking and identification. We used a Kinect V2 sensor for tracking that generates a body skeleton for up to six people in the view. We perform identification using both Kinect and passive RFID, by first measuring the velocity vector of person's skeleton and of their RFID tag using the position of the RFID reader antennas as reference points and then finding the best match between skeletons and tags. We introduce a method for synchronizing Kinect data, which is captured regularly, with irregular or missing RFID data readouts. Our experiments show centimetre-level people tracking resolution with 80% average identification accuracy for up to six people in indoor environments, which meets the needs of many applications. Our system can preserve user privacy and work with different lighting.

## III. EXISTING SYSTEM APPROACH

In existing system updating records of products as well as users, and other activities such as searching for product, arrangement of products is to be done manually. In existing system, In case of library management system user does his entry in register of records, he searches for particular book he wishes to issue, he goes to librarian and issues the book, and entry of the book is done in register. In case of mall the customers. In short in existing system all the

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process for issuing products requires human efforts. It consumes too much of time as well as it is not safe as anyone can steal the product in case of mall and books in case of library. That means from security point of view existing system is not that useful as well as safe

## IV. PROPOSED SYSTEM APPROACH

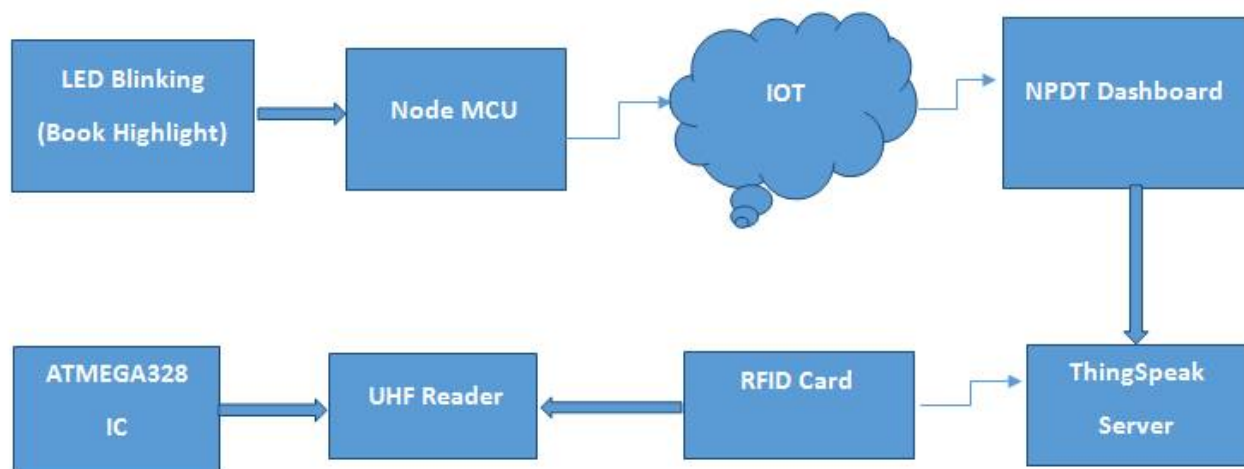


Fig.1 Block Diagram of Proposed System

To make Smart library management system by providing Smart card for each user which will store the details about book and register student/staff and highlight the location of book on particular shelf on which that book is located. It will also notify the admin about the quantity of the book and if the position of the book will be misplaced. Automated I-card should be provided to students and faculty and it has unique ID, entry will be stored on think speak sever.

## V. CONCLUSION

Smart Tracker: Track The World makes user as a smart user by providing smart card which stores book related details

This System provide exact location of search book.

Details of issued book is stored within a card. Librarian will get that details on a single click.

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