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APPLICATION OF RFID TECHNOLOGY IN LIBRARIES AND ROLE OF LIBRARIAN

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ABSTRACT

The lack of libraries would result in significant shortfalls for the organization as well as for society as a whole, as it would impose significant limitations on both of these. In addition to books and other forms of reading material, this policy also covers reading materials such as dictionaries, encyclopaedias, and other sorts of reading material. You have the option of purchasing these items in either printed or electronic version, depending on your own taste. It is necessary that there be a need for the safety of libraries, particularly the preservation of reading material, in light of the growing relevance that libraries play in the process of content modification. This requirement is made urgent by the fact that libraries play an expanding role in the process. As a direct result of this, the current research investigates the use of RFID technology in library settings. Topics covered include its application, its mode of operation, administration, its components, its benefits, its advantages, and its downsides. As a direct result of this, the study was carried out. In the final section of this chapter, a brief explanation of the function that libraries fulfil inside RFID systems is presented.

KEY WORDS: RFID, Technology, Readers, Library, Application

INTRODUCTION

In a number of contexts, the phrase "radio-frequency identification" is referred to by the abbreviation RFID. This would be the automatically identifying system for products in a store's inventory that is based on radio waves and operates electronically. Radio frequency identification (RFID) is a technology that may be used to broadcast data in the form of tags, which can then be read by machines at a later time and location. This is the primary function of an RFID system. This is done so that the system can meet the requirements of each of its many applications, and it is done for that reason. The radio frequency identification (RFID) system is an innovative technology that is receiving recognition in the academic and business communities. These days, books, journals, DVDs, CDs, and other forms of written and recorded media may be found in the millions upon millions in the world's libraries. These libraries also house other sorts of written and recorded media. The upkeep of the resources, management of those resources, storage of those resources and access to those resources when necessary become increasingly difficult for librarians as a direct result of this.

Since its inception in 1970, radio frequency identification (RFID) technology has found widespread application in commercial contexts. In order to be both extremely sensitive and practically useful, RFID tags' modes of operation can either be entirely active or relatively passive. The radio frequency identification (RFID) system is a transportable device that has the capability of reading data from RFID tags. You won't have to worry about buying batteries if you choose for passive tags because they work just fine without them. Radio waves are able to be received and sent by an RFID reader, which is also known as a radio frequency identification reader. The information that is kept on RFID tags has the potential to be encoded if the device is utilized. Because active and semi-passive RFID tags cost a significant amount of money, their application is limited to the transaction of expensive goods only. This is because active RFID tags can read data from semi-passive RFID tags. RFID cataloguing and management systems nearly always employ RFID tags that have a passive mode of operation. This is one of the key elements that led to the growth in popularity of RFID library management, also known as RFID tags in libraries. This was one of the primary factors that contributed to the rise in popularity of RFID library management. In an RFID library system, books and other reading materials are processed via circulation using RFID tags, RFID readers, a computer network, and software. This system also includes additional components. This indicates that they are loaned out and brought back, sorted, and tagged, in addition to undergoing a variety of other processes. In an RFID library, tags equipped with radio frequency identification are fastened to the spines of each book to make

it simple for readers to locate the material they want. The system will search for books on its own and, if it locates them, will automatically identify them. The electronic item surveillance bit that is embedded in the book's tag may be turned on or off by staff members of the library when a customer takes a book to the circulation counter to check out. As soon as another customer checks out the book, the mechanism that tracks its whereabouts will be disabled.

RFID'S STRENGTHS AS A LIBRARY MANAGEMENT TOOL

RFID makes it possible for libraries to save both patrons' time and the time of library employees, creating a situation in which everyone wins. According to the five sutras developed by Dr. Rangnathan, there is also a reduction in the total amount of time spent waiting by both the researcher and the user. There is no need to wait, and the person who is making use of it is not put in any kind of risk. Since there are no lines, there is no need to wait in line to borrow or return anything since there is no need to wait in line. Additionally, the user may check to see whether there are any copies of the book that are currently available. The amount of time that staff members are required to spend keeping track of the books that are checked out and returned has been reduced.

WHAT DOES RFID DO?

By utilizing radio frequency identification, often known as RFID, libraries may be able to automate and streamline the process of book circulation. RFID is an abbreviation that stands for radio frequency identification. This system requires the installation of specialized software in order to function properly. A request to borrow a book has been made, and it can be shown on the screen. The interested party has filed their request. It is possible for an RFID reader to detect which book the reader is looking at if the reader knows the one-of-a-kind identification number of the person looking at the reader. As soon as the RFID system recognizes that a book has a tag attached to it, the monitoring function is disabled and the book is no longer monitored. The surveillance component of the check-in/check-out system is activated when the patron returns the book to the circulation counter where it was first checked out.

RFID LIBRARY MANAGEMENT SYSTEM USE CASES

1. Tagging with RFID Transponders
2. Library Drops
3. As a counterpoint

4. Self-Service Checkout Kiosk for Readers
5. Stock Control

The library's three most important collections are all RFID-enabled

- a. Finds specific reader requests.
- b. Library stock in its whole is being inventoried.
- c. It's possible to look for books that have been misplaced.

6. Protection against Theft

The RFID EAS Gates that have been put all throughout the library, together with the RFID tags that have been strategically placed throughout the collection, are working together to deter theft. An alarm will sound because each lane is approximately one meter long. If it determines that an unchecked item has been transported through a lane that is intended for the transportation of items, the alert will sound.

LIBRARY MANAGEMENT SYSTEM: KEY POINTS

1. RFID can be used in place of Em security tags and barcodes.
2. Self-service check-in/out for customers is streamlined.
3. RFID technology allows for the distribution of audio and video cassettes.
4. Even though RFID may be used for inventory and identification, the IT records are disorganized.
5. A novel method of protecting possessions against theft
6. It uses an open standard and provides assurance for the future.

RFID SYSTEM ELEMENTS

The core of an RFID system consists of four things:

1. Radio frequency identification tags or transponders that have been specifically coded electrically
2. Tags can be read by readers or scanned by sensors.
3. Antenna.
4. Host where the integrated library's interface software is installed.
5. Printing RFID Labels
6. Portable Tag Reader
7. Checking Itself Unit
8. Book Report from the Outside
9. Personnel and Transfer Facility

REASONS WHY LIBRARIES SHOULD USE RFID

The key factors for using RFID technology in library are as follows:

1. Workflow is boosted by RFID since it cuts down on non-value-adding tasks.
2. Staff efficiency can be increased.
3. Enhancements to customer service.
4. It helps in quickly and easily counting stock.
5. Book identification facilitates the shelving process.
6. It's useful for keeping track of where books go.
7. Full automation of the check-in procedure is an EAS that improves the book return system.
8. Book collections may be managed more precisely, leading to a decrease in new book purchases.
9. With RFID, you can track down any object.
10. Managing stock takes much less time now.
11. Even if many items can be checked in and out simultaneously, this does not mean that it is necessarily the case.
12. Items can still be scanned by an RFID reader if they aren't precisely positioned.

RFID'S BENEFITS FOR LIBRARIES

The major benefits by using RFID technology in library are presented herewith:

1. Trustworthiness.
2. Powering self up and down.
3. Improved circulatory system.
4. Very Durable Tags.
5. Inventory management that's been streamlined.
6. Extremely safe environment.
7. Prevention of Theft.
8. Verification of stock levels is simple.
9. Material handling automation.
10. Injuries at the workplace decrease.
11. Cost-cutting technology standards.
12. Errors in shrinkage can be minimized.
13. Transportation of expensive goods is getting better.
14. Book Report from the Outside.

15. It finds books that have been improperly shelved.
16. Money and time is saved on materials management.
17. The circulation of books is handled mechanically.
18. Books that are returned are automatically organized.
19. Precision and effectiveness in tracking stock levels.
20. The strategy behind buying books may be strengthened.
21. RFID tags can be put in very instantly.
22. The RFID system is superior to the current Barcode system.
23. Books are re-tagged with RFID inside.
24. RFID tags can hold 2KB of data, whereas barcodes can store 10-12 digits.

LIBRARIAN'S ROLE

Due to the nature of the technology, librarians find themselves in a problematic ethical position when they are presented with RFID technology. This is the case because of the nature of the technology. This technological innovation is not only a game-changer for librarians, but it is also a game-changer for the safety of library clients and the effectiveness of self-service circulation. Both of these factors have the potential to significantly improve. Both of these facets of one's time spent at the library will undergo major expansions and improvements. As a direct result of this element, the employees working at the library were able to steer clear of the negative outcomes that are associated with engaging in the same activities on a consistent basis, which is a significant plus. In addition to that, it is fitted with technology that is able to detect any attempts that have been made to take it. This makes it extremely difficult to steal. Because a significant number of mundane tasks won't need to be completed any more, conventional librarians won't have nearly as much work to complete, which will result in a significant reduction in their overall workload. The use of radio frequency identification (RFID) technology into a library contributes to the positioning of librarians as trusted and respected community members. Radio frequency identification (RFID) technology, which is predicated on standards that have been created in the past in the field of libraries, is necessary to be acknowledged and utilized by librarians due to the fact that it is required.

CONCLUSION

The investigation of radio frequency identification (RFID) as a possible subject of research is still in its very early phases at this point in time. It is also the most productive and

advantageous piece of technology to use while carrying out the day-to-day tasks that come with working in a library, which encompass a broad variety of activities. This is because it allows for the organization of large amounts of information in a very little amount of space. As part of these obligations, you will be responsible for arranging the library's books and other resources as well as preserving its collection. In addition to that, picking this alternative will allow you to keep more money in your pocket than the other choice will. In recent years, radio frequency identification technology, often known as RFID technology, has virtually taken over the role that was once provided by barcodes. This is because barcodes cannot read radio frequency identification technology. RFID tags have the capability of storing a wide range of data, which may include data pertaining to library patrons, authors, and books, amongst other forms of data. This novel take on a time-honoured approach, which is an efficient replacement for the conventional way of stock control, may be efficiently substituted for the manner by which it is performed. If library patrons were more accountable for their own requirements, librarians would not have to spend as much time on time-consuming activities such as searching for books that had been removed from the library without authorization. Because of this, they would have more time to devote to concentrating on other parts of their professions.

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