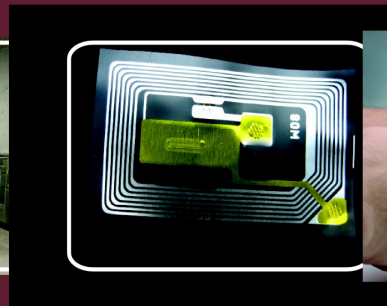


Orizin Technologies

Library Automation Solution





INTRODUCTION

New technologies have always been of interest for libraries, both for the potential of increasing the quality of service and for improving efficiency of operations. At present libraries of all kinds whether public, research or special libraries are overwhelmingly looking forward to adopt new technologies due to its potential for cost savings in the operations and the management of books and patrons. One such technology which is gaining tremendous popularity among the various libraries is RFID technology since it revolutionizes the way a library operates.

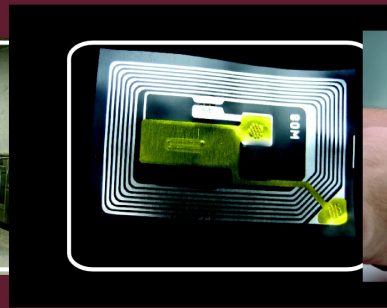
PAIN AREAS

- **Time Consuming Stock Verification Process:** Often in a library where thousands and lakhs of books are involved, manual stock verification becomes a tedious task which may take about 4-5 days to get completed during which the library may have to be shut down for the members leading to inconvenience to them.
- **Weak Security:** Specially during peak hours when there is a lot of crowd in the library some students try to move away with the books without issuing it. It is a pain to keep track of such unauthorized movements.
- **Long queues for book issue and return:** Manual issue and return of books is a slow process leading to long queues in front of the counter during peak hours. This is a waste of time for the member as well as the library staff who can fruitfully utilize this time for their internal processes.
- **Tracking a misplaced book:** It often happens that a book say for example of fiction is wrongly placed in the non - fiction segment or the children's book segment. The patron generally has a tough time locating such misplaced books.
- **Getting information regarding a particular book:** Many a times a member may be looking for a particular book but may not have complete information about it.







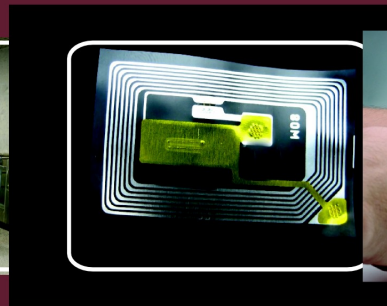
HOW THE TECHNOLOGY WORKS

RFID (Radio Frequency Identification) allows an item, for example a library book, to be tracked and communicated with by radio waves. There are several methods of identification, but the most common is to store a serial number that identifies a person or object, and perhaps other information, on a microchip that is attached to an antenna (the chip and the antenna together are called an RFID transponder or an RFID tag). The antenna enables the chip to transmit the identification information to a reader. The reader converts the radio waves reflected back from the RFID tag into digital information that can then be passed on to computers that can make use of it.



ORIZIN SOLUTION DESIGN

PRODUCTS	METHOD OF USAGE	BENEFITS
RFID TAGS 	Every book is pasted with RFID tags. Tag Id is mapped to book id and its attributes in the database.	It helps in easy identification of books and also in quick inventory management.
HAND HELD READER 	The portable handheld reader can be moved along the items on the shelves without touching them.	<ol style="list-style-type: none"> 1.It will screen the complete book collection on the shelves thus helping in inventory management. 2.It will help search for a misplaced book. 3.It can also help in locating any particular book requested.
GATE ANTENNA 	Two pedestals with internal RFID sensor. Installed at exit gates.	It prevents any unauthorized movement of books out of the library thus eliminating theft.
KIOSK 	With an inbuilt RFID sensor, it can sense any product taken near by and can display related information like name of book, author, category of book etc.	Works as an independent sales personnel giving all product information to customers. Helps you to manage customers in absence of library staff. Patrons can issue or renew the books without the need of the library staff.
BOOK DROP BOX	Book Drop Box is a machine with a slot with a RFID reader integrated in it. The user can drop the books he is supposed to return to the library and get an automated receipt showing how many and which books have been returned.	It avoids long queues at the book return counter during peak hours thus leading to increased customer satisfaction.
CUSTOMIZED BOOK STICKERS	Comes with self-adhesive and placed on tags.	Gives protection to tags and prevents tampering. Gives a feeling of personalization to the library.



BENEFITS OF RFID IN LIBRARIES

1. **High speed inventory:** A unique advantage of RFID systems is their ability to scan books on the shelves without tipping them out or removing them. A hand-held inventory reader can be moved rapidly across a shelf of books to read all of the unique identification information. Using wireless technology, it is possible not only to update the inventory, but also to identify items, which are out of proper order.
2. **Self check in and check out:** It helps patrons to get their books issued or returned without the help of the library staff. This reduces patron queuing and improves productivity.
3. **High Security:** The gate antennas provided at the entry/exit points will prevent any unauthorized movement of books out of the library thus ensuring high security and eliminating loss due to shrinkage and theft. In case any patron tries to walk away with a book without properly issuing an alarm would be raised at the exit gate.
4. **Book Drop Box for book return:** Since a drop box allows patrons to return the books and get an automated receipt without the help of a library staff, it helps the library staff to contribute that time to more productive duties. It leads to cutting of queues enhancing customer satisfaction as well.
5. **Patron Experience:** The biggest advantage that an automated library holds is increased patron satisfaction. Tracking books is no longer a pain for the patron. The patron has a pleasant experience when he walks in a library that is completely automated with smooth work-flows and no queues at the book issue counter.
6. **Image Upliftment:** Smooth work-flows and increased patron satisfaction helps in uplifting the image of the library and hence the institution among all other leading libraries of the country.
7. **Tag life:** RFID tags last longer than barcodes because the technology does not require line-of-sight. Most RFID vendors claim a minimum of 100,000 transactions before a tag may need to be replaced.

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