

USE OF BARCODE FOR COLLEGE LIBRARY AND INFORMATION CENTERS

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Abstract

The library is one of the pillars of any academic institution. Now a day ICT (Information and Communications Technology) growing vastly in every sector due to which every sector trying to automate their system among that library is also one. In era of ICT library and information center need new tools that will allow them to increase their productivity and improve user service without less man power. The use of barcodes for faster library services is time-tested and used by ICT equipped libraries in our country. The application of barcode technology in library and information center for distribution system is most successful due to its properties of speed, accuracy and reliability. Even though now its old technique but till not used by many libraries and information centers. This article explains the description of the uses of Barcode technology in libraries, its working mechanism with its advantages and disadvantages and also to create alertness among the librarians to use Barcode technology in the library.

Key word: Barcode technology, Library, Barcode scanner.

Introduction

In recent time, libraries and Information centers are facing lots of changes due to rapid growth of field of ICT which make old methods of distribution as out of date. In today's era of ICT computerization, automation of libraries is growing demand for improved facilities to users. Day by day Library materials are also changing to the various digital formats from the traditional print formats. In these circumstances, Barcode technology plays an important role in automating the functions of the library, especially the circulation system process. Barcoding is generating codified information with help of computer aids, which is then printed for later applications. Application of Barcode increases the speed as well as accuracy in operations, it is a simple and inexpensive method of encoding text information that is easily read by inexpensive electronic readers. Bar Coding works in a data transfer technique in synchronization with software & its database(s). Barcodes are systematically represented data by varying the width & spacing of parallel lines which referred as One Dimensional and Two Dimensional Codes. A Barcode is combination of a series of parallel, adjacent bars and spaces. A Barcode reader analyze a Barcode by scanning a light source across the Barcode and calculating the intensity of light replicated back by the white spaces. The pattern of replicated light is identified with a photodiode which produces an electronic signal that

precisely matches the printed Barcode pattern. This signal is then construed back to the unique data by inexpensive electronic circuits. According to studies performed by Rahaman (2016) Barcode, QR code and RFID are becoming very useful technology not only to serve the users but also valuable for library security. Islam and Shuva (2010) performed a study to explore the usage and applications of Barcode technologies for knowing merits and demerits of Barcode technologies in the library.

About Barcode Technology

A Barcode is in the form of a square or rectangular image containing a series of black lines and white spaces of changeable widths. It follows a set of algorithms which are printed on a commodity and machine-readable. It is considered as information in a pictographic pattern encoded by a machine.

Barcode provides an accurate and timely support of data requirements for complicated management systems. Together, barcode technology and computer application software improve performance, efficiency, and effectiveness. A linear barcode is a binary code (1 and 0). A barcode scanner reads this code. The most common type of barcode scanner is a laser barcode scanner. In a barcode, white gaps are called inter-character gaps, while bars are the darker and non-reflective elements of the barcode. The space is known as the reflective element of the barcode. Each barcode represents a number. A start character is a special pattern used to identify the beginning of a barcode symbol. A stop character is a special pattern used to identify the end of a barcode symbol. 1D (1-Dimensional) and 2D (2-Dimensional) are the two types of barcodes. "1D" type of barcode is used for products like groceries, pens, and electronic equipment, etc., while "2D" type of barcode stores more data per unit area as compared to 1-D barcode used in the Paytm App.

Use of barcode technology for Library Services

There is knowledge that a lot of benefits of using a Barcode system in libraries are few of them enlisted below,

- Computerized circulation system and application of barcode
- Use of barcode system for Security Check
- Identification of membership at the gate
- Use of barcode system for monitoring Attendance
- Issue of No Dues Certificate
- For Stock Verification and cross-checking
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HOW THE USE OF BAR CODES ARE SIGNIFICANT TO LIBRARIES The significance of Bar codes in Libraries is to achieve greater efficiency and accuracy in following Key Areas:

A. Accession: This is the initial phase where by a new Book/Journal/Magazine etc. is introduced into existing stock. After acquiring the material a unique accession number assigned to it. After record is created on a database, Bar code is generated & pasted on each & every piece of stock. Same procedure is adopted for Patron's Id cards or Library Cards.

B. Circulation: Circulation is the most important function of Library. With the help of Bar codes any Library material can be Issued/Renewed or Returned from Patron within Friction of Seconds hence saves the time of user and saves the time of Library staff & eliminates the possibilities of error creates from manual entry system. The details regarding transaction are recorded in the system.

C. Stock Verification: The traditional system of stock verification involves the Library personnel going around to each of the stock where the books are placed and taking note of all available books. This tabulated data is compiled along with the books already issued to find the final stock position. This process requires lot of mental pressure and consumes lot of man hours. Bar codes make this process of Stock verification much simpler & time effective. By using Hand Held terminals attached to a Bar code reader the verifier revolves around to each stack and scan the books. This data can be downloaded to the computer & after process it would give the details of the Stock position i.e. Book Issued, Books on Stack room etc. The discrepancies would give the details of missing books & list can be prepared for further procedure.

ADVANTAGE OF BAR CODING

The use of Bar code technology increases efficiency and reduces human errors as compared with manual data entry system. It increases the speed of operation in Circulation System. Some of the advantages of Bar code technology using in library is as follows:

It increases accuracy of Data Input (Almost Error Free).

It improves efficiency of Library staff and quality of service.

It increases user satisfaction & improves the image of Library.

It provides reliable statistics for Management Information System (MIS)

It provides real time data collection. F. It saves the time of the reader/user.

Barcodes eliminate the possibility of human error in the circulation section of the library

Barcodes are inexpensive to design and print. Generally, they cost mere pennies, regardless of their purpose, or where they will be affixed.

Barcodes are extremely versatile. They can be used for any kind of necessary data collection in the library.

Library material control improves. Because Barcodes make it possible to track library materials so precisely.

Data obtained through Barcodes are available rapidly. Since the information is scanned directly into the server, it is ready almost instantaneously.

Barcodes promote better decision making. Because data is obtained rapidly and accurately, it is possible to make more informed decisions. Better decision making ultimately saves both time and money.

Disadvantages of Barcode technology in the library

They are very labour intensive; as they must be scanned individually.

Barcodes are more easily damaged; as the line of sight is needed to scan, the printed Barcode has to be exposed on the outside of the library materials.

If a Barcode is ripped or damaged there is no way to scan the library materials.

Restricted traceability.

Susceptible to environmental damage.

Prone to Human Error

Conclusion

Implications of automated and barcode technology is one of the best techniques to minimize the time taken at the circulation center. Barcoding by itself is not system but an identification tool that provides an accurate and timely support of the data requirement for the sophisticated management systems. Barcode usage increases accuracy in the data collection, save time of the users and the staff and improves efficiency in various library operations. Every library needs the application of new technology to develop its existing methods. This time thus saved can be utilized for developing advance and additional techniques in the library. It minimizes errors and increases the efficiency at the circulation desk. It also reduces the operational cost by eliminating book cards and book pockets. Barcoded labels with both accession and call numbers on it can also be used as a book tag. Contribution of barcode technology with computer and application software improves performance and efficiency in various library operations.

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