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Stock verification via new media

Arun Bhimrao Hambarde^{1,*}

¹Dept. of Library, Swami Ramanand Teerth Marathwada University, Nanded, Maharashtra, India



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ABSTRACT

Any library needs to be updated with reading collection as well as services to serve the user community. For this purpose, libraries are procuring books as well as non-book materials. Occasionally libraries may accept books on gratis from the donors. But it is essential to test whether this collection is integral or reduced, such as book theft or any other natural reasons like damage, etc. This is where stock verification is required. Stock verification is an important annual event in any library. This technique is used in any library for entails scanning the data with a barcode scanner, matching the scanned data with the library database, and creating a report using the MS Excel and any LMS, as described here. Generally during the summer break in May and June, the library undertakes a stock verification of its holdings. The limitations of traditional stock verification methods are also discussed in the study.

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1. Introduction

Earlier, most of the libraries were conceived of as a storage facilities for books. The books in the libraries were preserved under lock and key and could not be borrowed; they were only used for reference in the libraries' reading section. As a result, book loss was extremely unlikely in certain situations. Some libraries gives partially/fully free access to the user in the lending section. It is unavoidable that books will be misplaced. Periodic stock verification is required to determine the number of volumes lost and to take appropriate precautions. Borrowers are pleased to return their borrowed books before stock verification, and the library is temporarily closed to the public during the verification period. Any library management software and barcode technologies are used to verify the collection. The stock verification procedure in the library begins with the capturing of data using a barcode scanner android app i.e. 'Barcode to sheet'.

* Corresponding author.

E-mail address: hambarde22@gmail.com (A. B. Hambarde).

The scanned data by each employee is compiled and then compared to the library database, and a list of missing accession numbers is generated and presented to the head as well as the library committee for consideration. Stock verification of books is an annual operation that must be completed.

2. Procedures of Conducting Library Stock Verification

AS PER GFR 2005 Rule 194. Physical verification of Library books:

1. Complete physical verification of books should be done every year in case of libraries having not more than twenty thousand volumes. For libraries having more than twenty thousand volumes and up to fifty thousand volumes, such verification should be done at least once in 3 years. Sample physical verification at intervals of not more than 3 years should be done in the case of libraries having more than fifty thousand volumes. In case such verification reveals unusual or

unreasonable shortages, complete verification shall be done.

2. Loss of 5 volumes per one thousand volumes of books issued/consulted in a year may be taken as reasonable provided such losses are not attributable to dishonesty or negligence. However, loss of a book of a value exceeding Rs. 1,000/- (Rupees One thousand only) and rare books irrespective of value shall invariably be investigated and appropriate action is taken.

3. Objective and Scope of the Study

The present research paper describes the new media of stock verification and their limitations with importance on the stock verification process using bar code technology with android mobile app and MS-Excel software for reporting. Total library collection in any library includes Books (lending and reference), Special collections, Periodical Bound Volumes, Ph.D. Thesis, and Rare books can be included. For stock verification, all the categories of document collection except newspapers can be taken into consideration. The Stock verification can be done by professional and non-professional with the help of other staff of the library.

3.1. Stock verification and its advantages

Stock verification advantages for the good administration of library are as follows.

1. Identification of lost books, long overdue books, missing books in the Library.
2. Identification of books that must binding or replacement.
3. Identification of titles that are less used or old editions or old curriculum-related documents.
4. Thorough dusting and cleaning of racks, shelves, and books.
5. Increasing more contact among library staff with library collection.
6. Correction of records, such as the catalogue and shelf list, for lost, withdrawn, and damaged volumes, among other things.
7. Identification of documents that need to have their barcodes or spine labels corrected.

3.2. Traditional methods of stock verification and their limitation

Periodic stock checking is done in libraries using one of the following conventional methods:

1. Using a manual accession register:
2. Shelf – register or a shelf list method:
3. Sample stock verification method:
4. Counting books on the shelves numerically:

Manual stock verification is difficult, time-consuming, and needs more library staff involvement, whereas stock verification via barcode technology, which involves a data capture procedure, is more accurate and time-saving.

4. Stock Verification Technique

4.1. Methodology

Previously, manual stock-taking was used, with each book's accession number manually written on plain datasheet paper. Now that barcode technology has been introduced, it is quite simple for library employees to just place a scanner on the barcode that identifies the item's accession number, and the scanner will immediately transfer and save the scanned information in the MS Excel file. The following steps were taken into mind during stock checking at the library:

1. Before stock verification, appropriate shelf rectification is required.
2. Write the verification year on the last page of the document to ensure that it was physically validated.
3. During the stock verification process, returned items were also checked before shelving.
4. The document's barcoded accession number is captured using a barcode scanner app.
5. Following data collection, a stock verification report is generated using LMS's and MS Excel as a report-making tool.

4.2. Stock verification preconditioning

1. During this time, all circulation work is partially stopped.
2. The verification process is not broken down into many parts.
3. Access to the stack area by anybody other than the verification staff is strictly prohibited.
4. Before stock verification, shelf rectification should be completed.
5. Ensure that all given books are returned before stock verification and that the library is temporarily closed to the users.

4.3. Inventory / Stocktaking using android Mobile App

Android Mobile App Inventory Tool can be used simply and not need of internet connection or mobile data of internet for stocktaking. Mobile Internet data is needed only for downloading and installing android mobile apps on the mobile phone.^{1,2}

1. First download the "Barcode to Sheet" android mobile app from Google Play Store on your mobile.
2. After application download click on it and select the plus sign in the right bottom corner to create Barcode

Sheet columns in Excel for stock verification.

In the stock verification at 4 columns were created (Acc. No., Shelf No., Rack No. and Section, etc.) Excel file named by the staff name. Finally, click on the floppy sign at the right top corner for saving the file.

Sample Verification file can be created as mentioned in [Figure 1]. After file creation click on the file name to open the sheet for barcode scanning.

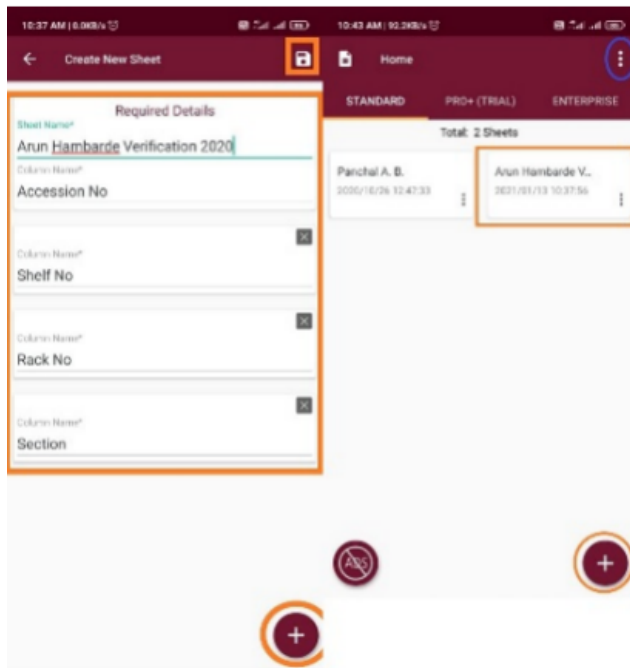


Fig. 1:

After opening the file you may see the file name on the top of the left side. On the opposite, you can see the eye sign displaying a full screen of records. In the top right corner, three dots displayed which are used to setting the app as well as send the data from various mediums to another via WhatsApp, email, etc. For better use enable the flashlight while scanning and beep sound on scan form the setting option. At the below four columns are displayed named Accession No., Shelf No, Rack No, Section, etc. At the bottom of the screen, we see three tabs. The Middle tab is used as a barcode reader and the third tab is used to save the records. When we use the middle tab for scanning after that save button is compulsory to press for saving the records. After the saving of records is displayed in the middle of the screen as shown in the below screen. [Figure 2] Alternatively you can export the verification excel file to various formats like xls, xlsx, csv, etc. Simply check three dots and choose the option to send the data.³⁻⁶

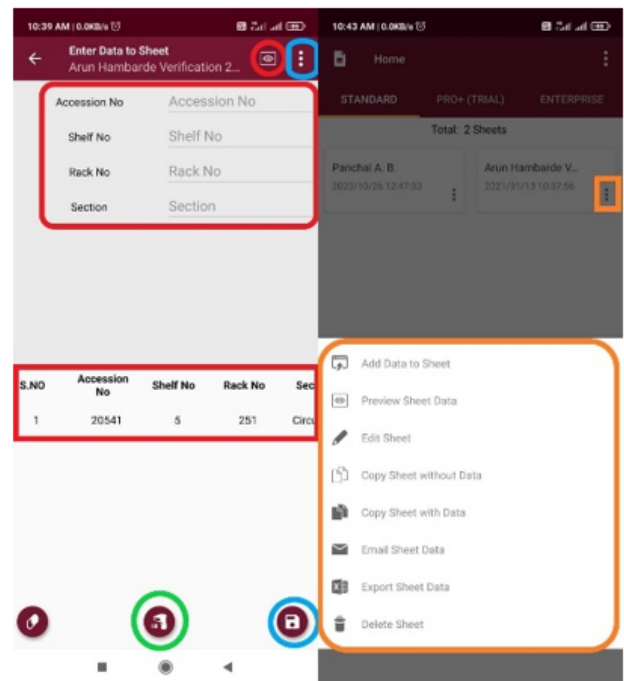


Fig. 2:

4.4. Data Analysis and Report Generation using MS Excel software

Before making a stock verification report, duplicate accession numbers, if any, should be removed. If any book has already been declared missing, lost, or damaged since the previous stocktaking, the status should be updated accordingly in the system before preparing this year's report. If the same accession number is also found in the current year's stock verification list, then it is important to check those accession numbers before giving the final stock verification report of the current year to the authority concerned.

Collect the files in the system and construct a primary file as indicated in Figure 3 after completing stock verification of all staff members. Insert two columns as the Name of the Employee who scanned the records and remark for easier analysis.

Select all the data and click on the table form. Apply the filter also. After applying filtration, select column B Accession Number for checking duplicate accession numbers. For checking duplicate accession numbers, click on Home Tab, Conditional Formatting, Highlight Cell Rules, and Duplicate Values (Figure 4) After that click on Ok button to highlight duplicate accession number records in colour in the columns.

To sort duplicate accession numbers on one side, right-click on the accession number columns and select sort by colour. (Figure 5)

Sr. No	Accession No	Shelf No	Rack No	Section	Remark	Name of Employee
1	25448	A	574	Thesis		Arun Hambarde
2	46428	A	574	Thesis		Arun Hambarde
3	31541	A	574	Thesis		Arun Hambarde
4	59092	A	574	Thesis		Arun Hambarde
5	46409	A	574	Thesis		Arun Hambarde
6	40442	A	574	Thesis		Arun Hambarde
7	40448	A	574	Thesis		Arun Hambarde
8	58738	A	574	Thesis		Arun Hambarde
9	41637	A	574	Thesis		Arun Hambarde
10	46395	A	574	Thesis		Arun Hambarde
11	54522	B	574	Thesis		Arun Hambarde
12	50788	B	574	Thesis		Arun Hambarde
13	47178	B	574	Thesis		Arun Hambarde
14	54155	B	574	Thesis		Arun Hambarde
15	41635	B	574	Thesis		Arun Hambarde
16	41603	B	574	Thesis		Arun Hambarde
17	58730	B	574	Thesis		Arun Hambarde
18	79567	R	574	Thesis		Arun Hambarde

Fig. 3:

After correcting duplicate accession numbers, select and copy the accession number columns in another file or sheet and sort the columns by accession number in columns A. In another sheet Column A fill the Serial Number from 1 to last accession number i.e. 71562. In Column B of Sr. No. sheet cell B2 type the formula as below and press Ctrl+Shift+Enter to generate the report. Apply Filter to all sheet and sort on the columns B in which formula is mentioned. All missing acc. Number sorted and displayed as the sr. no. (The last accession number mentioned is 71562, but you may change it to match yours.)(Figure 6) =VLOOKUP(A2,Sheet3!\$A\$2:\$A\$71562,1,0)

Accession No	Missing Number
2	1
3	1896
4	2185
5	2217
6	2268
7	2278
8	2343
9	2432
10	2553
11	2760
12	2966
13	3020
14	3356
15	3680
16	4054
17	4249
18	4625
19	4770
20	4872
21	5137
22	5219

Fig. 6:

Sr. No	Accession No	Shelf No	Rack No	Section	Remark	Name of Employee
1	25448	A	574	Thesis on Rack		Arun Hambarde
2	46428	A	574	Thesis on Rack		Arun Hambarde
3	31541	A	574	Thesis on Rack		Arun Hambarde
4	59092	A	574	Thesis on Rack		Arun Hambarde
5	46409	A	574	Thesis on Rack		Arun Hambarde
6	40442	A	574	Thesis on Rack		Arun Hambarde
7	40448	A	574	Thesis on Rack		Arun Hambarde
8	58738	A	574	Thesis on Rack		Arun Hambarde
9	41637	A	574	Thesis on Rack		Arun Hambarde
10	46395	A	574	Thesis on Rack		Arun Hambarde
11	54522	B	574	Thesis on Rack		Arun Hambarde
12	50788	B	574	Thesis on Rack		Arun Hambarde
13	47178	B	574	Thesis on Rack		Arun Hambarde
14	54155	B	574	Thesis on Rack		Arun Hambarde
15	41635	B	574	Thesis on Rack		Arun Hambarde
16	41603	B	574	Thesis on Rack		Arun Hambarde
17	58730	B	574	Thesis on Rack		Arun Hambarde
18	79567	R	574	Thesis on Rack		Arun Hambarde

Fig. 4:

Apply the formula for all records in columns B and wait till the report is generated. All the missing accession numbers in columns of sr. no. are shown #N/A in the column B. Copy or import the missing accession number file in library automation software and generate report accordingly for final purpose.

After generating a stock verification report from Excel software, the following decision may be taken for further action:

1. Withdrawal of damaged and page-torn books
2. Making notes in the shelf list records that are lost or damaged
3. Improving the safety and security arrangements of the library, which is considered as a qualitative measure for sustainability,
4. Getting approval of the stock verification report by the library committee
5. Placing the report with the library book purchase committee for replacement of the lost and/or damaged books

4.5. Limitation of Barcode Technology and Mobile App:

1. The verifier has an android mobile phone
2. It takes more time to read barcodes from books since it scans only one copy at a time.

Sr. N.	Accession N.	Shelf N.	Rack N.	Section	Remark	Name of Employee
1	25448	A	574	Thesis on Rack		Arun Hambarde
2	46428	A	574	Thesis on Rack		Arun Hambarde
3	31541	A	574	Thesis on Rack		Arun Hambarde
4	59092	A	574	Thesis on Rack		Arun Hambarde
5	46409	A	574	Thesis on Rack		Arun Hambarde
6	40442	A	574	Thesis on Rack		Arun Hambarde
7	40448	A	574	Thesis on Rack		Arun Hambarde
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13	47178	B	574	Thesis on Rack		Arun Hambarde
14	54155	B	574	Thesis on Rack		Arun Hambarde
15	41635	B	574	Thesis on Rack		Arun Hambarde
16	41603	B	574	Thesis on Rack		Arun Hambarde
17	58730	B	574	Thesis on Rack		Arun Hambarde
18	79567	R	574	Thesis on Rack		Arun Hambarde

Fig. 5:

3. If the barcodes are already damaged or worn out, barcoded information can neither be read automatically nor verified during stock verification. The verifier should be alert for damaged and duplicate barcodes and enter it manually. After scanning all the barcodes, the duplicate barcodes, if any, should be removed or rectified.

5. Conclusion

Stock verification using barcode technology with library automation software is easy to use, reduces labour costs, and eliminates typing errors. Since there is no manual procedure involved, the verification report generated by the system is accurate and reliable. During stock verification, proper care should be taken to sort out and keep aside the damaged books so that after completion of the verification process, these books can be placed with the authority concerned for further action. It must be remembered that the stock verification process is a point in time occurrence, and as such, it will only portray the balance sheet view of the current assets of the organization.

6. Source of Funding

None.

7. Conflict of Interest

None.

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Author biography

Arun Bhimrao Hambarde, Junior Library Assistant

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