



PADMABHUSHAN VASANTRAODADA PATIL MAHAVIDYALAYA
KAVATHE MAHANKAL, Dist. Sangli (Maharashtra) Pin- 416 405
Principal Prof. (Dr.) M. K. Patil M.Sc., M. Phil., Ph.D. Mob.9421185277
Phone-02341-295220 Email: kmpvp@rediffmail.com Website: www.pvpkm.ac.in
Jr. College Index No. J 22.04.002

Criterion-3: Research, Innovations and Extension

Key Indicator 3.3 Research Publication and Awards

3.3.2. Number of books and chapters in edited volumes/books published and papers published in national/ international conference proceedings per teacher during the last five years.

2020

S. No	Year	Name of the teacher	Title of the book/chapters and papers published	Page No
1	2020	Prof. (Dr.) M. K. Patil	Statistics paper VIII	1-2
2	2020	Prof. (Dr.) M. K. Patil	Statistics paper VII	3-4
3	2020	Prof. (Dr.) M. G. Londhe	Annabhau Sathe Janm Shatabdi Gourav Granth	5-6
4	2020	Mr.M.M.Kamble	Cloud computing and its impact on library services	7-17



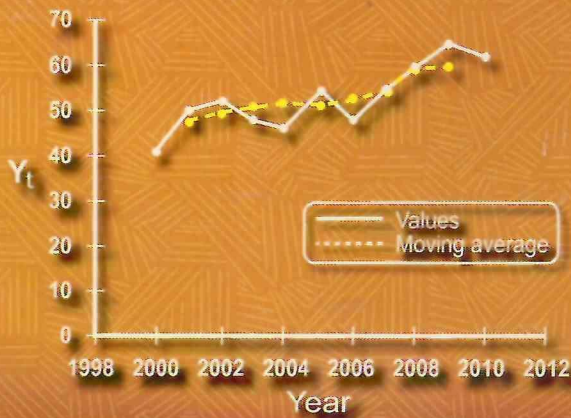
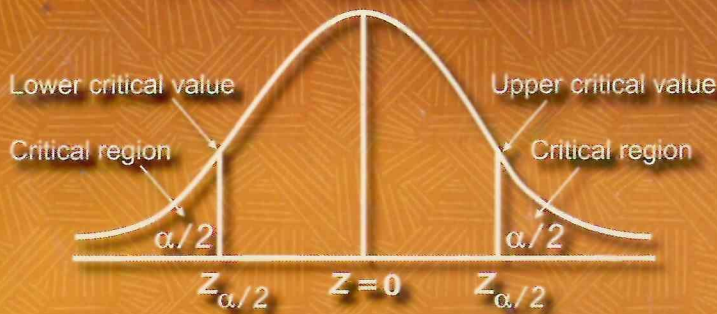

-PRINCIPAL
Padmabhushan Vasantrodada Patil
Mahavidyalaya, K. Mahankal, Dist. Sangli

Shivaji University
as per CBCS Syllabus

B. Sc. Part II ♦ Semester IV

STATISTICS

PAPER VIII



Dr. A. V. Dorugade ♦ Dr. A. A. Kalagonda
Dr. K. G. Potdar ♦ Dr. M. K. Patil



PHADKE PRAKASHAN

Distributed by

**PUNE
BRANCH**

PHADKE BOOK HOUSE

'Shriphal Prasad', 415, Narayan Peth, Munjaba Lane,
PUNE - 411 030. ♦ Telefax : (020) 244 82 951.

**SOLAPUR
BRANCH**

PHADKE BOOK HOUSE

622, Tadwalkar Wada, Shukrawar Peth,
SOLAPUR - 413 002. ♦ Mobile : 9423508919.

STATUTORY WARNING

All rights reserved. No part of this publication may be reproduced or utilized, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without prior permission in writing of the publisher or in accordance with the provision of the Copyright Act 1956 (as amended). Any person who does an unauthorised act in relation to this publication may be liable to Criminal Prosecution and Civil Claims for damages. All legal disputes subject to Kolhapur Jurisdiction.

ISBN 978 - 93 - 89435 - 56 - 6

Code NO. P 6228

Price ₹ 85/-

First Edition as per New Syllabus : January, 2020

Published by

Mrs. Bhagyashree M. Phadke
B. Com., LL. B. (Spl.)

Phadke Prakashan, Atharva Apt.,
Flat No. 10, T. P. S. No. 2/217/7, 'A' Ward,
Dudhali, KOLHAPUR - 416 012.

Printed by

M/s. Dasharath Book Binding Works,
Yashoda Vishwas Colony,
D. P. Road, Lakshatirth Vasahat, Kolhapur.

PREFACE

The syllabus of B.Sc.-II Statistics has been revised since June 2019. The very purpose of this textbook is to present B.Sc.-II Statistics syllabus with illustrative examples and exercise to the students and teachers.

The entire text has been written to cater to revised syllabi of Shivaji University, Kolhapur.

Subject matter is made simple and developed the matter in such a step by step manner that this textbook will serve as self study text for students.

While writing the text, attempts have been made to simplify the subject matter so that it can be clearly understood by the reader.

Typical numerical problems have been solved and added in exercise to better understand the concept.

Further, to meet the need of examination multiple choice questions with answers have been listed at the end of every unit. Efforts are taken to list the questions appeared in the university exam.

Most importantly, we also put our gratitude to all the institutions where we are working as a teacher.

We render our sincere thanks to Prof. Dr. D. T. Shirke, Pro-Vice-Chancellor, Shivaji University, Kolhapur for his continuous encouragement of writing textbook in Statistics.

We express deep sense of gratitude to Mrs. Bhagyashree M. Phadke, Publisher of Phadke Prakashan to bringing out the book in elegant form at right time.

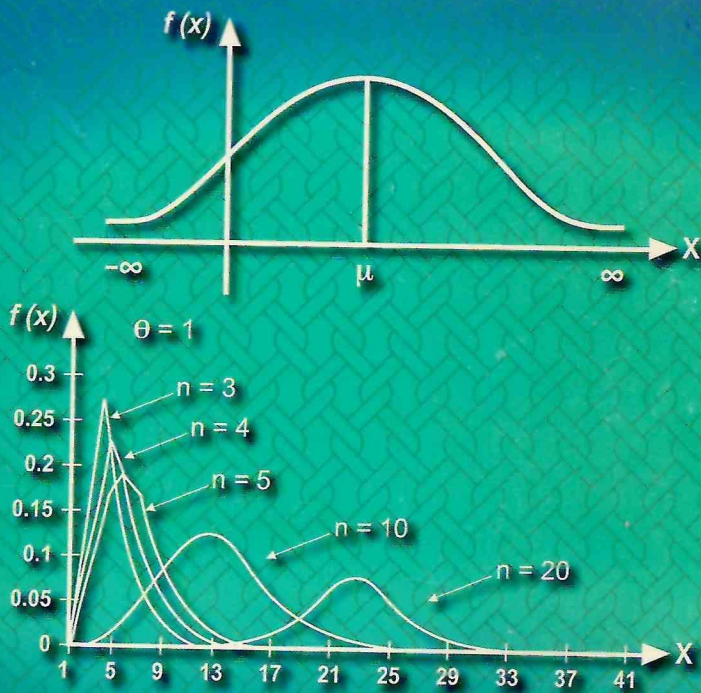
- Authors

Shivaji University
as per CBCS Syllabus

B. Sc. Part II ♦ Semester IV

STATISTICS

PAPER VII



Dr. K. G. Potdar ♦ Dr. M. K. Patil
Dr. A. A. Kalagonda ♦ Dr. A. V. Dorugade



PHADKE PRAKASHAN

Distributed by

**PUNE
BRANCH**

PHADKE BOOK HOUSE

'Shriphal Prasad', 415, Narayan Peth, Munjaba Lane,
PUNE - 411 030. ♦ Telefax : (020) 244 82 951.

**SOLAPUR
BRANCH**

PHADKE BOOK HOUSE

622, Tadwalkar Wada, Shukrawar Peth,
SOLAPUR - 413 002. ♦ Mobile : 9423508919.

STATUTORY WARNING

All rights reserved. No part of this publication may be reproduced or utilized, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without prior permission in writing of the publisher or in accordance with the provision of the Copyright Act 1956 (as amended). Any person who does an unauthorised act in relation to this publication may be liable to Criminal Prosecution and Civil Claims for damages. All legal disputes subject to Kolhapur Jurisdiction.

ISBN 978 - 93 - 89435 - 44 - 3

Code NO. P 6215

Price ₹ 75/-

First Edition as per New Syllabus : January, 2020

Published by

Mrs. Bhagyashree M. Phadke

B. Com., LL. B. (Spl.)

Phadke Prakashan, Atharva Apt.,
Flat No. 10, T. P. S. No. 2/217/7, 'A' Ward,
Dudhali, KOLHAPUR - 416 012.

Printed by

Shri. Prafulla Pathak at Swaroop Printing Press,
Behind Private High-school, Mangalwar Peth, Kolhapur.

PREFACE

The syllabus of B.Sc.-II Statistics has been revised since June 2019. The very purpose of this textbook is to present B.Sc.-II Statistics syllabus with illustrative examples and exercise to the students and teachers.

The entire text has been written to cater to revised syllabi of Shivaji University, Kolhapur.

Subject matter is made simple and developed the matter in such a step by step manner that this textbook will serve as self study text for students.

While writing the text, attempts have been made to simplify the subject matter so that it can be clearly understood by the reader.

Typical numerical problems have been solved and added in exercise to better understand the concept.

Further, to meet the need of examination multiple choice questions with answers have been listed at the end of every unit. Efforts are taken to list the questions appeared in the university exam.

Most importantly, we also put our gratitude to all the institutions where we are working as teacher.

We render our sincere thanks to Prof. Dr. D. T. Shirke, Pro-Vice-Chancellor, Shivaji University, Kolhapur for his continuous encouragement of writing textbook in Statistics

We express deep sense of gratitude to Mrs. Bhagyashree M. Phadke, Publisher of Phadke Prakashan to bringing and the book in elegant form at right time.

- Authors

अण्णा भाऊ याटे जन्मशताब्दी
गौरवग्रंथ

अण्णा भाऊ याटे जन्मशताब्दी गौरव ग्रंथ

अण्णा भाऊ याटे जन्मशताब्दी
गौरवग्रंथ

संपादक
डॉ. मोहन लोंढे

अण्णा भाऊ साठे
जन्मशताब्दी
गौरव ग्रंथ

© डॉ. मोहन लोंढे
© लेखकाधिन

संपादक :

डॉ. मोहन लोंढे
'गोविंद' विद्यानगर
कवठेमहांकाळ,
सांगली
भ्रमणसंवाद
९४२३८२९२३०

प्रकाशक
शशिकांत पवार
ललित पब्लिकेशन
६, माने कंपाऊंड, खिमजी
विश्राम बिल्डिंगमागे,
टी. जे. रोड, शिवडी
मुंबई ४०००१५
भ्रमणसंवाद
८८७९०३९१४३
९८६९३७७८०६
ईमेल
spawar79.sp@gmail.com
अक्षरजुळणी
जय ग्राफीक्स, मुंबई

प्रथमावृत्ती
१ ऑगस्ट २०२०
अण्णा भाऊ साठे जयंती

मुखपृष्ठ
श्रीराम मोहिते

रेखाटणे
मिलिंद कडणे

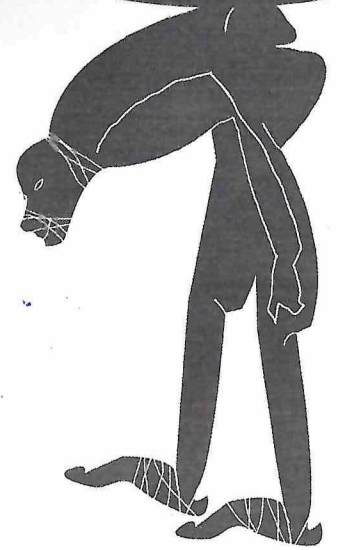
मुद्रक
इंडिया प्रिंटिंग वर्क्स, मुंबई

मूल्य
५५०/-

ISBN :
९७८-८१-९४०१४८-४-३

टिप

सर्व लेखांशी संपादक व प्रकाशक सहमत असतीलच, असे नाही.



“Professional Challenges and Opportunities for Development of College Librarians”



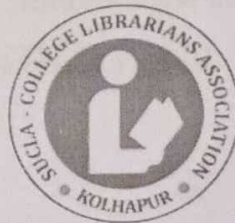
EDITED BOOK

By
**Shivaji University College Librarians Association
(SUCLA), Kolhapur**

“Professional Challenges and Opportunities for Development of College Librarians”

EDITED BOOK

ISBN : 978-93-81249-30-7



By

**Shivaji University College Librarians
Association (SUCLA), Kolhapur**

Editorial Board

1. Dr. Ravindra Pandurang Adav	President, SUCLA
2. Mr. Prashant S. Kalloli	Vice President
3. Dr. Bhagavan Shamrao Padval	Secretary
4. Mr. Tanaji Laxman Kamble	Treasurer
5. Mrs. Urmila Rajendra Kadam	Member
6. Mr. Balaji Abhimanyu Kamble	Member
7. Mr. Mahesh Maruti Kamble	Member
8. Mr. Shivaji Pandurag Kamble	Member
9. Dr. Amol Devaji Khobragade	Member
10. Mr. Pravin Chandrakant Kumbhar	Member
11. Dr. Sudhir Ramdas Nagarkar	Member
12. Mr. Damodar Dasharath Waghmare	Member
13. Mrs. Sandhya Girish Yadav	Member



Contents

Sr. No.	Title and Authors of Paper	Page No.
1	Use of Data Mining in the field of Library and Information Science Adav (Dr.) R. P.	5
2	Changing nature of Traditional Resources in Academic Libraries Dr. Sahebrao G. Annapure	9
3	Social Networking in Academic Libraries : The Potential Outcomes Mrs. Dhanawanti Sunil Bamane	11
4	Open Educational Resources and Massive Open Online Courses : Enhancing Quality of Online Education Nagu N. Bansode, Priyanka S. Barpate, Sudharani D. Hajare	15
5	Factors Related to Research in LIS Education Bhagwat Vasant Bajarang	19
6	Promotional Tricks and Tools to Liberate Information Resources Dr. Prakash Bhairu Bilawar	21
7	Skills and Competencies for KM Practice in Academic Libraries Mr. Chavan Raghunath Ramchandra, Mr. Kadam Prabhakar Dattatray	23
8	Information Literacy In Libraries Miss. J. D. Hatkar, Mrs. Shubhada V. Mane-Jadhav	29
9	LibCRM Software: Customer Relationship Management in Library services Mr. Hemant Fransis Jadhav	31
10	Professional Ethics for Librarianship Balaji A. Kamble	33
11	Cloud Computing and its impact on Library Services Kamble Mahesh	36
12	Use of Open Source Software's in Library Automation Mrs. Pratibha S Kamble	39
13	Application of Open Source Software's for Automation and Digitization of Libraries Mr. Shivaji P. Kamble	44
14	Change Management in Academic Libraries Kamble Tanaji Laxman	48
15	Use of Social Networking in Libraries Ujwala Bandu Karsale	52
16	Library Resources Sharing Through Networking Dr. Khandekar G. B.	55
17	Cloud Computing and Libraries Dr. V. V. Kharade	59
18	"Social Networking Tools : It's Applications in Libraries" Mr. Sandip S. Kubal	63



**"Professional Challenges and Opportunities for
Development of College Librarians"**

ISBN : 978-93-81249-30-7

19	A Bibliometric Portrait of LIS Teachers in Maharashtra: A Study through Publish or Perish Software Hempushpa M. Kumbhar & S. B. Patil	67
20	Information Literacy in Library and Information Science Ashok Tukaram Lad, P. G. Patil	73
21	OPAC : Mirror of Library Dr. Sainath Shivaji Lokhande	76
22	Use of Social Media in Libraries Dr. S. R. Mandale	79
23	College Libraries and NAAC Shri. Bala Mandrekar	82
24	Usage of E-Library Service in Professional College Libraries under Solapur University Mr. Pravin Raosaheb Mane	84
25	Electronic Resources and Its Utilities In Library Ravindra R. Mangale	87
26	"Information Literacy" Sameer Popat More	90
27	Measuring the Quality of Libraries Mr. Sudhir Pandurang More	92
28	Best Practices in Dnyanshree Library in environment of ICT era Mrs. Nagarkar Vandana Sudhir	95
29	Role of Libraries in The Age of Moocs Nitish Devu Naik	98
30	Use of E- learning Tools in Education System : An overview Shri. M. M. Ningoji	100
31	E-Resources : Definition, Need and Types Dr. B. S. Padval	103
32	Importance of Ethics in Library Profession A. A. Patil	106
33	Users Education in College Libraries Mrs. Sunita Shivaji Patil	109
34	Application of General Management Principles in Libraries Mr. Harshal Bhimsen Pawar	112
35	Creating Law Library Blogs on the Internet : Usage and Challenges Kailas R. Pawar	115
36	"NATIONAL CAREER SERVICE" (NCS) - Digital Portal of Employment and Carrier Information" Sangramsinh Shivajirao Pawar	118
37	"Digital Library is the Facility for Users based on Modern Information Communication Technology" Mrs. Powar Surekha Anil	122
38	Modern Technology For Libraries R. K. Rathod	124



39	Competency Mapping of LIS Professionals: Need of Time Ms. Satvashila Tanaji Salgar	126
40	"Internet as an information source to integral component of library and information centre" Mr. Avinash B. Salunkhe	131
41	"Selected Famous Indian Librarians in Modern Era" Dr. Salunkhe Santosh Papat	135
42	Digital Library Hema Raju Sasane	137
43	Importance of free e-resources in present era Savekar, Rajendra Sakharam	140
44	Library, Library Services and Knowledge Management : Role of Library Professionals Mrs. Trupti Rajendra Shah	144
45	"Impact Of Information Technology : A Study Of Challenges And Opportunities Before College Libraries In Rural Area With Special Reference To Sangli District" Smt. Sunita Jayant Shinde	147
46	Changing Role of Library Professionals in the Digital Environment Shirke M. S.	152
47	Resource Sharing & Its Problems Mrs. Swati S. Toraskar-Digre	154
48	Application of QR codes in libraries Prof. Umap Manisha Hemant	158
49	Modern Technology Application in Academic Libraries : Challenges and opportunities Prof. Smt. Walake Susmita Mahadev	161
50	Internet of Things (IoT) in Libraries: An Overview Mrs. Sandhya Girish Yadav, Mrs. Sandhya U. Kulkarni	164
51	Change Management in Library and Information Centres V. P. Yadav	167
52	आधुनिक युगात डिजिटल ग्रंथालयांची गरज प्रा. डॉ. आडाव आर. पी., श्री. पाटील कृष्णात पांडुरंग	170
53	महाविद्यालयीन ग्रंथालयातील आव्हाने आणि विकासाच्या संधी प्रा. ब्रनसोडे रुपाली संजयकुमार	173
54	संशोधनातील उल्लेख विश्लेषणाचे महत्व शितल दानेकर	176
55	बौध्दिक संपदा अधिकार प्रा. रामकृष्ण सुर्यकांत गडकरी	179
56	महाराष्ट्रातील सार्वजनिक ग्रंथालयांचा विकास प्रा. भक्ती प्रसाद गवस - तावडे	182
57	थिसॉरस श्री. गुंडाले दत्तात्रय पांडुरंग	186



"Professional Challenges and Opportunities for
Development of College Librarians"

ISBN : 978-93-81249-30-7

58	ओपन सोर्स डेटाबेसचे महत्व ऋषिकेश अनिल गुरव, डॉ. पांडुरंग बी. पाटील	190
59	महाविद्यालयीन व विद्यापीठीय ग्रंथालये : एक शृंखला निलेश माणिक जाधव	197
60	ग्रंथालयांचे प्रकार, कार्ये व महत्व जगताप डी. ए.	199
61	भारतीय राष्ट्रीय वस्तुसंग्रहालयाची स्थापना आणि विकास यशवंत श्रीकांत कारंडे, डॉ. पांडुरंग बी. पाटील	202
62	माहिती साक्षरतेचा ग्रंथालयात उपयोग प्रा. एस. बी. कोरडे	206
63	शंकरराव जगताप आर्ट्स अँड कॉमर्स कॉलेज वाघोलीमधील ग्रंथालयात ई-ग्रंथालय सॉफ्टवेअरचा उपयोग श्री. प्रविण चंद्रकांत कुंभार	208
64	ग्रंथालय संगणकीकरण श्री. लोखंडे एन. एन.	211
65	ग्रंथालयातील मनुष्यबळ आणि मनुष्यबळ नियुक्ती आकृतिबंध डॉ. विद्या शरद मोदी	214
66	सार्वजनिक ग्रंथालये श्री. विनायक दशरथ नाकतोडे	218
67	ग्रंथालयामध्ये व्यवस्थापनाचे बदलते स्वरूप प्रकाश शिवाजी पाटील	220
68	वाचक अभ्यास श्री. सरदार नि. पाटील	224
69	वाचन संस्कृती विकासातील महत्वाचे घटक सौ. सुनंदा विकास पाटील	227
70	डिजिटल ग्रंथालय आणि सेवा वंदना श्रीपती पाटील, अमोल आबासाहेब चव्हाण	229
71	संशोधन आणि ग्रंथपाल युवराज आनंदराव पाटील	233
72	विद्यापीठीय ग्रंथालयांचे संशोधनातील योगदान सौ. शिंदे सोनाली राहुल	235
73	कृष्णा महाविद्यालय, रेटरे बु.॥ ग्रंथालयातील बेस्ट प्रॅक्टिसेस: एक अभ्यास अमोल अरुण थोरात	238
74	माहिती तंत्रज्ञान आणि शैक्षणिक पद्धतीचा विकास कु. यादव मेघा तानाजी	241



Cloud Computing and its impact on Library Services

Kamble Mahesh

Librarian

PVP Mahavidyalaya, Kavathe Mahankal, Sangli

Abstract : *In this paper, an attempt has been made to give an overview of how service, platform and infrastructure forms of cloud computing have been used to serve library needs. It is a style of computing in which scalable and elastic IT-enabled capabilities are delivered as a service to the external customers using internet technologies. Cloud computing is a new concept in the services which are offered over the internet. It has completely changed the way of use of the power of computers irrespective of any geographic location. The biggest benefit for organizations and businesses is that it offers services using hardware or software or platform of third party sources. It is very economical as it saves cost and maintenance. Cloud computing comes in several different forms. In order to minimize the cost and avoid duplication of resources, infrastructure, software, hardware, manpower use of emerging technologies like server virtualization and cloud computing in libraries are increasing.*

Keywords : *Cloud Computing, SaaS, PaaS, IaaS, Components of Cloud, Libraries and Cloud.*

INTRODUCTION :

Cloud computing is making it possible to separate the process of building an infrastructure for service provisioning from the library of providing end user services. Cloud computing provides people the way to share distributed resources and services that belong to different organizations or sites. Cloud computing share distributed resources via the network in the open environment. It is a virtual pool of computing resources through internet. Cloud computing provides people the way to share distributed resources and services that belong to different Organizations or sites. Many companies, such as Amazon, Google, and Microsoft and so on, accelerate their paces in developing Cloud Computing systems and enhancing their services to provide for a larger amount of users. Cloud computing is broken down into three segments: "application" "storage" and "connectivity." Each segment serves a different purpose and offers different products for businesses and individuals around the world. Libraries are using computers for running services such as Integrated Library Management Software (ILMS), website or portal, digital library or institutional repository, etc. These are either maintained by parent organization's computer staff or library staff. It involves investment on hardware, software, and staff to maintain these services and undertake backup and upgrade as and when new version of the software gets released. Library professionals in most cases not being trained in maintaining servers find it difficult to undertake some of these activities without the support of IT staff from within or outside the organization. Now cloud computing has become a new buzzword in the field of libraries, which is blessing in disguise to run different ICT services without much of a problem as third-party services will manage

servers and undertake upgrades and take backup of data.

Types of Cloud Computing :

- 1) Software as a Service (SaaS) :
- 2) Platform as a Service (PaaS):
- 3) Infrastructure as a Service (IaaS):
- 4) Storage as a service (STaaS)
- 5) Security as a service (SECaaS)
- 6) Data as a service (DaaS)
- 7) Database as a service (DBaaS)
- 8) Test environment as a service (TEaaS)
- 9) Desktop virtualization
- 10) API as a service (APIaaS)
- 11) Backend as a service (BaaS)

Advantages of Cloud Computing in Library Service:

1. Cost reduction - Ability to increase or decrease the consumption of hardware or software resources immediately and in some cases automatically.
2. Scalability - "Pay as you go" allowing a more efficient control of expenditures.
3. Lower investment, reduced risk - Immediate access to the improvements in the resource proposed (hardware and software) and debugging.
4. Support included - Enjoyment of the most advanced security procedures, availability and performance of providers with experience and knowledge in this type of service.
5. Greater security and accessibility - Access to resources



from any geographical point and the ability to test and evaluate resources at no cost.

6. Portability - since the service is available over the web, the service can be availed through browser from any part of the world.
7. Adjustable storage - In the traditional system, if the server is less than what we have. The server should be replaced with the new one. In this computing, the storage capacity can be adjusted according to the needs of the library, since the storage is controlled by the service provider.
8. Cloud OPAC - Most of the libraries in the world are having the catalogue over the web. These catalogues are available with their libraries local server made it available over the web. If the catalogue of the libraries made it available through cloud, it will be more benefit to the users to find out the availability of materials.

Drawbacks of Cloud Computing :

1. Privacy and security of Data
2. Network connectivity and bandwidth
3. Providers are supreme power
4. Flexibility is limited
5. Cost
6. Knowledge and integration

Cloud Computing: Application in Libraries :

There are some organizations and business houses who functions as cloud computing vendors for library software's, search engines and digital libraries etc and offer the use of cloud computing platform for these purposes. Some of these are:

1. OCLC's Web scale :

OCLC is perfectly using cloud computing for libraries and set an example for others. Years together OCLC has been functioning as a cloud computing vendor because they provide cataloguing tools over the internet and allow member institutions to draw on their centralized data store¹³. OCLC has implemented the plan of library management systems i.e. world share management services (WMS). This service has services for many areas like acquisitions, analytics, resource sharing, cataloguing and license management components. It offers the entire library collection management in a cloud-based application. The main purposes of web scale are that libraries can share their resources, data, and innovation with ease. To serve these purposes, it has some certain features that work together to provide its users better library services. In other words, this will generate cost benefits for libraries and efficiencies not possible when utilizing disparate, specialized systems¹³. The service promises to include privacy, security, scalability and technical support.

2. Ex-Libris Cloud :

Ex-Libris is a leading library software vendor from USA. It provides cloud based solutions to automate the library operations. It developed most products for locally implemented solutions and adapted them to a hosted environment later. Its website claims that over 5300 in more than 80 countries are deploying Ex-Libris solutions for automation of their library resources. It allows libraries to enhance their efficiency and lower the cost of operations and extend their value through launching new services. It has changed the way to provide traditional management of library resources through its library based system, Alma. It besides ensuring considerable savings in total cost, involved in the implementation of software and the use of a centralized cloud service enables libraries to easily influence the collaborative efforts of the library community to provide effective services for their users¹⁴. To provide worldwide cloud-based services; it has opened data centers at various locations. The company promises to adhere to data security, updates, and standards in implementing cloud services to safeguard the interests of customers.

3. Duraspace's DuraCloud :

Duraspace provides open source repository solutions by undertaking turnkey projects for organizations and libraries to enable them to share scholarly literature using DSpace and Fedora Commons. It is particularly devoted to improve and sustain Fedora and DSpace. These open source repository solutions are very famous for IR solutions. Its new service Dura Cloud provides digital preservation support services in the cloud, which is cost effective and simple for libraries. Dura Cloud helps libraries to move content to the cloud and store it with different service providers to eliminate the risk of data loss.

The cloud solutions offered include online backup, preservation and archives, media access, online sharing, and cloud broker.

4. OSS Labs:

OSS labs from India is using Amazon's elastic cloud computing platform owing to the various capabilities of Amazon such as high durability of data, ISO standards based strong information security and flexibility. It is expected that the OSS labs will be able to provide robust open based solutions to demanding customers¹⁷. OSS Labs offer hosting and maintenance services for Koha ILS and DSpace IR. OSS Labs use Amazon's cloud services. Library operations have become very cost effective and the library staff needs not to worry about maintenance of software etc.

General use of cloud computing in libraries :

1. Automation of library activities using LMS
2. 24*7 access of library.
3. Creating Digital library to link the online databases using



IP, institutional repositories, free→ resources, e-learning and training materials, question papers, and archives uploading.

4. Library portal for new book request, queries, feedback, newsletter
5. Creating group e-mails to the users (via web mail)
6. Web OPAC, online renewal, reservations etc...
7. Federated searching
8. Large number of documents can be stored in a public server using Cloud
9. Online attendance monitoring, student's records maintenance, fine collections etc...
10. PO / PR requesting using internal software
11. Creating and uploading newsletter, new arrivals and forthcoming events for user community(CAS)
12. Creating alerts to the user community based on SDI→

Enhancement of Library Services by the Use of Cloud Computing :

1. **E-books Lending Service:** Cloud platform is now becoming popular to lend the E-Books.
2. **Union /Shared Catalogue/OPAC:** Network libraries can use same platform and give access to their collection on one platform. Through cloud computing creation of union catalogue becomes very easy.
3. **Document Download Service:** One can download documents easily if permit access in the network.
4. **Digital preservation/Scanning Service:** Digitization and scanning work can be done centralized and so one can avoid duplication of such time consuming work. Libraries can preserve the collection in digital form in the form of archives.
5. **Article Delivery Service:** Cloud computing can be used for article delivery service to the patrons by the libraries. Publishers are already using this technology for providing access to libraries.
6. **Current Awareness Service:** To provide current awareness service to all patrons has become easy with cloud computing.
7. **Document Sharing:** Document sharing has become easy with cloud computing.
8. **Bulletin board service:** We can provide new services on bulletin board with this technology.
9. **Information Common:** Information common like bibliographical data, content pages, cover pages, question papers, syllabus, and other reading material we can share on one platform. It helps in improving economy of library and avoids duplication of library purchase.

10. Collection Development: Cloud computing is used for collection development. Duplications can be easily avoided and alternate resources can be located and made accessible to patrons.

11. File sharing: To share various files in electronic form become easy with the cloud computing.

12. Information Discovery: Cloud provides a platform to store all information that one can access anytime from anywhere; so information discovery and searching become easy and it is very useful for researchers.

13. E-Learning: In the E-Learning environment too, cloud computing is boon. Study material can be kept on the cloud for reference purpose and online examinations also can be conducted. Discussions, revisions can be done at a time from different places.

14. Information Literacy/Orientation: Libraries can conduct information literacy and orientation courses on the cloud. They can keep the tutorials, videos, presentations and files on the cloud for user's orientation.

Social Interactions with the users : Can be possible because of cloud computing.

Role of Cloud Librarian :

1. To track member information and transactions
2. To provide Access Pin to students and define validity. (Pin can be auto generated; Validity can be set in the software)
3. To communicate with the member libraries contributing their resources to cloud for resource sharing
4. To communicate with the Ebooks, Journals publishers & distributors, consortia, database providers
5. To discuss with faculty members and subject experts, librarians for preparing different packages for different faculties and classes.
6. To update technological skills
7. To give technological support to member libraries
8. To conduct training and awareness programs for readers
9. To provide interlibrary loan facility
10. To track usage record of cloud resources
11. To develop digital collection
12. To keep record of physical resources too for providing referral service
13. To deal with Cloud resource and players and select the best bargain.
14. To maintain own virtual profile by creating his or her blog or social network profile to interact with the user. The same platform can be used for providing
15. Reference services and educating the users on cloud resources or how to use the Cloud infrastructure.



16. To use his or her strategic planning and decision making ability at different stages of developing a Cloud library.

Conclusion :

Concluding it can be said that cloud computing technology provides libraries an opportunity to improve their services and relevance in today's information society. It can bring several benefits for libraries and give them a different future. It helps libraries to deliver its resources, services and expertise at the point of need, within user workflows and in a manner that users want and understand. It should free libraries from managing technology so they can focus on collection building, improved services and innovation. The cloud computing model will encourage libraries and their users to participate in a network and community of libraries by enabling them to reuse information and socialize around information. It can also create a powerful, unified presence for libraries on the Web and give users a local, group and global reach.

References :

- [1] Swapna G & Biradar B. S., *Application of Cloud Computing Technology in Libraries*, *International Journal of Library and Information Studies* Vol.7(1)

Jan-Mar, 2017 P. 52-61

- [2] Rekhraj Sahu, *Cloud Computing: An Innovative Tool For Library Services*, *National Conference on Library Information Science and Information Technology for Education(2016)*
- [3] Radha L., *Application of cloud computing at library and information centers*, *the international journal's Research journal of science and IT management*, Vol. 2, (2013)
- [4] Babu, Ganesh : <http://www.axleration.com/facebook-vs-myspace/>, April 12, 2011.
- [5] *Cloud Computing and Libraries* by S. Y. Bansode and S. M. Pujar, *DESIDOC Journal of Library & Information Technology*, Vol. 32, No. 6, November 2012, P. 506-512
- [6] Mahipal Dutt, *Cloud Computing And Its Application In Libraries*, *International Journal of Librarianship and Administration*, Volume 6, Number 1 (2015), pp. 19-31
- [7] Hayes, B. *Cloud computing*. *Communications of ACM*, 2008, 51(7), P. 9-11.
- [8] Wikipedia. *Cloud computing*. http://en.wikipedia.org/wiki/Cloud_computing

Use of Open Source Software's in Library Automation

Mrs. Pratibha S. Kamble

(MA MLib & Isc NET) Librarian

CSIBER Trust's College of Non-Conventional

Vocational Courses for Women, Kolhapur

Abstract : *In this era of digital transition from information age to knowledge society, the libraries are facing much greater challenges. The whole library operations have now changed to a single window knowledge bank. This paper discusses the definition and features of open source library management software, criteria of selection of best open source library management software, their advantages and limitations over Commercial Software's. Open source library management software is a solution to reducing that cost. Some small libraries in school or colleges have very narrow budget so they cannot afford Commercial/Paid Software's. In this case we can use Open Source Software's. Open Source Software's are efficient, accurate and easy to use as same as Commercial/Paid Software's. So I am trying to focus of Open Source/Free Software's in my Paper presentation.*

The paper describes in brief about the feature of some of the open source library management software like Greenstone Digital Library, DSpace, KOHA, E-Prints, NewGenlib, PhpMyLibrary, OpenBiblio, Avanti, etc., which are useful for developing digital library and institutional repositories.

Keywords : *Greenstone, DSpace, KOHA, E-Prints, Avanti, New Genlib, ABCD*

INTRODUCTION :

Open Source Software means, software which is freely available to anybody and the source code (use to create a program) is free to view, use, modify and redistribute without any discrimination. It's a collaborative effort where

programmers can make changes, improve the source code and share between peers, allow further modifications and incorporate changes within the community.

To support the development of GNU (General Public License), Richard M. Stallman founded the Free Software