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MEASURING THE USABILITY OF LIBRARY WEBSITE USING GOOGLE ANALYTICS

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Abstract *The main purpose of this article is to explore the usability of library website using Google Analytics. The usability of the library website has been measured during February 2011 to February 2013 (25 months). The results of the study shows that there were totally, 8304 visitors viewed the web pages from 62 countries. Home page was the most frequently visited web page (51.99%) followed by library services web page (41.59%) and question paper archives (14.11%). A total of 1926 search terms were used to search library website. The findings of the study will be more useful to librarians and also webmasters to understand the usability of web pages and to improve the quality of web page.*

Keyword: *Library Website, Google Analytics, Librarians*

INTRODUCTION

Library website is meeting place of selected qualitative information resources and services for visitors (Cohen, 2003). Now days, website no longer remain simple text, images and links, its includes rich media as auto streaming videos, tagging, commenting, sharing, data analytics and advertisements from third party services (Butkiewicz, Madhyastha & Sekar, 2011). Popularity and ranking of website could be measured by analyzing usefulness and usability of website (Tsakonas & Papatheodorou, 2005). Google analytics employed to measure the usability of library website in this study.

On the other hand, the progress of design of library websites much more increased since last decade. It can be used as a new and innovative method of delivering library services (Brinkley, 1998). The library website is enhancing visibility of educational resources of the institute, nationally and globally (Kirk, Maggie et al., 2012). Website is becoming a serious issue for effective online marketing of information products and services. Palmer (1999) in her study stated that the library website is playing very important role as a: Library channelized its online resources to reach geographically isolated users through website act as a window to customized selective and current information resources to user fraternity and provide access the right resources to right users at all time.

Thus college library website is an information gateway, which is considered as information resources and services hub. Use of library website is core activity in the library, to

determine the usage of web resources and services require robust mechanism.

Thus library website is considered an integral part of library services. Calculating visitor statistics is a core activity for any website provider (Pakkala, et al., 2012), because creation and maintenance of a website devote much time and dedication of the library staff (Cohen, 2003). However, tracking the website usage statistics is paving the way to measure library resources and services usage. In recent years many studies have been conducted to measure the usability of website (Plaza, 2009a; 2009b & 2011). (Pakkala et al., 2012) The present paper address the usability of library website on the basis of frequency of visits to website, time spent on website and use of various keywords to search website. These results will be more helpful for librarians and administrators to make necessary changes and in-depth analysis to their library website.

OBJECTIVES OF THE STUDY

The objectives of the study are:

- To know the frequency of visits to library website by various library users.
- To identify the frequency of use of various library web pages
- To know the use of various keywords to search library website
- To know the use of various web browsers for locating the library website

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SCOPE AND METHODOLOGY

The present study is confined to analyze the usability of Acharya Institute of Graduate Studies (AIGS) – Library website, Karnataka, India. Acharya educational campus is cluster of esteemed institutes encircling with plethora academic programs, and catch the attention of students from India as well 30 countries abroad. AIGS library is truly emerged as an excellent information centre in the campus. The library has rich collections in terms of print, non print and web based materials.

AIGS library has developed library website with the objective of providing web based services of specific, relevant, reliable, information resources to empower academic system. The prime motto of the library website is to provide access to quality-filtered information resources and services to research and academic needs of the user fraternity at Acharya Institute of Graduate Studies (AIGS). The present study analyzes the usability of AIGS library website using Google Analytics.

GOOGLE ANALYTICS

According to the Web Analytics Association (2006), “Web Analytics is the measurement, collection, analysis and

reporting of Internet data for the purposes of understanding and optimizing Web usage. Google Analytics had launched by Google in August 2006, its a web analytics tool to collect, store, organize, and analyze website usage statistics by graphs, charts, diagrams in finger-tips.

Google Analytics provides an excellent analytic solution that explains complex statistical data in a simple and easy-to-understand manner. Currently, Google Analytics is used by over 80% of the commonly used websites that use traffic analysis tools (W3Techs, 2010). In addition, several scientific articles have analysed Google Analytics and evaluated its usefulness as a web analytics tool (Bhatnagar, 2009; Fang, 2007; Hasan, 2009; (Plaza, 2009a; 2009b, & 2011)).

Thus the present study has chosen Google Analytics to assess the visibility and usability of library website. Steps in analyzing the library website are:

- a. Create/open Google Analytics account (www.google.com/analytics/)
- b. Select “SIGN IN” to open the Google Analytics and Choose “CREAT NEW ACCOUNT” to create your own account (Figure-1)

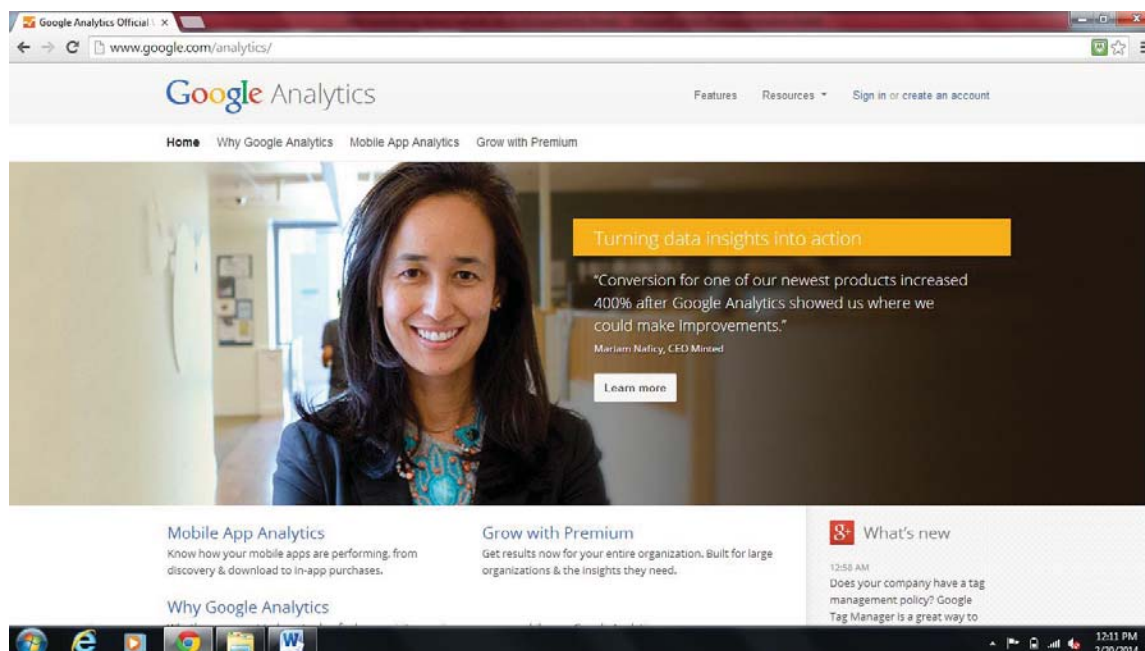


Figure 1. Google Analytics Home Page

After sign in, Click on sign up option (Figure-2)

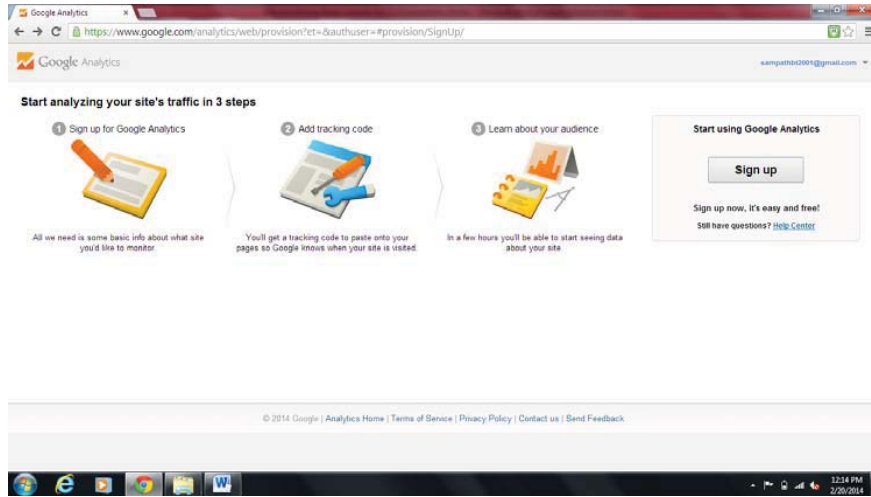


Figure 2. Google Analytics Sign Up Option

Setting up your account which includes ‘account name’, ‘website name’, ‘website URL etc’, and click on “Get Tracking ID” (Figure 3)

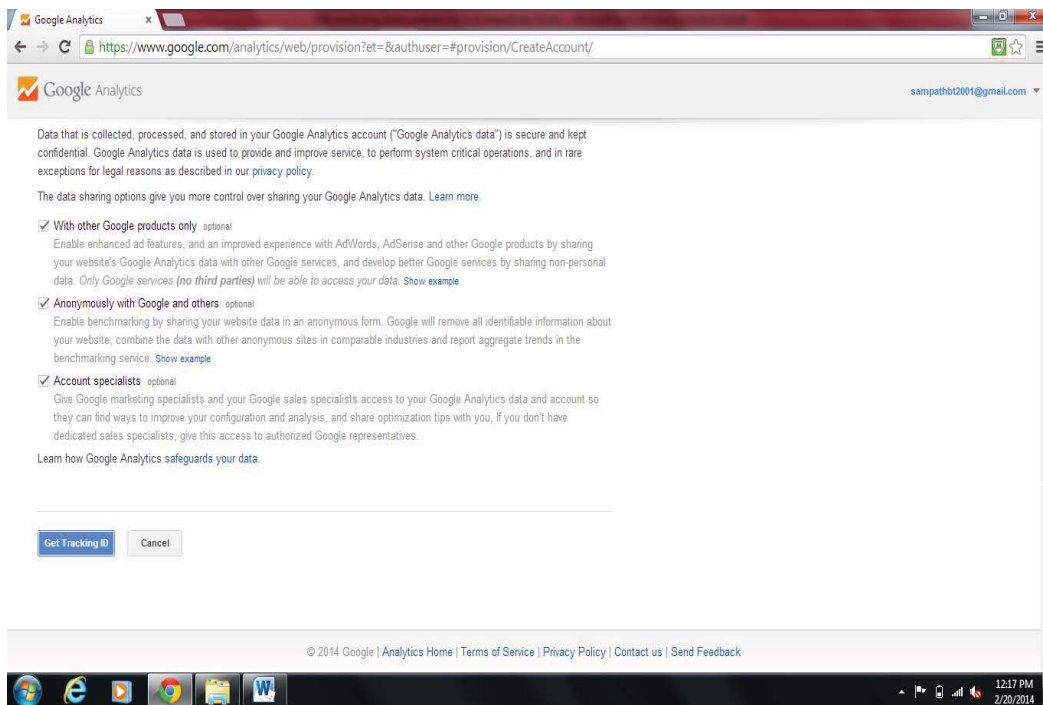


Figure 3. Get tracking ID Option

Copy and paste the following source code (Figure-4) into library web pages under the HTML <head> tag.

```

<script type="text/javascript">

var _gaq = _gaq || [];

_gaq.push(['_setAccount', 'UA-20741674-3']);

_gaq.push(['_trackPageview']);

(function() {

var ga = document.createElement('script'); ga.type = 'text/javascript';
ga.async = true;

ga.src = ('https:' == document.location.protocol ? 'https://ssl' :
'http://www') + '.google-analytics.com/ga.js';

```

Figure 4. Source Code

Then go to Google Analytics home page and click on account name to see statistics of library website

ANALYSIS AND DISCUSSION

The usability of AIGS library website was measured during the period February 2011 to January 2013 using Google Analytics. The data has been analyzed and presented in the form of tables and graphs.

Frequency of Visits to Library Website

Table 1 shows the frequency of visits to library website by users during February 2011 to February 2013. It is evident from the table 1 that a total of 8304 visitors viewed a total of 22,213 web pages of the library website.

A total of 4906 new visitors (59.10%) and 3398 (40.90%) returning visitors visited the library website. They spent an average of 3: 25 min. per visit in viewing the library website. An average page visited during visit was only 2.67 pages.

Table 1. Frequency of visits to Library website by users

Month & Year	No. of Visitors	Page Views	Avg. Pages per Visits	Avg. visit Duration (Hrs.Min.Sec.)	New Visitor	Returning visitors	Bounce Rate*
Feb-Jul 2011	1289	4325	3.36	00.03.01	833 (64.6%)	456 (35.4%)	34.13%
Aug - 2011 - Jan-2012	2457	6571	2.67	00.03.45	1361 (55.4%)	1096 (44.6%)	49.04%
Feb - Jul 2012	2127	5490	2.58	00.03.15	1264 (59.4%)	863 (40.6%)	53.50%
Aug -2012 -Feb 2013	2431	5827	2.40	00.02.54	1448 (59.6%)	983 (40.4%)	59.69%
Total	8304	22,213	2.67	00.3:25	4906 (59.10%)	3398 (40.90%)	50.99%

* Bounce Rate is the percentage of single-page visits

Countrywise Distribution of Visitors to Library Website

The college library website was also visited by the users of various countries (Table-2). The highest numbers of

visitors visited the web page were from India (7373 visitors) followed by United States (128 visitors) and Australia (47 visitors). The data presented in the table clearly indicates that the library website has also been used by different country users (Figure-5).

Table 2. Countrywise distribution of library webpage visitors

Country	No. of Visitors	Avg. Pages per Visits	Avg. visit Duration (Hrs.Min.Sec.)	% New Visits	Bounce Rate
India	7,373	2.72	00:03:36	56.49%	50.03%
(not set)*	634	2.83	00:02:39	76.56%	49.25%
United States	128	2.10	00:01:13	77.34%	59.38%
Australia	47	1.47	00:00:22	89.36%	80.85%
United Kingdom	36	2.03	00:01:27	75.00%	69.44%
Pakistan	26	1.23	00:00:19	80.77%	92.31%
Sri Lanka	23	3.00	00:04:22	52.17%	52.17%
Malaysia	14	1.50	00:00:10	100.00%	85.71%
Saudi Arabia	12	1.92	00:00:30	83.33%	58.33%
Canada	11	1.09	00:00:07	81.82%	90.91%

(not set)* - The country which is not recognized by the Google Analytics

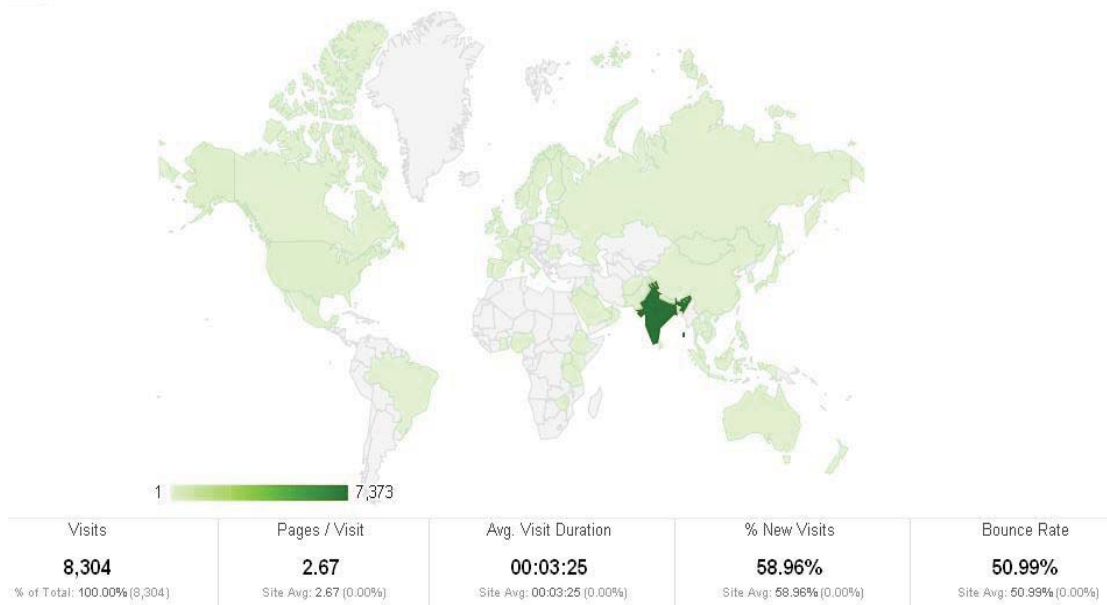


Figure 5. Use of Website

Statewise distribution of visitors to library website

Study also made an attempt to measure the usability of library website by users of different Indian states. It can be

seen from the table 3 that a total of 7373 visitors visited the library website during February 2011 to February 2013. Out of 7373 visitors majority are from Karnataka state (5849) followed by Tamilnadu (280) and Maharastra (248).

Table 3. State wise Distribution of Visitors to Library Web Page

State	No. of Visitors	Avg. Pages per visit	Avg. Visit Duration (Hrs.Min.Sec.)	Percentage of New Visits	Bounce Rate
Karnataka	5849	2.88	00.03.58	49.51	45.58%
Tamil Nadu	280	2.28	00.02.44	80.71	61.79%
Maharashtra	248	2.43	00.03.17	76.21	54.44%
Delhi	193	1.71	00.01.17	93.26	78.24%
West Bengal	155	2.43	00.03.12	79.35	59.35%
Andhra Pradesh	151	1.92	00.01.42	80.13	68.21%
Kerala	124	2.24	00.02.02	86.18	66.67%
Uttar Pradesh	77	1.82	00.01.34	84.42	77.92%
Gujrath	58	1.83	00.01.35	91.38	81.03%
Rajasthan	48	1.81	00.01.32	68.75	70.83%
Punjab	46	1.83	00.01.29	91.30	71.74%
Haryana	41	1.46	00.00.49	87.80	80.49%
Madhya Pradesh	27	1.33	00.00.14	96.30	85.19%
Assam	21	1.48	00.00.43	76.19	75.19%
Bihar	21	2.10	00.02.16	95.24	76.19%
(not set)*	12	2.54	00.01.49	92.31	61.54%
Orissa	12	1.42	00.00.45	91.67	83.33%
Pondicherry	7	1.29	00.00.17	100.00	71.43%
Tripura	2	1.00	00.00.00	100.00	100.00%
Jammu and Kashmir	1	4.00	00.02.07	100.00	0.00%
All the States	7373	Avg. 2.72	Avg.3:36 Min.	Avg. 56.49	50.03%

(not set)* - The state is not recognized by the Google Analytics

Frequency of Visits to Various Web Pages of the Website

Study also made an attempt to know the popular webpage of the library website. For this purpose the frequency to various web pages of the web page are analyzed using Google Analytics. Only top 10 most visited web pages were chosen out of 89 web pages of the library website. Not surprisingly home page was the most frequently visited web page (51.99%) followed by library services web page (41.55%) and question paper archives (14.11%).

Table 4. Frequency of Visits to Various Web Pages of the Website

Web page	Frequency	Percentage
AIGS LIBRARY & INFORMATION CENTER (Home Page)	4,318	51.99
Library Services - AIGS LIBRARY & INFORMATION CENTER	3,454	41.59
Question papers - AIGS LIBRARY & INFORMATION CENTER	1172	14.11
BBM Question papers - AIGS LIBRARY & INFORMATION CENTER	1109	13.35
Syllabus - AIGS LIBRARY & INFORMATION CENTER	1029	12.39
BCA-FAD - AIGS LIBRARY & INFORMATION CENTER	997	12
BBM - AIGS LIBRARY & INFORMATION CENTER	990	11.92
BCA Question Papers - AIGS LIBRARY & INFORMATION CENTER	758	9.12
Announcements - AIGS LIBRARY & INFORMATION CENTER	681	8.20
Student Hand Book - AIGS LIBRARY & INFORMATION CENTER	631	7.60

Use of Various Keywords

One of the objectives of the study was to know the use of various keywords used to search library website. It is evident from the table 5 that a total of 1926 keywords were used

to search library website. Out of 1926 keywords, study has selected only most frequently used (Top 20) keywords. It can be seen from the table that 'aigs library' keyword was used by 1523 (42.06%) visitors followed by "Aigslibrary" (299 visitors) and "aigs library bangalore" (136 visitors).

Table 5. Use of Various Keywords to Search Website

Keyword	No. of Visitors	Avg. Pages per Visits	Avg. Visit Duration (Hrs.Min.Sec.)	Bounce Rate
aigs library	1,523	3.12	0:04:21	41.37%
(not provided)*	943	2.60	0:04:19	58.43%
Aigs library	299	2.96	0:04:57	48.83%
aigs library Bangalore	136	4.83	0:05:26	18.38%
acharya library	128	4.55	0:04:40	16.41%
acharya institute of graduate studies library	107	4.41	0:04:51	26.17%
bbm question papers	87	1.49	0:02:28	73.56%
acharya institute of graduate studies	44	3.64	0:04:59	34.09%
Aigs libraray	42	1.36	0:00:27	80.95%
Aigs	31	1.97	0:00:46	61.29%
aigs libraray	27	1.30	0:02:25	81.48%
acharay institue of grauationun	25	3.20	0:16:42	36.00%
ugc net e certificate online	19	1.16	0:00:21	89.47%
numerical methods question papers bca	16	1.12	0:00:12	87.50%
http://sites.google.com/site/aigslibrary	14	3.21	0:04:19	14.29%
ugc net certificate verification	12	1.17	0:00:03	91.67%
aigs library and information center	11	3.36	0:02:30	27.27%
acharya institute of management library	10	5.40	0:11:25	20.00%
aigs library information and center	10	6.10	0:22:36	0.00%
Acharya library	9	6.00	0:04:27	11.11%

(not provided)* - Keywords not recognized by the Google Analytics

Mode of Searching the Library Website

Generally any website can be searched through search engines or directly typing the URL of the site in web browser or by clicking a link from another website (referral search). This study made an attempt to know the how the library website was searched by the users.

It was found that 5891(70.94%) users used search engines, 337 (4.06%) of them used referral search and 2076 (25%) users directly typed the URL of the web page in web browsers. It is noticed that not surprisingly majority of visitor accessed the library website through search engine. This clearly indicates that search engines are most popular among the users to search library website.

Table 6. Mode of Searching the Library Website

Mode of Search	Frequency	% Frequency
Search engine	5891	70.94%
Referral search	337	4.06%
Direct search	2076	25.00%
Total	8304	100%

Use of Various Web Browsers to Search Library Website

Table 7 shows the use of various browsers to search library website. This information is helpful to website developer to match compatibility with browsers. It is found that Firefox was most popular among the users which is accounted for

3609 (43.46%) followed by Google chrome 2636 (31.74%) and Internet Explorer 1293 (15.57%).'

Table 7. Use of Various Web Browsers to Search Library Web Site

Browser	Frequency	Avg. Pages/ Visits	Avg. Visit Duration	Bounce Rate
Firefox	3,609	2.45	0:03:45	54.31%
Chrome	2,636	3.05	0:03:23	45.37%
Internet Explorer	1,293	2.57	0:03:03	54.37%
Opera Mini	320	2.76	0:02:27	50.62%
Safari	135	2.04	0:01:40	48.89%
Opera	132	2.8	0:03:20	43.94%
Android Browser	100	2.79	0:03:22	55.00%
Mozilla Compatible Agent	47	2.23	0:01:35	55.32%
Nokia5233	23	4.43	0:03:41	13.04%
RockMelt	9	2.89	0:02:22	33.33%

DISCUSSION AND CONCLUSION

The finding of the study clearly shows the usability of library website during February 2011 to February 2013. During this period a total of 8304 visitors used the library website. The average per visit during this period was 2.67. They spent an average of 3.25 minutes per visit. Not surprisingly major of the visitors were from India (7373 out of 8135). It is also found the library website viewed from US (128), AU (47), UK (36). This clearly indicates the library website is also popular among other countries.

State wise distribution of visitor shows that the major of them were from Karnataka (79.33%), followed by Tamil Nadu (3.79%) and Maharashtra (3.36%). The home page of the library website has been visited by majority of users (51.99%). Regarding the use of keywords for study library website it was found that the keyword "aigs library" was most popular used by 1523 users, other most frequently used keywords "Aigs library" (299) followed by "aigs library Bangalore" (136). Study clearly shows that search engine was most popularly used by users to search library website and the 'Firefox' (43.46%) was frequently used browser. Thus it can be conducted that the Google analytics, is great tool for measuring the usability of website. It offers a user friendly and report that allow understanding the usage of library website by various users.

Google Analytics is a great tool for constructing user-centered websites. It offers a user-friendly interface and informational reports that allow for quick identification of problems. The Google Analytics will help libraries in knowing more about the interaction between library website and visitors.

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