Building a Cloud-based Online Directory of Dissertations: A Novel Approach

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Abstract

Purpose: The objective of the present study is to demonstrate a novel method of creating a data-driven website with browse and search functionalities, with no cost, no coding and minimum efforts, using free tools.

Methodology: The paper demonstrates creation of a simple browse-and-search interface for any data stored on a cloud storage service. As an illustration, an online directory of postgraduate dissertations submitted to Tumkur University has been built using Google Drive cloud storage service, esome Table web application and Google Sites. Various search parameters have been defined.



Findings: It is possible to add new entries by either creating a Google Form and enabling record submissions, or by adding the new records directly to the Google Sheets file. This new method may be used by librarians and information specialists to create data-driven websites that the user community needs.

Originality/Value: The present study has demonstrated the creation of a user-friendly data-driven website in the form of an online directory, using free services, namely, Google Drive, Awesome Table, and Google Sites.

Keywords : Online directory, cloud storage, Google Drive, Awesome Table, Google Sites

1. Introduction

Cloud computing has revolutionized the way data is stored, processed, and accessed in the present-day landscape. At its core, cloud computing involves delivering computing services over the internet, offering scalable resources without the need for local infrastructure. Cloud storage, a vital component of cloud computing, provides a secure and accessible repository for digital assets. In an era characterized by information explosion, libraries and information centres benefit immensely from cloud solutions, facilitating efficient data management, collaboration, and accessibility.Cloud computing can significantly improve the efficiency and user experience of digital libraries by reducing costs, increasing flexibility, and fostering collaboration among libraries(Abidi et al., 2012). The cloud's dynamic nature empowers institutions to adapt to evolving needs, ensuring seamless integration and utilization of resources in the ever-evolving digital environment.

2. Google Drive

Google Drive has been studied in the context of libraries, particularly digital libraries. Digital libraries provide access to reading sources that can be accessed anywhere and anytime, overcoming the limitations of conventional libraries(Taqi et al., 2023). The use of Google Drive as a management system for scientific publications has been explored, with the system allowing for the collection, cataloguing, and analysis of scientific papers in a digital form. A bibliometric analysis by Salleh & Hussain (2021) on the use of Google Drive in libraries has reveals an increasing growth rate of research on Google Drive. Overall, Google Drive has been recognized as a valuable tool for libraries, offering benefits such as easy access, cost-effectiveness, and paperless information systems.

3. Data-driven websites

Data-driven websites have become important due to their potential to improve access to resources and services, enhance usability, and offer new services. These websites are created using database-driven approaches, where data is entered into a database and dynamically generates appropriate pages based on user search terms(Berndtsson et al., 2020). This eliminates the need for manually coding each page and allows for easy updates and revisions. Database-driven websites require fewer files and do not rely on static HTML pages, making them more efficient and scalable.

4. Awesome Table

Awesome Table(*Awesome Table*, 2023)is a versatile tool, which simplifies the creation of dynamic and interactive data-driven websites without the need for coding expertise. Tailored for user-friendly integration with Google



Sheets, Awesome Table transforms raw data into visually compelling content effortlessly. Its applications extend seamlessly to libraries, enabling the construction of diverse websites, from comprehensive catalogues to user-friendly directories. For libraries, Awesome Table offers a cost-effective solution, allowing professionals to showcase collections or data records dynamically. With customizable templates and easy embedding capabilities, it is a powerful asset for information professionals seeking to enhance accessibility of and user-engagement in data.

5. Objective of the Study

The objective of the present study is to demonstrate a novel method of creating a data-driven website with browse and search functionalities, with no cost, no coding and minimum efforts, using free tools. As an illustration, an online directory of postgraduate dissertations submitted to Tumkur University has been developed.

6. Tools Used

Following are the tools used for the development of the online directory:

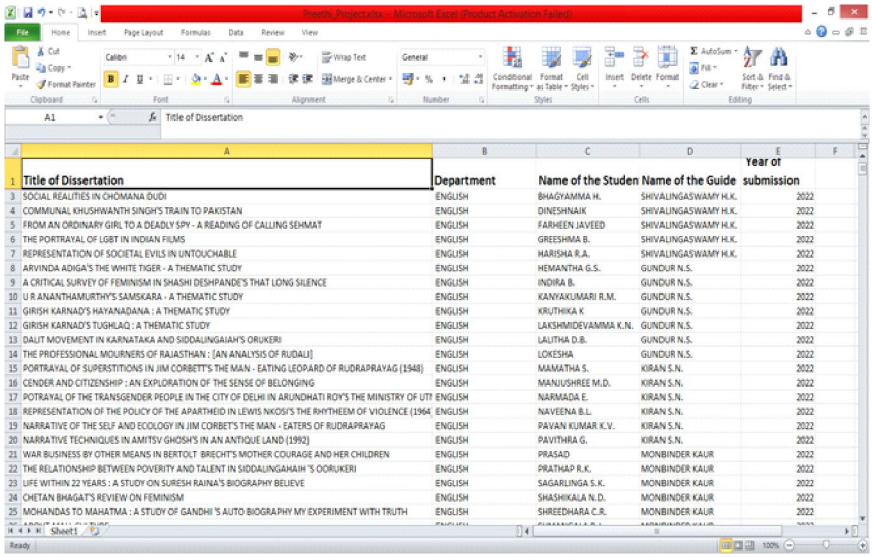
* Google Drive (Google Sheets application)
* Awesome Table (www.awesome-table.com)
* Google Sites

7. Implementation

7.1. Collection and Processing of Data: The data pertaining to the postgraduate dissertations was collected by the authors by personally visiting each postgraduate department and the University library. Each record contains the title of dissertation, name of the department, name of the student, name of the guide and year of submission. Data on the dissertations submitted during the most recently concluded academic

year, i.e., 2022 was collected. A total of 417 records from 21 postgraduate departments were collected. The records which were in Kannada language were recorded in Unicode (UTF-8). The records were stored in a Microsoft Excel (.xlsx) file. For better presentation and readability the data in English was converted to upper case. Figure 1 shows the Microsoft Excel file containing the records of dissertations.

Figure 1. Excel Spreadsheet Containing Dissertation Records



Title of Dissertation	Department	Name of the Studen	Name of the Guide	Year of submission
SOCIAL REALITIES IN CHOMANA DUDI	ENGLISH	BHAGYAMMA H.	SHIVALINGASWAMY H.K.	2022
COMMUNAL KHUSHWANTH SINGH'S TRAIN TO PAKISTAN	ENGLISH	DINESHNAIK	SHIVALINGASWAMY H.K.	2022
FROM AN ORDINARY GIRL TO A DEADLY SPY - A READING OF CALLING SEHMAT	ENGLISH	FARHEEN JAVEED	SHIVALINGASWAMY H.K.	2022
THE PORTRAYAL OF LGBT IN INDIAN FILMS	ENGLISH	GREESHMA B.	SHIVALINGASWAMY H.K.	2022
REPRESENTATION OF SOCIETAL EVILS IN UNTOUCHABLE	ENGLISH	HARISHA R.A.	SHIVALINGASWAMY H.K.	2022
ARVINDA ADIGA'S THE WHITE TIGER - A THEMATIC STUDY	ENGLISH	HEMANTHA G.S.	GUNDUR N.S.	2022
A CRITICAL SURVEY OF FEMINISM IN SHASHI DESHPANDE'S THAT LONG SILENCE	ENGLISH	INDIRA B.	GUNDUR N.S.	2022
U R ANANTHAMURTHY'S SAMSKARA - A THEMATIC STUDY	ENGLISH	KANYAKUMARI R.M.	GUNDUR N.S.	2022
GIRISH KARNAD'S HAYANADANA : A THEMATIC STUDY	ENGLISH	KRUTHIKA K	GUNDUR N.S.	2022
GIRISH KARNAD'S TUGHLAQ : A THEMATIC STUDY	ENGLISH	LAKSHMIDEVAMMA K.N.	GUNDUR N.S.	2022
DALIT MOVEMENT IN KARNATAKA AND SIDDALINGAIAH'S ORUKERI	ENGLISH	LALITHA D.B.	GUNDUR N.S.	2022
THE PROFESSIONAL MOURNERS OF RAJASTHAN : [AN ANALYSIS OF RUDALI]	ENGLISH	LOKESHA	GUNDUR N.S.	2022
PORTRAYAL OF SUPERSTITIONS IN JIM CORBETT'S THE MAN - EATING LEOPARD OF RUDRAPRAYAG (1948)	ENGLISH	MAMATHA S.	KIRAN S.N.	2022
GENDER AND CITIZENSHIP : AN EXPLORATION OF THE SENSE OF BELONGING	ENGLISH	MANJUSHREE M.D.	KIRAN S.N.	2022
POTRAYAL OF THE TRANSGENDER PEOPLE IN THE CITY OF DELHI IN ARUNDHATI ROY'S THE MINISTRY OF UTI	ENGLISH	NARMADA E.	KIRAN S.N.	2022
REPRESENTATION OF THE POLICY OF THE APARTHEID IN LEWIS NKOSI'S THE RHYTHEEM OF VIOLENCE (1964	ENGLISH	NAVEENA B.L.	KIRAN S.N.	2022
NARRATIVE OF THE SELF AND ECOLOGY IN JIM CORBET'S THE MAN - EATERS OF RUDRAPRAYAG	ENGLISH	PAVAN KUMAR K.V.	KIRAN S.N.	2022
NARRATIVE TECHNIQUES IN AMITSV GHOSH'S IN AN ANTIQUE LAND (1992)	ENGLISH	PAVITHRA G.	KIRAN S.N.	2022
WAR BUSINESS IBY OTHER MEANS IN BERTOLT BRECHT'S MOTHER COURAGE AND HER CHILDREN	ENGLISH	PRASAD	MONBINDER KAUR	2022
THE RELATIONSHIP BETWEEN POVERITY AND TALENT IN SIDDALINGAHAIH 'S OORUKERI	ENGLISH	PRATHAP R.K.	MONBINDER KAUR	2022
LIFE WITHIN 22 YEARS : A STUDY ON SURESH RAINA'S BIOGRAPHY BELIEVE	ENGLISH	SAGARLINGA S.K.	MONBINDER KAUR	2022
CHETAN BHAGAT'S REVIEW ON FEMINISM	ENGLISH	SHASHIKALA N.D.	MONBINDER KAUR	2022
MOHANDAS TO MAHATMA : A STUDY OF GANDHI 'S AUTO BIOGRAPHY MY EXPERIMENT WITH TRUTH	ENGLISH	SHREEDHARA C.R.	MONBINDER KAUR	2022

7.2. Uploading and Publishing of Records: A new Google account was created and the Microsoft Excel spreadsheet file was uploaded on Google Drive. The file was opened using Google Sheets application and saved as Google Sheets file on the Google Drive. For the rest of the process, Google Sheets file was used as it provides ready integration with Awesome Tables. To provide public access to the data in the file, it is important to change the *Share* settings. Using the *Share* option, the *General access* was changed from *restricted* to *Anyone with the link.*



7.3. Defining Awesome Table filters: Awesome Table uses pre-defined 'filters' to provide search or drop-down list in its interface. These filters have to be defined in the Google Sheets file, just below the column headings (e.g. row 2). Awesome Table offers the following filters:

Table 1. List of Filters available in Awesome Table

Filter	Function
StringFilter	To filter columns containing free text.
Number Range Filter	To filter columns containing numbers.
Date Filter	To filter columns containing dates.
CategoryFilter	To filter columns containing values from a list (choose from a list).
csvFilter	To filter columns containing a list of comma separated values
Dependent Categories filter	To filter columns containing values

Among the filters listed in the above table, the following filters were used for the study:

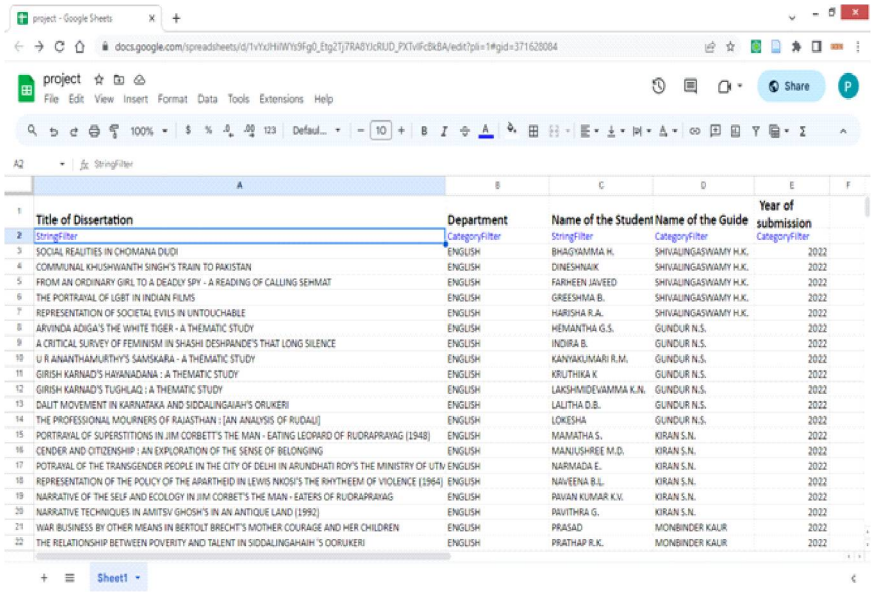
Table 2. Filters used for the Directory

Field	Contents	Filter
Title of dissertation	Title of the dissertation	StringFilter
Department	Name of the PG Department	CategoryFilter
Name of the student	Name of the student	StringFilter
Name of the Guide	Name of the Guide	CategoryFilter
Year of submission	Year of submission of dissertation to university	CategoryFilter



Figure 2 shows the Google Shets file with Awesome Table filters defined under the column headings.

Figure 2. Google Sheets file with Awesome Table filters defined



project - Google Sheets

project

File Edit View Insert Format Data Tools Extensions Help

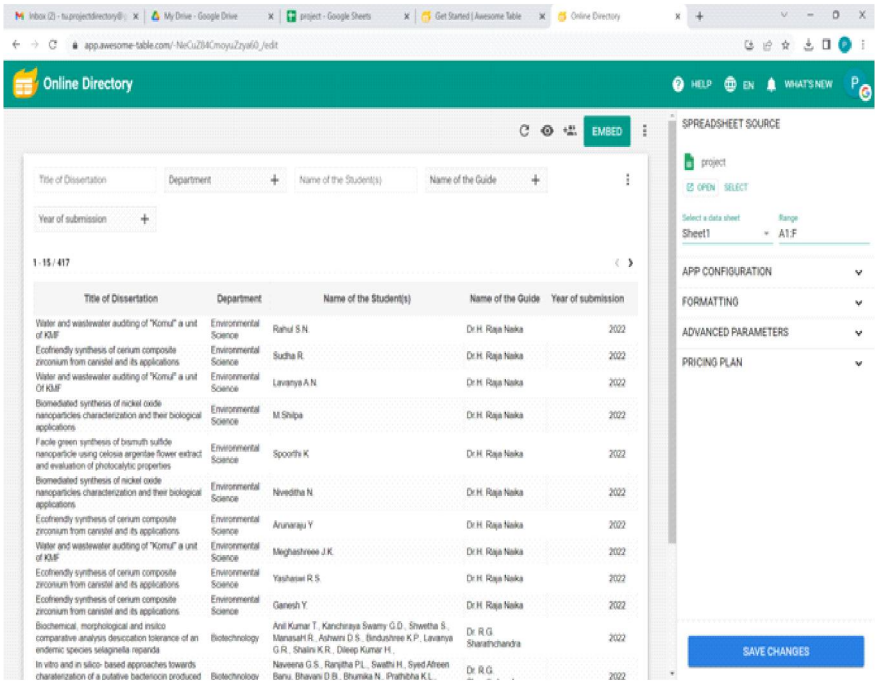
Share

	Title of Dissertation	Department	Name of the Student	Name of the Guide	Year of submission
2	StringFilter	CategoryFilter	StringFilter	CategoryFilter	CategoryFilter
3	SOCIAL REALITIES IN CHOMANA DUDI	ENGLISH	BHAGYAMMA H.	SHIVALINGASWAMY H.K.	2022
4	COMMUNAL KHUSHWANTH SINGH'S TRAIN TO PAKISTAN	ENGLISH	DINESHNAIK	SHIVALINGASWAMY H.K.	2022
5	FROM AN ORDINARY GIRL TO A DEADLY SPY - A READING OF CALLING SEHMAT	ENGLISH	FARHEEN JAVEED	SHIVALINGASWAMY H.K.	2022
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21	WAR BUSINESS BY OTHER MEANS IN BERTOLT BRECHT'S MOTHER COURAGE AND HER CHILDREN	ENGLISH	PRASAD	MONBINDER KAUR	2022
22	THE RELATIONSHIP BETWEEN POVERITY AND TALENT IN SIDDALINGAHAIH 'S OORUKERI	ENGLISH	PRATHAP R.K.	MONBINDER KAUR	2022

Sheet1

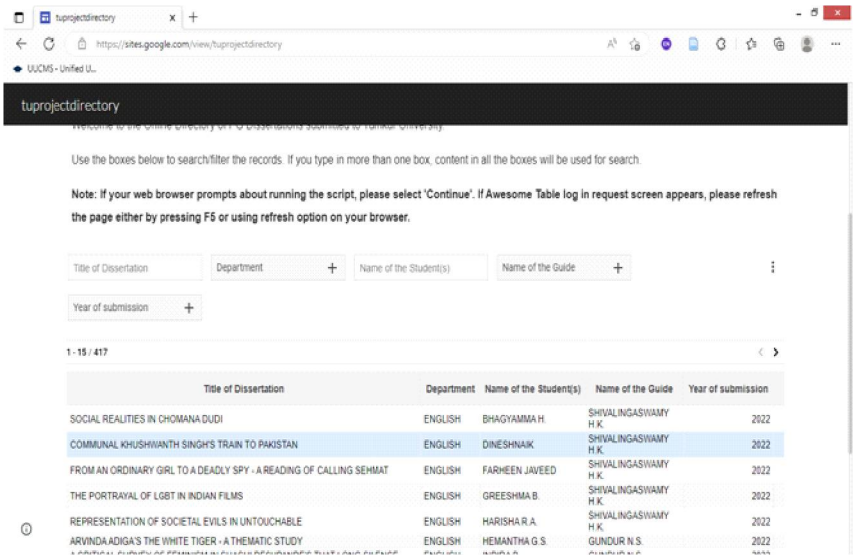
7.4. Creating Awesome Table app: Awesome Table app offers a browse and search interface for any data stored in a Google Sheets file. This app, once created, can be embedded on to a Google site. A new account was created on Awesome Table website. A new Awesome Table app was created for the data stored in Google Sheets by connecting the Google Sheets file with Awesome Table app. Appropriate adjustments were made in the configuration. The Awesome Table view created for the dissertations file is shown in Figure 3.

Figure 3. Awesome Table app for dissertation records



7.5. Creating Google Site and embedding Awesome Table app: A new Google site was created for the purpose of displaying the dissertation records. The link to Awesome Table app was copied and embedded on to the newly created Google site using the embed option. The final view of the Google site is shown in Figure 4. The directory can be searched using title and name of the student. Drop-down lists have been provided for name of the department, name of the Guide and year of submission.

Figure 4. Google Site Homepage with embedded Awesome Table app



7.6. Creating short URL: The default URL assigned by Google Sites to the newly created site is https://sites.google.com/view/tuprojectdirectory. As this URL is lengthy, a short URL was created using TinyURL service. The directory is accessible at https://tinyurl.com/dissertationdirectory.

8. Conclusion

The present study has demonstrated the creation of a user-friendly data-driven website in the form of an online directory, using free services, namely, Google Drive, Awesome Table, and Google Sites. New records can be added by directly appending the new records in the Google Sheets file or by developing a Google Form and allowing the submission of records. Library and information professionals can harness the power of this novel approach to build data-driven websites needed for the user community.

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