

UNION CATALOGUE OF MALAY MANUSCRIPTS IN MALAYSIA

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ABSTRACT

In this paper, we elucidate the importance of developing a union catalogue of Malay Manuscripts in Malaysia. Currently, all Malay manuscripts are stored in various locations around Malaysia. To form a unified collection of Malay manuscripts in Malaysia an Information System was developed to store the relevant information of the manuscripts. The information system is called a Union Catalogue of Malay Manuscripts in Malaysia. The objectives of the Union Catalogue are to provide an access to information pertaining to Malay manuscripts in Malaysia, an assistance for researchers to conduct research in manuscripts, and a new dimension to the field of big data in Islamic and Malay studies. The methodology used in the study is archival record analysis of the case study. As a result, an information system prototype was developed and enhanced for initial data storage. The completed prototype will be able to perform terminological analyses of Malay words, which are derived from Arabic words in the future.

Keywords: Malay Manuscripts; Union Catalogue; Digital Libraries and Archives; Information System

INTRODUCTION

Malay manuscripts in Malaysia are kept by various institutions and individuals. Several institutions that have Malay manuscripts such as National Library of Malaysia, National Archive and Malaysian Institute for Language and Literature (Dewan Bahasa dan Pustaka) have published series of catalogues of Malay manuscripts as reference documents for users. Nevertheless, these documents are scattered and kept by the respective institutions. Realizing the importance to have a database that store relevant information for manuscript accessibility, an Information System of Union Catalogue of Malay Manuscripts in Malaysia was developed in early 2012 by the Kulliyah of ICT of International Islamic University Malaysia (IIUM).

This database can be regarded as a searching mechanism for Malay manuscripts in Malaysia that can be accessed through the Internet. Initially, this database will function as informer of who keeps what and where. In near future after resolving the issue of copyrights and permissibility, this database will enable users to view the contents of respective manuscripts.

OBJECTIVE

The development of this information system has manifold objectives. The first objective is to provide an access mechanism to Malay manuscripts in Malaysia. Researchers and users who are interested with Malay manuscripts can easily search the available manuscripts based on the authors, titles, and locations of the manuscripts: call number and address. The second objective is to provide academic assistance for researches in manuscripts. Researchers can easily identify the specialization of each manuscript in various fields of Malay and Islamic studies. The third objective is to provide a new dimension in the field of big data especially in relation to Islamic and Malay studies. This new dimension is a novelty contribution to the field by expanding its horizon not only from computer data but also from other sources.

METHODOLOGY OF TERMINOLOGICAL ANALYSES

The continuation from the development of this database is to conduct terminological analyses of Malay words that are derived from Arabic words from ten main subjects. Those subjects include *Fiqh*, *Tawhid/Usuluddin*, *Qur'an/Tafsir*, *Tasawwuf*, *Hadith*, *Falaq/Astronomy*, medical, *Nahu*, Islamic history

and *Usul Fiqh*. For initial analyses, ten manuscripts will be selected to represent each subject. The selection was done according to the availability and accessibility. These manuscripts that represent the different subjects from Malay manuscripts will be analysed to identify the Arabic words and Arabic root words of the Malay terms/words used in Malay manuscripts. The selection of those words will be based on these two criteria:

- i. Malay words that are derived from Arabic root words***
- ii. Arabic words that are used in Malay manuscripts***

From research method point of view, the data collection technique of this study is synonym with archival record analysis of the case study. The source of archival records can be either from the computer files or printed materials (Yin, 2009). Under the flagship of purposive sampling, the materials that are studied under the case study will generate information-rich sources (Pickard, 1993).

The outcome from this study will provide a blueprint in the field of big data in relation to Malay manuscripts and Islam. Nowadays, big data always connotes with extraction of computer data to benefit organisations. This new dimension of big data is a novelty that provides a new direction on how to conduct research on Islamic manuscripts.

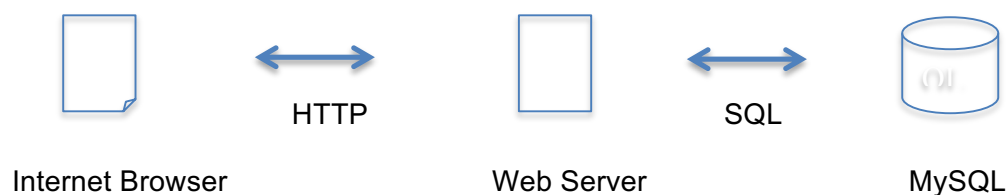
PILOT PROJECT

The idea of having a union catalogue for Malay manuscripts was conceived in 2012 as class activity in the Manuscript Laboratory, IIUM. The idea was discussed with other institutions for project collaboration. However, outcomes of the discussion were varied because of the nature of the project.

In 2013 the project started with a prototype development initiated by two master students majoring in Library and Information Science (MLIS). One student developed the prototype for the catalogue system and another was assigned to insert the titles of Malay manuscripts into the system from published catalogues. The prototype was developed using an agile software development approach, which involves continuous improvement (Larman, 2004). The catalogue system should be able to provide an accurate number of Malay manuscripts available in Malaysia (Wan Ali Wan Mamat, 2014).

The completed prototype was developed using XAMPP, which is an open source web-publishing tool. It contains a web server, PHP scripting and MySQL database. Open source web-publishing tool (XAMPP) is used for the prototype development because of its availability and cost effective in producing a web application (Hertel, Niedner & Herrmann, 2003). According to Dvorski (2007), XAMPP has been used for development and testing as it supports cross-platform and is small in size and portable. In addition, it uses a simple client-server architecture as depicted in Figure 1 for hosting the union catalogue of Malay manuscript. The web server is responsible to host HTML and PHP files that can be viewed by users. The MySQL database is used to store the titles, locations, countries, call numbers, and subjects of Malay manuscripts.

FIGURE 1: The Client-Server Architecture for Union Catalogue of Malay Manuscript



Moreover, the web server is hosted on a server which uses a linux distributed operating system, CentOS version 7. CentOS is an open source operating system that is also cost effective and best suited to be used by a server because of its stability. Both software are constantly updated and maintained due to its popularity, which makes it suitable to host the web based catalogue (“The Red Hat Enterprise Linux Advantage”, 2010; Hu, Nanda & Yang, 2012).

The initial prototype for catalogue database consists of five (5) columns for title, location of manuscripts, country, subject and call number (Figure 2) and user can filter their search according to title or call number. The prototype remains in a private domain for user access as class activity in Manuscript Laboratory, IIUM.

FIGURE 2: The initial prototype of Union Catalogue of Malay Manuscript database

No.	Title	Location	Country	Subject	Call Number	Action
1	Hikayat Raja Jumjumah	PNM	Malaysia	-	Cod.Oc.1739	View
2	Klabb tasawuf	PNM	Malaysia	-	MSS2236 (E)	View
3	'Aqidah Al-Awam	PNM	Malaysia	-	MSS3787	View
4	(Al-Hikam Al-Ataiyy) A work about tasuf	UM	Malaysia	-	Manuskrip 15	View
5	(Hikayat Muhammad Hanafiah) Hikayat Ali Hanafiah	UM	Malaysia	-	Manuskrip 9	View
6	(Masail al-muhtadi li khwan al-mubtadi) Manuscript concerning various aspects of Islamic theology	UM	Malaysia	-	Manuskrip 14	View
7	(Sharh) Matn al-Ajuniyyah	MI	Malaysia	Nahu	MI 166	View
8	(Sharh) Matn Awamil al-Jurjani	MI	Malaysia	Nahu	MI 343	View
9	(Syair anak dagang) Dua bush shair Melayu	UM	Malaysia	-	Manuskrip 10	View
10	(Syarat wudu) Klabb Islam	UM	Malaysia	-	Manuskrip 11	View
11	-	PNM	Malaysia	-	MSS1621	View
12	-	MI	Malaysia	Tidak diketahui	MI 273	View
13	-	MI	Malaysia	Nahu	MI 274	View

CURRENT PROJECT

In 2015, an application was made to IIUM for a research grant. At the end of 2015 the grant was approved. Three main players were involved: a computer expert, Islamic theologian and a librarian specializing in Malay manuscript. The prototype of the catalogue was improved with a few enhancements. The enhancements include migration from XAMPP to dedicated Apache Web Server, latest PHP scripting and MySQL database. The migration was done to improve the stability and availability of the catalogue for growing number of records. According to Koffer (2005), benefits of separate installation include flexibility of versions, better comprehension of programs and simplified component's management. In other words, it enables complete control over the programs. Some functions also were added to the prototype to allow *modification* and *deletion* of the existing titles.

A dedicated server was purchased to host the prototype for local area network accessibility and currently under configuration. The layout and design of the prototype is undergoing incremental changes for better user experience (Garrett, 2010). Figure 3 depicted the latest web design which has taken examples of few other manuscript sites, with the combination of modern look. The design also maintained the searching feature from the previous prototype, but has improved in terms of its filtering, which user can choose to filter based on the 5 different fields. However, as the number of titles increases in collection, a search function will need an optimization for faster search results. Thus, a better algorithm will be implemented to the existing PHP scripting.

FIGURE 3: The latest design of Union Catalogue of Malay Manuscripts in Malaysia.

#	Title	Location	Country	Subject	Call Number
1	Sayer al-eaikin ita ibadah rabb al-alamim	PNM	Malaysia	Ibadat	MSS4557
2	Sirat al-mustaqim	PNM	Malaysia	Fiqh Ibadat	MSS4556
3	Bustan al-eaikin	PNM	Malaysia	Tasawuf	MSS4555
4	Ruba' al-nikah	PNM	Malaysia	Nikah	MSS4554
5	Catatan doa	PNM	Malaysia	Doa	MSS4553 (D)
6	Catatan ringkas martabat lujah	PNM	Malaysia	Martabat lujah	MSS4553 (C)
7	Perihal menyakin perniash sembahyang	PNM	Malaysia	Sembahyang	MSS4553 (B)
8	Mirat al-mubtadin fi tarhibun al-muthalibin wa tarhbi al-eaikin	PNM	Malaysia	Tasawuf	MSS4553 (A)
9	Makrifat al-Islam	PNM	Malaysia	Pengenalan agama Islam	MSS4552 (B)
10	Kitab makrifatullah	PNM	Malaysia	Ilmu tauhid	MSS4552 (A)
11	Mirat al-tulab fi makrifat al-ahkam al-eyariah	PNM	Malaysia	Syariat Islam	MSS4551
12	Umdat al-muhtajin ila sukk maslek al-mufridin	PNM	Malaysia	Zikir kesufian	MSS4550
13	Perbagai catatan hedia, firman Allah dan tasawuf	PNM	Malaysia	-	MSS4549 (C)
14	Jauhar al-tauhid	PNM	Malaysia	Sifat-sifat Allah	MSS4549 (B)
15	Hadis arbain	PNM	Malaysia	-	MSS4549 (A)

CATALOGUE SUSTAINABILITY IN TECHNOLOGICAL PERSPECTIVES

Efficiency contributes to technology sustainability (Schmidt, Ereka & Kolbe, 2009). Since the physical manuscripts have private access and scattered, the centralized union catalogue system provides efficiency to researchers in accessing the information remotely. Researchers are also able to retrieve information more efficiently through the search feature and filter according to fields. In the future, the system also will implement more functionalities such as advanced search like keyword search.

Moreover, it is crucial to be maintainable, available and accessible for a collection to be considered as a library (Mohd Hilmi Md. Rifin & A.N.Zainab, 2007). In being sustainable or maintainable, Union Catalogue of Malay Manuscripts enables user to add new records through admin access. At the moment, the information is added manually by acquiring data from hard copy records like books. In the future, the system would be able to gather more information of the manuscript from related websites and other online sources through crawler.

Besides, dedicated Apache web server has been used in order to cater the growing number of manuscript records in the future. By utilizing separated components of web server and database server, the system is more stable to cater more records. Besides, both of the open source software are frequently updated and maintained due its popularity, hence ensures the stability of the online database.

RESULT

The database has successfully gathered 8216 titles of Malay manuscripts that are kept by various institutions by 2017. The compilation emphasizes on the manuscripts' call numbers (based on the institutions), titles, authors, locations, and subject classifications. However, due to some constraints those manuscripts cannot be viewed digitally from this database. The hindrances to view those manuscripts include the issue of copyrights and also their availability. This database will enable researchers to find relevant Malay manuscripts in various subject matters.

During the process of data migration from printed materials into this database, the group members had discovered a few inconsistencies especially things that are related to titles and call numbers. The inconsistencies can be interpreted as indicators to show the limitation of undigitised catalogues, which triggers the needs to have central database for Malay manuscripts. As of May 2017, 8216 titles of manuscripts were inserted into the prototype (catalogue system) (Akademi Pengajian Melayu University Malaya, 1992; Perpustakaan Negara Malaysia, 1993, 2000, 2001, 2002, 2003, 2006, 2011; Dewan Bahasa dan Pustaka, 2006). The classification of the inserted manuscripts is shown in Table 1.

TABLE 1: Malay Manuscript Collection As of May 2017

No.	Location	Total	Call Number	Book
1.	National Library of Malaysia (NLM) <i>Perpustakaan Negara Malaysia (PNM)</i>	6554	MS 3 - MS 571	NLM- Short Catalogue 0
			MS 572 - MS 930	NLM- Short Catalogue 1
			MS 1042 - MS 1539	NLM- Short Catalogue 2
			MSS 1540 - MSS 1900	NLM- Short Catalogue 3
			MSS 1901 - MSS 2245	NLM- Short Catalogue 4
			MSS 2247 - MSS 2400	NLM 0
			MSS 2401 - MSS 2600	NLM Additional No.1
			MSS 2601 - MSS 2862	NLM Additional No.2

			MSS 2864 - MSS 3000	NLM Additional No.3
			MSS 3001 - MSS 3500	NLM Additional No.4
			MSS 3501 - MSS 3881	NLM Additional No.5
			MSS 3882 - MSS 4200	NLM Additional No.6
2	Islamic Museum (IM) <i>Muzium Islam (MI)</i>	737	MI 1 - MI 739	Book of Islamic Museum
3	Islamic Academy, University of Malaya (IA UM)	4	MSS 4 -MSS 11	Main Catalogue of Malay Manuscript
4	Institute of Language and Literature Malaysia (ILLM) <i>Dewan Bahasa dan Pustaka (DBP)</i>	240	MS 1 - MS 219	Book of Manuscript ILLM
5	Sultan Zainal Abidin University (UniSZa)	10	MSP 2 - MSP 12	Main Catalogue of Malay Manuscript
6	Malacca Cultural Museum (MCM) <i>Muzium Budaya Melaka (MBM)</i>	7	MBM, No. 8 & No. 10	Main Catalogue of Malay Manuscript
7	Raja Abu Bakar Museum (RABM) <i>Muzium Di Raja Abu Bakar</i>	9	No.2 - No.16	Main Catalogue of Malay Manuscript
8	Kelantan Museum (KM) <i>Muzium Negara Kelantan (MNK)</i>	18	MZ (KN). 83:86 - MZ (KN). 7:90	Main Catalogue of Malay Manuscript
9	Terengganu Museum (TM) <i>Muzium Negara Terengganu (MNT)</i>	197	82.239 - 89.149	Main Catalogue of Malay Manuscript
			D14 - D105	

10	Sarawak Museum (SM) <i>Muzium Sarawak (MS)</i>	29	Manuscript 1 - Manuscript 29	Main Catalogue of Malay Manuscript
11	Kelantan Public Library (KPL) <i>Perbadanan Perpustakaan Awam Kelantan (PPAK)</i>	3	No call number.	Main Catalogue of Malay Manuscript
12	Penang Public Library (PPL) <i>Perbadanan Perpustakaan Awam Pulau Pinang (PPAPP)</i>	3	No call number.	Main Catalogue of Malay Manuscript
13	National University of Malaysia <i>Universiti Kebangsaan Malaysia (UKM)</i>	39	No. 1 - No. 37	Main Catalogue of Malay Manuscript
14	University of Malaya <i>Universiti Malaya (UM)</i>	165	Manuscript 1 - Manuscript 253	Main Catalogue of Malay Manuscript
15	Individual Collection	13	No call number.	Main Catalogue of Malay Manuscript
16	International Islamic University Malaysia (IIUM)	185	MAL001 - MAL010 M001 - M115	Main Catalogue of Malay Manuscript
17	Islam Public Library <i>Perpustakaan Awam Islam (PI)</i>	3	MI694, MI490, MI499	-
	Overall Total	8216		

CONCLUSION

Malay manuscripts are found in many institutions in Malaysia. Most of the manuscripts have been catalogued. Unfortunately, the catalogues are difficult to be used as library tools by researchers because they are in different books and they are not available in all libraries. The availability of a Union Catalogue for Malay Manuscripts in Malaysia would enable all manuscripts in the country to be listed together and the information could be available at the touch of a button. This facility would greatly enhance the tracing of titles of Malay manuscripts in Malaysia and identification of their location, which would make selection of relevant manuscripts for research very much easier. Although the work is still in progress but most of the manuscripts in Malaysia had been listed in the Union Catalogue. In the future the Union Catalogue for Malay Manuscripts will be enhanced for access optimization and faster search results to overcome high traffic (access) on manuscripts retrieval.

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