



## MEASUREMENT OF INLIS APPLICATION QUALITY USING MCCALL METHOD

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### ABSTRACT

The Inlis application at the Archives and Library Office of West Sumatra Province is used to manage the lending and book return process carried out by each library member. With the library system, it can help the librarians to know the flow of books in and out of the delay in returning the library members to determine the fines to be paid by the members. Based on this the authors will measure the quality of the Library Information System because in this system the quality of the system is unknown, thus identifying the accuracy, completeness and quality of the software in the Inlis Application. The measurement method in this study is the McCall Method. The results based on the McCall Method show that the quality of the Inlis Application is good with a percentage value of 73%, with the best indicator value, namely reliability with a yield of 73% and the worst indicator value, ie with a result of 51%.

**Keywords:** Quality of Information Systems, McCall, Information Systems

### INTRODUCTION

In a previous study entitled "Usability Analysis of Internet User Pornographic Access Detection System Using the McCall Method" explained that software testing is a process used to identify the accuracy, completeness and quality of software [1]. In this study, it was concluded that the Internet User Pornography Detection System had good quality based on McCall's theory of quality, in the best matrix, usability, yielded 80% and the worst matrix, reliability, yielded 51.98%. The INLIS application at the Office of Archives and Libraries of West Sumatra Province is used to manage the process of borrowing and returning books by each member of the library. With this library system, it can help librarians to find out the flow of books in and out and late returns made by library members to determine the fines that must be paid by members. With the INLIS application as a Library Information System at the Office of

Archives and Libraries of West Sumatra Province, the author will measure the quality of the Library Information System because in this system the quality level of the system is not yet known. McCall's method is a software testing method that has the most complete measurement criteria with five quality factors including correctness, usability, reliability, integrity, and efficiency [2]. It is important to measure the quality of the Library Information System to determine the quality and condition of the system [3].

Information systems are a combination of information technology and the activities of people who use that technology to support operations and management [11]. In a very broad sense, the term information system is often used to refer to the interaction between people, algorithmic processes, data, and technology [12].

INLIS lite is a library automation application software that was built and





developed by the National Library of the Republic of Indonesia (Perpusnas) since 2011. The name INLIS is taken from the word Integrated Library System, the name of the integrated library information management software that was built since 2003 to the need for routine activities of library information management in the National Library of Indonesia [4]. Software measurement is needed so that the system development that will be carried out can be better in accordance with the needs of the company's business processes by looking at the deficiencies found from the measurement results [6]. Measurement and evaluation of an information system needs to be done for better system improvement [5]. Software quality is a hereditary theme of study and research in the history of software engineering [7]. The study starts from what will be measured (whether process or product), whether the software can be measured, the measuring point of view and how to determine software quality measurement parameters [8].

**METHOD**

McCall's method is one of the models that describes the software quality factor or software quality [9]. This model has three main perspectives, namely product operation (operational properties of software), product revision (software ability to undergo changes), and product transition (software adaptability to new environments) [10].

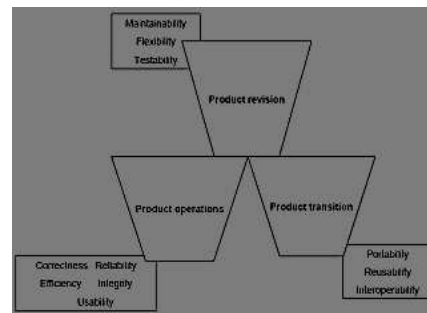


Figure 1. McCall Method

**RESULT**

The display of the library information system (Inlis Application) at the Office of Archives and Libraries of West Sumatra Province, can be seen in the following picture:



Figure 2. Inlis Start Page

In analyzing the quality of the program, a feasibility table is needed as follows:

No.	Kategori	Persentase
1.	Sangat Baik	81% - 100%
2.	Baik	61% - 80%
3.	Cukup Baik	41% - 60%
4.	Tidak Baik	21% - 40%
5.	Sangat Tidak Baik	< 21%

Table 1. Eligibility Category

By determining the average value for each criterion and the weight depending on





the interests, the results of the software quality assessment obtained from 38 respondents can be seen in table 2 below:

No	Indikator	Pernyataan	Bobot	Nilai Kriteria	
1	Correctness (Ketepatan) 0,3	a. Completeness (Kelengkapan)			
		1. Aplikasi ini mampu melakukan proses pengolahan data (penampilan data)	0,3	4,13	
		2. Fitur -Fitur Yang terdapat pada sitem ini sudah berfungsi semua	0,3	3,87	
		b. Consistency (Konsistensi)			
		3. Fitur dan Desain table di setiap halaman sama	0,4	4,71	
		4. Fitur dan desain form dan tombol di setiap halaman sama	0,3	3,74	
		5. Bahasa yang digunakan sudah konsisten pada setiap halaman	0,3	4,68	
	2	Usability (Kegunaan) 0,3	6. Bentuk dan struktur pelaporan pengolahan data sama	0,4	4,00
			c. Treacebility (Pelacakan)		
			7. Dapat melacak peminjaman buku	0,5	4,00
			d. Communicativeness (Komunikatif)		
			8. Bahasa yang digunakan mudah dipahami	0,3	4,18
			9. Tulisan dari setiap halaman dapat terbaca dengan jelas	0,3	4,08
			10. Fungsi dari setiap tombol jelas	0,3	3,82
3	Integrity (Integritas)	e. Operability (Operabilitas)			
		11. Pilihan menu dan tombol pada sistem mudah digunakan	0,5	3,82	
		12. Pengguna mudah mengerti dengan sistem pengkodean buku yang ada	0,4	3,76	
		f. Training (Pelatihan)			
4	Reliability (Kehandalan) 0,2	13. Ada layanan petunjuk yang disediakan oleh sistem untuk membantu membantu pengguna baru	0,4	3,66	
		g. Security (Keamanan)			
5	Efficiency (Efisiensi) 0,2	14. Proses login dapat	0,4	3,55	
		berjalan dengan benar dan sesuai harapan	0,3		
		15. Aplikasi ini dapat mengontrol akses pengguna dengan membatasi hak akses	0,3	3,68	
		h. Accuracy (Akurasi)			
		16. Aplikasi ini mudah dimasukan input yang diperlukan oleh sistem	0,3	3,84	
		17. Aplikasi ini dapat menampilkan data yang tepat sesuai dengan kebutuhan pengguna secara tepat sesuai kata kunci yang dicari	0,4	3,92	
		18. Aplikasi ini memberikan data dan informasi yang sesuai dengan kebutuhan pengguna secara tepat	0,4	3,95	
		19. Informasi sari sistem ini akurat dan bebas kesalahan	0,3	3,84	
		20. Pengguna dapat memperoleh informasi yang dibutuhkan dalam waktu yang tepat	0,3	3,95	
		i. Error Tolerancy (Toleransi Kesalahan)			
		21. Akses ke aplikasi dan data tidak bisa digunakan oleh pihak yang tidak berhak untuk menggunakannya	0,3	3,76	
		j. Simplicity (kesederhanaan)			
		22. Informasi yang ada pada sistem ini mudah dipahami tanpa ada kesulitan	0,3	3,92	
		23. Menu yang ada pada sistem ini dapat dengan mudah dipahami tanpa ada kesulitan	0,2	3,92	
		k. Execution Efficiency (Kemudahan Eksekusi)			
24. Menu layanan fungsi dan datanya sudah sesuai dengan kebutuhan	0,2	3,95			
25. Fungsi dari isi yang ada di dalam sistem sudah mengakomodasi penyampaian segala informasi tentang perpustakaan	0,2	4,03			

Table 2. Criteria Value

The value of factor quality (Fa) is the stage of finding the value of each sub-indicator and





indicator, which will produce a value and percentage. The formula used to find the value of each sub-indicator is:

$$F_a = w_1c_1 + w_2c_2 + w_3c_3 + \dots + w_nc_n$$

Where :

F<sub>a</sub> : total value of factor

w : weight of each interest

c : the value of the average matrix (criteria value)

Aspects of the functionality of the questionnaire results obtained from the 30 respondents, the percentage calculation is carried out using the following formula:

$$\begin{aligned} \text{Percentage Functionality} \\ &= (\text{Value obtained}) \\ &/(\text{Maximum Value}) \times 100\% \end{aligned}$$

So, the calculation of the percentage of functionality is like this:

$$\begin{aligned} \Sigma &= \frac{(0,3 * Fa_1) + (0,3 * Fa_2) + (0,3 * Fa_3) \\ &+ (0,2 * Fa_4) + (0,2 * Fa_5)}{\text{Nilai Maksimum}} \times 100\% \\ &= \frac{(0,3*2,83) + (0,3*3,01) + (0,3*2,40) + (0,2*3,17) \\ &+ (0,2*2,80)}{5} \times 100\% \\ &= \frac{0,849+0,903+0,72+0,634+0,56}{5} \times 100\% \\ &= \frac{3,666}{5} \times 100\% = 73\% \end{aligned}$$

The percentage results above are then compared with the Likert scale, which is a scale used to measure attitudes, opinions, and perceptions of a person or group of people about an event. The percentage level grouping is in accordance with the eligibility category which can be seen from the data in Table 2.2. So it can be concluded that the Inlis application in total is at the level between 61% - 80% = 73% and is included in the GOOD category.

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## CONCLUSION

1. After conducting research at the Department of Archives and Libraries of West Sumatra based on the data obtained and the analysis that has been done, the authors can draw conclusions, including:
2. By using the McCall method that is implemented, it can help users in assessing the quality of library information systems (Inlis Applications) rationally.
3. By using the implemented McCall method, it can measure the quality of the library information system (Inlis Application) which is at 73% and is included in the Good category.
4. Using the McCall method, there are 5 (five) assessment indicators, namely: correctness (accuracy), efficiency (efficient), integrity (integrity), reliability (reliability) and usability (usability) with the value of each indicator being correctness = 55%, efficiency = 56%, integrity = 51%, reliability = 75%, and usability = 62%.
5. Using the implemented McCall method, it can be found that the best indicator value is the reliability indicator with a percentage value of 73% and the integrity indicator value is the worst indicator with a percentage value of 51%.

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