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Design and implementation of digital library at Sharia and Law Faculty UIN Sunan Gunung Djati Bandung

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Abstract. The development of communication and media information technology makes an impact on how people can access information through various media, including libraries that store a collection of information stored and electronically accessible through a digital library. The Faculty of Sharia and the law of UIN Sunan Gunung Djati as a higher education institution answered the challenge with the development of this information and communication technology to provide this information and communication-based service by developing digital libraries geared towards improving the library service process with good quality and speed, as well as improving the effectiveness and efficiency of the library's governance to facilitate the teaching and learning process for students. Open Source Software (OSS) is digital library web based at the Faculty of Sharia and Law is designed and implemented to fulfil the library automation in which small or big scale used SLiMS.

1. Introduction

Education and science are one of the areas that are heavily influenced by modern technology [1]. According to the development of science and technology, the library and information centre has a paradigm shift that is mainly related to the source of its information, services, user orientation, the responsibilities of staff/workers, so the digital library is more quality with resources inside [2]. In the circle of university, the learning process autonomously for students and implementation of Tri Darma supported by the digital library that serve information technology based. The Digital Library is also a media that has large-scale electronic data collection [3].

The digital library strongly supports the existence of independent activities, including research. Various scientific resources that exist in the electronic library can make easy to do a research only by sitting in front of the computer. So, the lecturing process might be from the students who has learnt it particular problem before and then they can share and discusses it with the lecture and another. Then, they have an opportunity in teaching and learning process. Especially, with a large number of electronic information sources such as electronic journals, electronic books, electronic papers and electronic databases provided by the library. All of them made easy and fun the students who has learnt autonomously. As a result, self-study, for now, is something fun and very likely to be done by students without a shortage of information sources [4].

The aim of Faculty of Sharia and Law UIN Sunan Gunung Djati Bandung in developing a digital library system made the students to have a professional skills that can implement, develop and solve the legal issues in society either locally or nationally [5].



2. Methods

In this research, the steps are taken to obtain the intended results in designing the digital library that made in the form of a flowchart as shown in Figure 1, below.

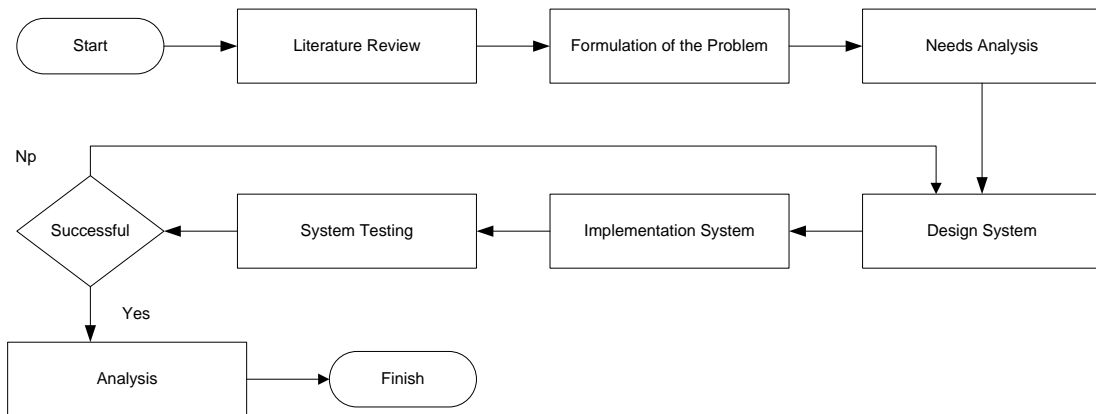


Figure 1. Flowchart research method.

Figure 1 above illustrated the steps which has taken in this research, starting from similar literature studies, then formulating the problem that ultimately can be analysed the needs in this study both hardware requirements and software requirements needed to digital library design, followed by testing the system and analysed the results of testing the system. The following analysis needs for digital library design:

2.1. SLiMS

SLiMS Library Management System (Slims) is a web-based Open Source Software (OSS) to meet small scale library's automation requirements [6]. SLiMS can be used by libraries that have a large collection, members and staff in the network environment, either a local network (intranet) or internet. Slims with cross-platform can do in a well operating system platforms such as macOS, MS-Windows, and GNU/Linux platform.

AJAX technology (Asynchronous Javascript and XML) is used to improve interactivity to be able to appear such as a desktop application. And the whole system using open source code software namely: PHP Web Scripting Language (<http://www.php.net>) and MySQL Database Server (<http://www.mysql.com>).

SLiMS uses the GNU Public License (GPL) v3 to ensure freedom of obtaining, modifying and redistributing (Rights to use, study, copy, modify, and redistribute computer programs), so, php Thumb and Simbio (The Development platform used and developed from the Igloo project) are also used by Slims.

Online Public Access Catalog (OPAC) is one of the interfaces used on SLiMS, with the creation of thumbnails on Generation the fly. Thumbnails are useful for displaying the book cover. The search mode is available to show a simple search and advanced search.

2.2. XAMPP

In this research using XAMPP to support various operating systems, it is a collection of several programs, as a localhost that consist of apache HTTP server programs, MySQL databases, and language translators written in PHP and Perl programming languages [7].

2.3. Bootstrap

Bootstrap is one of the frameworks for CSS (Cascading Style Sheet) used for the site design website. Bootstrap usage is a very helpful programmer couple in building the look of a website [8]. It helps a

programmer to make website. According to Jake Spurlock, it can adaption to the website. So, it can choice the CSS and Javascript features according to the needs. For example, CSS in Bootstrap also provides form features, buttons, navigation and other components and the Javascript made an interface more easily and stably. Bootstrap also provides a lot of CSS classes and plugins that are ready to be used in website making. So, it is one of the most used front-end frameworks.

Although as a framework, the use of bootstrap should be collaborated with the use of stylesheets. Classes and plugins available has not fulfil yet the programmer. If all programmes are really bootstrap only, there will be a similarity website, between display with the other.

It has connection with Inside CSS, HTML5, and Javascript. Cascading Style Sheet (CSS) is usually used to set the appearance of elements written in a mark-up language [9], such as HTML. CSS serves to separate the content from its visual appearance on the site [10]. HTML and CSS have a close attachment. HTML is a mark-up language (the foundation of the site) [11] and fixed styles by CSS (for all aspects related to the website), both of them must be run well.

3. Results and discussion

3.1. Design

There are many components of soft file:

- Register: works for adding new accounts;
- User: serve as a user;
- Admin: serve as the operator;
- Index SLiMS: as the main display on SLiMS;
- Index Admin: as operator display.

Here is the chart of principle of digital library:

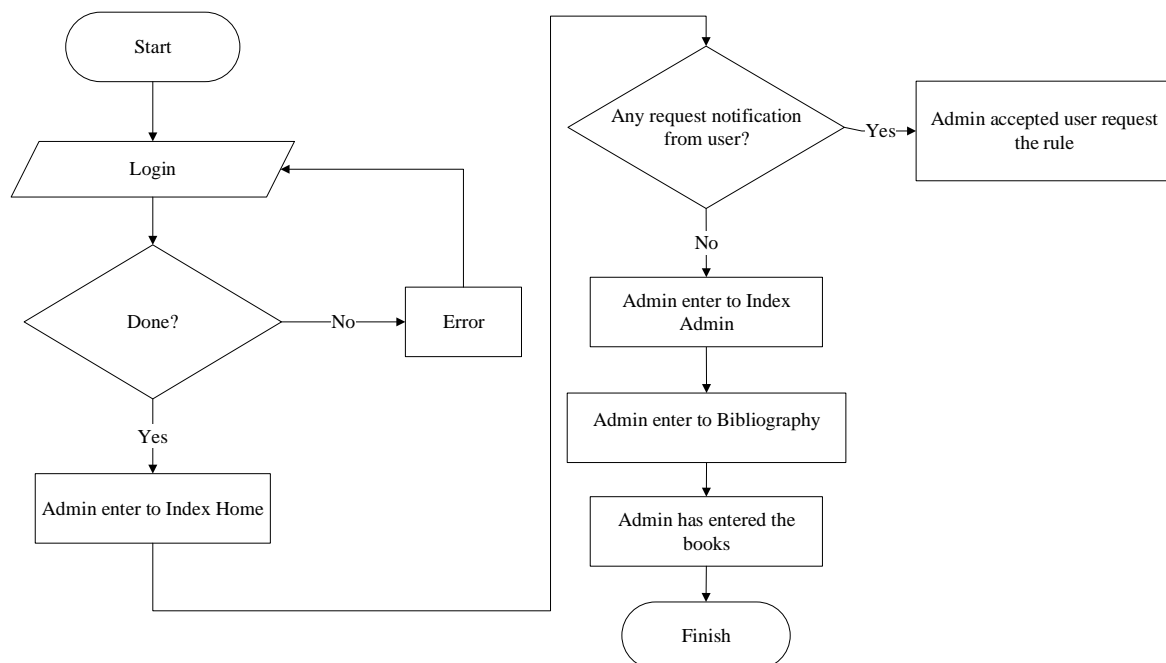


Figure 2. Flowcharts for Admins.

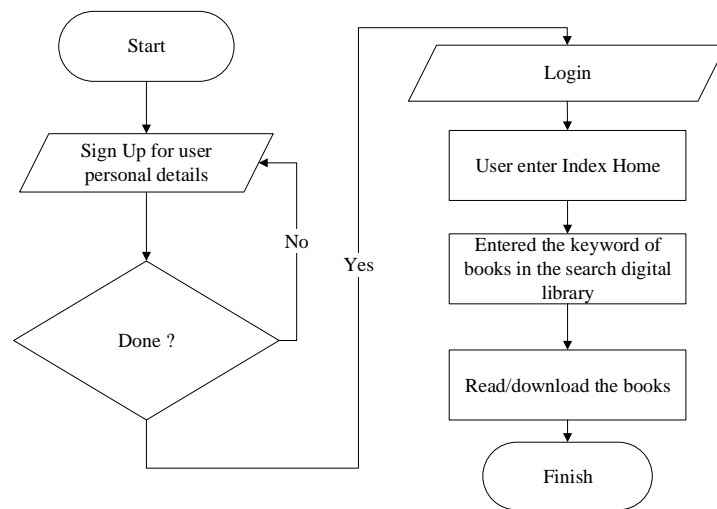


Figure 3. Flowchart for User.

Broadly, it can be described through the WorkFlow system digital library regarding the performance of the digital library system shown in Figure 4 below:

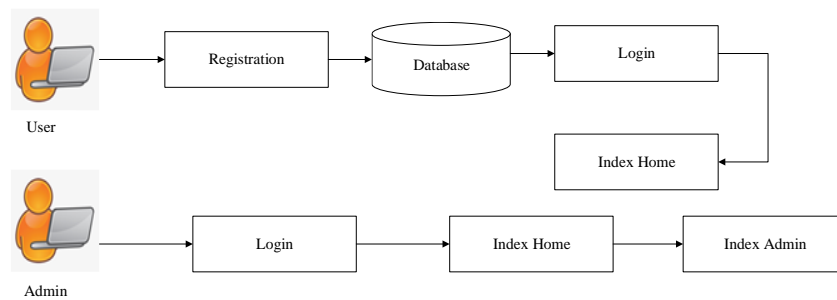


Figure 4. WorkFlow system digital library.

3.2. Implementation

The digital library implementation based on the design of the first few stages of registration that connects the user's data to the database as in Figure 5.

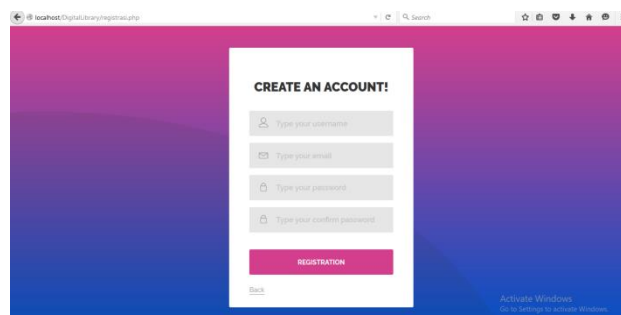


Figure 5. The registration display page in the digital library.

In user registration login after registered to enter the digital library system, with display as in Figure 6.

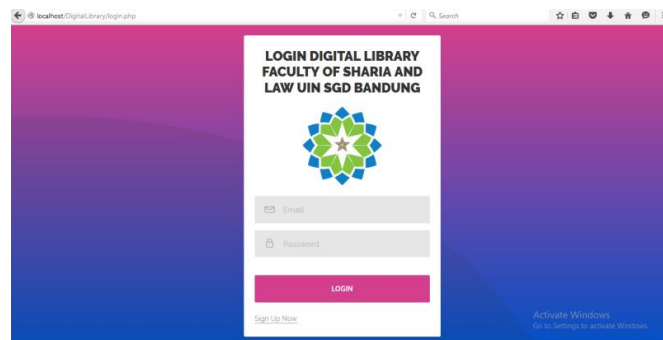


Figure 6. Login display page on the digital library.

Implementation of SLiMS index in the digital library as in Figure 7 below:

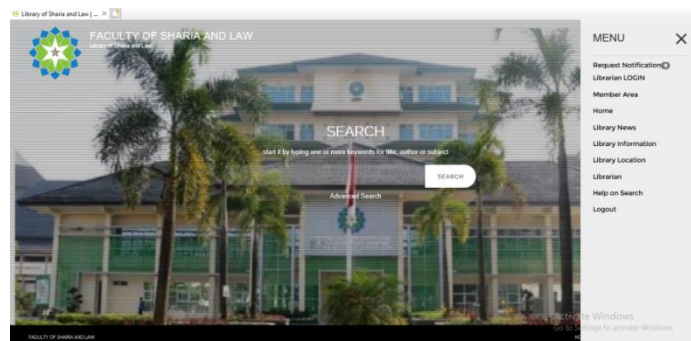


Figure 7. The SLiMS index display page on the digital library.

Implementing submenu display of bibliography, menu bibliography showed the books that have been registered. Add new bibliography showed, adding a new book either registered or not. The author needs those format effectively, such as in figure 9.

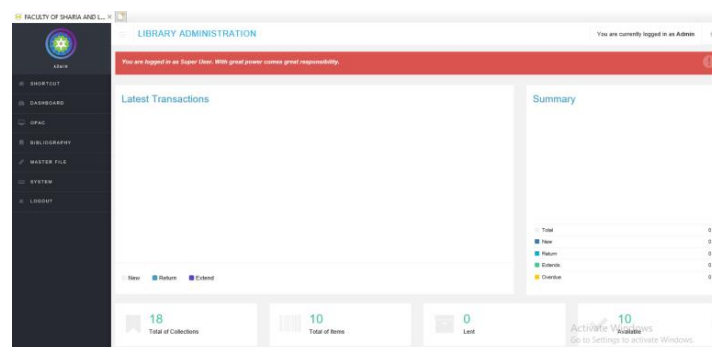


Figure 8. Home screen index admin page on the digital library.

The results of the design and implementation of the digital library are obtained by the results of the admin and user whose has their functionality. The first step, determining the admin that serves as operator. Second, registering the user using username, email, password, and password confirmation. Using display model on the login and registration page with bootstrap as CSS. ReCaptcha is added to the registration page as verification the users who the digital library.

SLiMS bootstrap is used as the whole of the digital library view. Format SLiMS previously is changed into digital library format. It contains: located on the three right corner line, logo, front title text formal, and lower text on the bottom navigation bar, as well as the wallpaper display and advanced

search. There are two menus in bibliography submenu, i.e.: the bibliography menu which has function as a research the book that has been added by an admin, and it can make easy to find, by using keywords the book is according to the rules. The second, a new bibliography add, which has name, id number, title, year of generation, graduation year, edition, specific detail info, title series, subject, abstract, cover images, file attachments, related Biblio data, hide in opaque, promote to the homepage, and labels. The book can be easy accessed by the users, if the admin filled all about the format above, and using the specified keywords.

4. Conclusion

The design and implementation of digital libraries in the faculty of sharia and law can be implemented as follows, digital library can display the journal of articles in Sharia and Law faculty and can be used for automatic citation retrieval. There are several features such as statistics, indexing, and searching. And users can view, upload, download and cite article journals from the web.

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