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To cite this article: I Widiaty et al 2018 IOP Conf. Ser.: Mater. Sci. Eng. 288 012086

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Abstract. The purpose of this research is to design the application of desktop-based batik learning as part of digital documentation source of idea of making batik patterns, especially Batik Garutan. The application of Batik Garutan information system is designed using Java programming language and using MySQL database which is embedded directly on the application. The process of creating and developing the application of Batik Garutan information system is using Software Development Life Cycle (SDLC) method with waterfall model. Waterfall model consists of five stages, namely: needs analysis, system analysis, designing, implementation, and testing. The result of the application designing is a desktop application that can facilitate learners in Vocational High School (SMK) in the search for information about Batik Garutan. The information available in this application is the source of the idea of making Batik Garutan patterns, the philosophical meaning of Batik Garutan patterns, Garutan Batik patterns that have been marketed and creative industry information of Batik Garutan. The application of Batik Garutan information system has advantages, especially from the presentation of local content of flora, fauna, historical sites, food, crafts, and typical art of Garut City.

1. Introduction

Batik as one of the Indonesian’s wealth of pride assets needs to be preserved and maintained its existence as part of a very valuable cultural heritage. Batik is a unique cultural heritage, because it represents the local wealth of Indonesia, especially the flora, fauna, historic sites, customs, beliefs, artifacts, icons and typical destinations of a region [1,2].

One effort that can be done to preserve this cultural heritage is by documenting it digitally. Digital documentation will permanently preserve the cultural heritage of both the historical aspect and the noble value of culture as the great value of a nation [3]. The digital documentation of cultural heritage has strategic functions such as conservation, transmission, and acquisition of knowledge that will benefit the younger generation of the Nation in the future [4]. Digital documentation will serve as e-learning pedagogical functionality that will make the learning process of culture more varied and interesting [5].

Utilization of digital documentation of batik in the learning process can be developed in the form of desktop-based information system application. Desktop application in the context of learning have advantages such as having a high ability in learner control, inter-connectedness, and is a quite dynamic medium [6]. The offline desktop application, although not as sophisticated as online (web-based) desktop but has good features because of the volunteer computing platform [7] and can play a role as computer navigation [8]. In addition, the offline desktop application, even though it belongs to the category of cheap system, but it has the advantages of highly interactive and fully immersion [9].

Here, the purpose of this study was to design the desktop-based application of batik learning in
SMK. This application is an information system application that raised the local wisdom of Garut City as a source of ideas on making a typical Batik patterns called Batik Garutan. This application is designed to prioritize aspects of local wisdom of Garut City from the aspects of flora, fauna, historic sites, customs, beliefs, arts, icons and typical tourist destinations of Garut City. This application, other than being designed to be used in the process of learning batik in SMK, will also be useful in digitally documenting the values of local wisdom of Garut City as part of the conservation of typical cultural heritage of Garut City.

2. Methods
The application of this desktop-based information system, serves to provide knowledge about the source of the idea of making Batik Garutan patterns. The existing data include Batik Garutan patterns that already exist, the source of ideas of each motive, and the place that provides the particular batik. The system application was designed using the Software Development Life Cycle (SDLC) with waterfall design. SDLC is a software development cycle consisting of several stages. The stages are requirements, analysis, design, coding / implementation, testing, and maintenance [10] [11]. Figure 1 shows the stages of the waterfall model.

![Diagram of Waterfall Model](image)

Figure 1 generally presents about desktop-based system application design. The system consists of database and user interface. The database was obtained through the initial data collection process consisting of interview, study literature, semiotic analysis, and historical studies. The results of data collection then analyzed and made into a database using MySQL software. MySQL is a database management system software (DBMS) or multithread, multi-user DBMS. The process of implementation and testing were done on the batik learning in SMK.

3. Results and discussion
The application of desktop-based Batik Garutan information system is designed with two main functions as a medium of learning batik in SMK and digital documentation of typical local wisdom values of Garut. Database design using MySQL on desktop-based Batik Garutan information system application can be seen in Figures 2a and 2b.
Figure 2. Database Design of Batik Garutan Information System Application using MySQL

Figure 2a shows the batik table in the database and Figure 2b shows the idea resource table in the database. The database system for the conceptual model on the application of desktop-based Batik Garutan information system used the Entity-Relationship Model (ERM). ERM is one of the database modeling methods used to generate conceptual schemes for the type/model of semantic data systems. Where systems often have relational databases and the provisions are top-down. Figure 3 shows a diagram illustrating entity-relationship database of Batik Garutan Information System application.

Figure 3. ERD Application of Batik Garutan Information System

The design of user interface of Batik Garutan information system application consists of login page, home, batik garutan, and the source of ideas. Figures 4a and Figure 4b show the process of creating a system application user interface using Netbeans.
Figure 4a. The process of creating user interface design Batutan Information System Garutan

Figure 4b. The process of creating the source code user interface of Batik Garutan information system

The user interface is a form of graphical display that directly relates to the user [12]. User interface works to connect between user and system, so the application can be used. User Interface system application was created using Java programming language. Java programming is not platform-dependent, which means that java can be run on any computer and even on any operating system. The software used is NetBeans IDE 8.2 Version. NetBeans is an open source software that can be used freely for both commercial and non-commercial needs supported by Sun Microsystems [13].
4. Conclusions
The result of designing this application is a desktop application that can facilitate learners in Vocational High School (SMK) in learning Batik Garutan. The available information in this application is the source of the idea of creating Batik Garutan patterns, the philosophical meaning of Garutan Batik patterns, Garutan Batik patterns that have been marketed and creative industry information of Batik Garutan. The application of Batik Garutan information system has advantages, especially from the presentation of local content as a source of ideas of flora, fauna, historic sites, food, crafts, and typical art of Garut City. This local content is equipped with descriptions and drawings that can be used as a source of inspiration in creating batik patterns. A search feature is also available in this application to facilitate the search for the source of ideas and in the search for the meaning of philosophy of batik. The other convenience contained in this application is that it doesn’t need internet connection in its use.

References
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