Ijcatr_JobFair

by Yana Hendriana

Development of Web-based Job Fair Information System

Andri Pranolo
Informatics Department
Universitas Ahmad Dahlan
Yogyakarta, Indonesia

Yayan Agung Saputro
Informatics Department
Universitas Teknologi
Yogyakarta, Indonesia

Yana Hendriana
Informatics Department
Universitas Ahmad Dahlan,
Yogyakarta, Indonesia

Richki Hardi
Informatics Department
STITEK Bontang,
Bontang, Indonesia

Abstract: The development of information technology should be ordered to improve the services including job fair information system services. This work aimed to develop of web-based job fair information system. The methods used in this work consists of collecting data method, and software development method. Collecting data method using observations, interview, and literature study. Software development method using waterfall model comprising the steps of requirements, specfification and design, implementation, testing, deployment, and maintenance. The results of this work is software web-based information system provided a job information, registration, and test schedule information.

Keywords: Web-based; job fair; information system; waterfall model; software

1. INTRODUCTION

Utilization of information technology (IT) in various fields to support the easy and productivity of work at this time is very fast growing. IT utilization has also been used by various organizations or institutions to recruit prospective employees, so that the job information more quickly spread and the registration process has become more effective and efficient. This research was conducted in a Vocational School in Indonesia, namely SMKN 1 Salam Magelang. As well as to access a job fair information and registration systems, applicants should be came to school, it can be causing the applicants often miss information about job vacancies. Therefore, this work aimed to develop of web-based job fair information system.

Theory and research of recruitment show that objective characteristics, subjective considerations, and critical contact send the information of organization and opportunities to prospective applicants [1]. Specially, in selection and assessment decision making of human resources fields needed certification [2], therefore in vocational high schools in Indonesia also conducted tests competence for certification of expertise.

The work has been done before, such as applying signaling theory to the web-based recruitment domain and by testing a mediated relationship implied therein [3]; Web-based job management system simulated mechanism of user for HPC job scheduler in windows HPC sever platform [4]; Web-based framework for job-embedded technology-enhanced social language learning [5]; basic information service of job post resource based on web mining [6]; web-based job submission mechanism for scientific cloud computing [7]; and job-searcher for high school student based on deep web technology [8]. In this paper will be discussed, how about the development of web-based job fair information system using model waterfall.

The rest of this paper is organized as follows. In Section 2, described the method used in this work. In Section 3, results and discussion. The conclusion is presented in Section 4.

2. METHOD

The methods used in this work consists of: 1) collecting data method, and 2) software process development model.

Collecting data method using observations, interview, and literature study. Software process development model using waterfall comprising the steps of requirements, specification and design, implementation, testing, deployment, and maintenance [9]. In this work phase waterfall model performed up to implementation and testing. Every phase comes after a phase is completed and tasks can be divided according to phases. The output of one phase becomes input of next phase but could have the option to revisit phases in the next cycle [10].

3. RESULTS AND DISCUSSION

3.1 Requirements

Information collected from data collection phase has been carried out, the requirements needed for the system that will be built must answer the following issues, such as:
1. A facility for job information. How a system may provide job information that can be accessed by the public.
2. A registration facilities. How a system may provide registration facilities for applicants.
3. A schedule test information. How a system may provide a schedule test information.

3.2 Specification and design

3.2.1 Systems Specification

Specification system and design phase were completed before the implementation phase. This phase is important to produce a system utilized as needed. The registration procedure on the website applicants asked to fill out a form including full name, school name, major, address, email, mobile phone, and verification code, in order to get a username and password used to system login. After the student login, next step is to fill out form to complete the registration, and then submit a document required. All information about latest job vacancies are design to display in the first page of website, also information about latest test schedule information will be provided in the first page. For more information applicant could be chosen by menu (Figure 1) that provided by system.
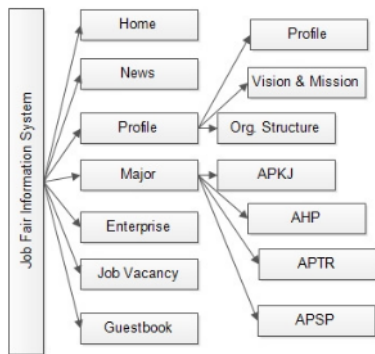
Figure 1. Job fair information system menu

The system built have three external entities including members, administrators and head of officer. Privileges access for each external entity, such as:

1. Prospective members registering as a new member by fill out the data including name, school name, major, Address, Email, mobile phone. Furthermore, prospective member will be received an activation log through email, then members could register to existing vacancies.

2. Administrators user could be manipulate (change, delete), the data of enterprise, news, job vacancies, and member.

3. Head of officer receives print out the reports of member, job vacancies, and member of job vacancies.
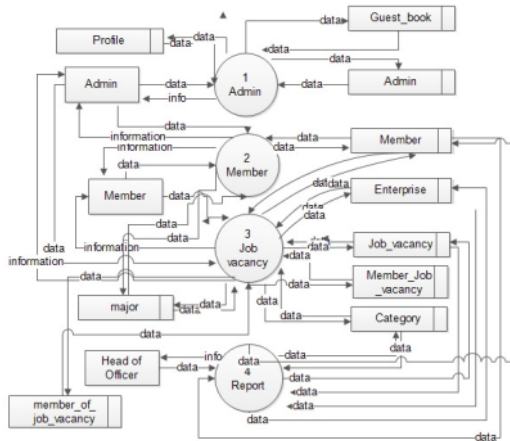

Figure 2. Data flow diagram job fair information system

Figure 2 shows that the general processes of job fair information system, i.e. Administrators process, members process, job vacancies process, and reports process. The description of each process are as follows:

1. Administrators Process. Administrators could be updating, deleting, inserting, and storing the data to all

table including admin table, member table, enterprise table, job vacancy table, and category table.

2. Members Process. The prospective member could be entry the data member stored in the member table.

3. Job vacancy Process. Through this process member could be registering to the job vacancies stored in Member Job Vacancies table, and view the information. Administrators could be manipulating news and the data of job vacancies.

4. Report Process. Head of officer could be accessing the member reports, enterprise reports, and job vacancies which retrieved from the data source such as, table of member, job vacancies, member job vacancies, enterprise, and category.

3.2.2 Database design

To create a database application used for the enterprise application is a complex phase, which have the activities involving database schema design, design of the programs that access and update the data, and design of a security scheme to control access to data [11]. In this work used two model data to create a databases, such as entity relationship data model, and relational data model. A data model is a collection of conceptual tools for describing data, data relationships, data semantics, and consistency constraints [11].

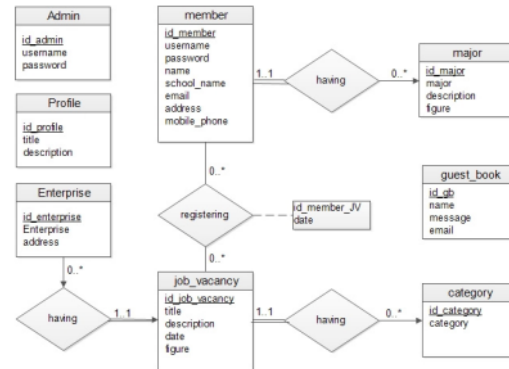#### 3.2.2.1 Entity relationship data model

Figure 3. Entity relationship diagram

The E-R model is very useful in mapping the meanings and interactions of real-world enterprises onto a conceptual schema [11]. The ER model used three basics concepts, involving entity sets, attributes, and relationship sets [11], [12]. The entity set in this work has founded 8 entity sets (Figure 3) involving admin entity, member entity, profile, entity, enterprise entity, major entity, guest book entity, job vacancy entity, and category entity. Three entity sets no have a relationship sets, such as admin entity, profile entity, and category entity.

Entity relationship model data could not be implemented to database management system (DBMS), furthermore this

model data should be reduction to relational data model [12]. To reduction process of entity relationship model refer to Silberschatz *et. al.* [11], [13].

3.2.2.2 Relational data model

Relational data model is a model data that uses collection of tables to represent both data and the relationships among those data [11]. If the previous phase using entity relationship data model, then the relational data model created is the reduction result from the data model entity relationship created before. The reduction results showed the tables created is 9 tables (Figure 4), because relationship between member entity sets and job_vacancy sets resulting 1 new table, namely member_job_vacancy table. Other entity sets being a table (Figure 4).
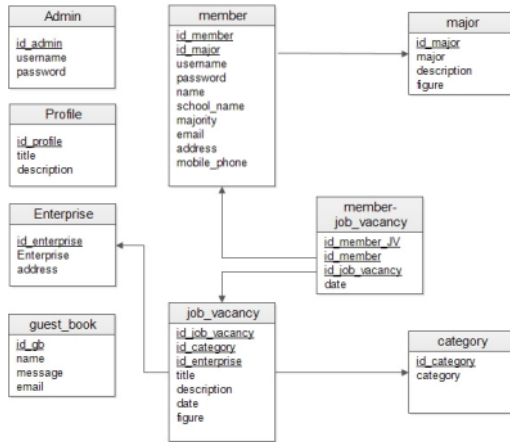
Figure 4. Schema database diagram

3.3 Implementation and testing

System implementation is how to explain the implementation of the requirements which has been set, such as software and hardware used for the system could be running and work optimally.

The first one in this section described software and hardware that supporting the system. The system can run properly and optimally if the system runs on recommended software specification, involving: 1. Operating system Windows (XP, Vista, and 2. Mozilla Firefox and Google Chrome browser. To endorse the system running, it is necessary that adequate hardware like processor and RAM used. The specification of hardware is: 1) Processor Intel (minimum P4) 2) 512 MB RAM.

3.3.1 GUI for member

Figure5. Shows the screen shot of hompage of job fair information system. The menu designed in the horizontal navigation, such as menu : Home, News, Profile, Major, Enterprise, Job Vacancy, and guest books.

In part of home page (Figure 5) there is page for member login, if member already have a username and password can be login directly. But, if the member do not heve a username and password should be register first.
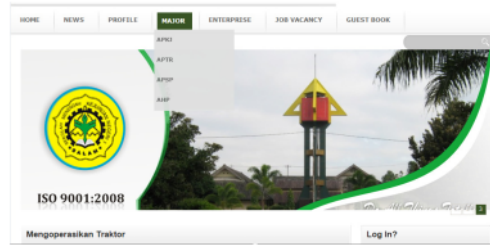

Figure 5. Screen shot of home page

To be a member should be fill out registration form (Figure 6), including username, password, full name, school name, major, address, email, and mobile phone.

Figure 6. Registration page

The example of coding shown in Figure 7. Line 7 to 27 are syntax to show the form of register. On line 7, the command action="simpan_anggota.php" used for stored the data to member table.

Figure 7. Syntax of registration page

Menu pages for public user, including: Home, News, Profile, Major, Enterprise, Job vacancy, and Guest book.

3.3.2 GUI for Administrator

User administrator should be login first to access all menu to manage the job fair information system (Figure 8).

Figure 8. Login form

The Administrators could be manipulating all data and information in this system, including updating, deletion, insertion, and stored new data to the database. The menu of administrator as follows: news, job vacancy, member, profile,

major, enterprise, category, guest book, and application report (Figure 9). The syntax of administrator menu shown in Figure 10.
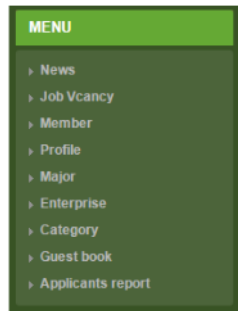

Figure 9. Menu pages of administrator

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1   <li><a href="index.php?page=1"><b>News</b></a></li>
2   <li><a href="index.php?page=23"><b>Job Vcancy</b></a></li>
3   <li><a href="index.php?page=16"><b>Member</b></a></li>
4   <li><a href="index.php?page=7"><b>Profile</b></a></li>
5   <li><a href="index.php?page=13"><b>Major</b></a></li>
6   <li><a href="index.php?page=10"><b>Enterprise</b></a></li>
7   <li><a href="index.php?page=4"><b>Category</b></a></li>
8   <li><a href="index.php?page=17"><b>Guest book</b></a></li>
9   <li><a href="index.php?page=20"><b>Applicants report</b></a></li>
```

Figure 10. Syntax menu pages of administrator

System test results on some browsers including Google Chorme, Mozilla firefox, and Internet explorer and can be viewed properly. However, need to be improved for adaptability in which accessed or executed on mobile devices such as smart phone and tablet. Recently web-based software development for addaptibility to many devices is one of the important factors. The system should be allowed software developers to implement software such as for mobile devices [14].

4. CONCLUSION
The conclusion of this work as follows:

1. The system built could be providing the information about job vacancy, information about schedule test, member registration facilities, list of enterprise, and list of member registered to job vacancy.

2. The user of the system are public user, user member registered in system, and user administrator. Head officer received the print out of the report from the system.

3. The system need to improvement for adaptability in which accessed or executed on mobile devices such as smart phone and tablet.

5. ACKNOWLEDGMENTS

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