

RESTful web service usage for online exit-survey at syiah kuala university as data verification method

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Abstract Many applications are developed and deployed in Syiah Kuala University main server. These applications and information system are built as tools to help the University' daily activities. Most of these applications have its own database. As a result, data is inconsistent, and the worst is redundant data cannot be avoided. The idea behind of this research is to build one centralized data that can be used as baseline to other applications. Since the main data of Syiah Kuala University are located behind the proxy which is no internet direct access allowed to the data. The proposed method to answer this problem is to use web service as a gateway for data transfer. This technique keeps the database from direct external access but the data itself can be seen without knowing where the real data is. This method has been used for Online Exit-Survey to proof that the system can verify the students' data. Some student cannot be identified because their data were empty, the other because the data in centralized database server were only prepared for undergraduate students, so that the post graduate and professional students cannot be verified. For undergraduate students this online exit-survey works fine without error on verification phase.

Key words: RESTful, web service, database, Information System, Exit-survey.

Introduction

Exit survey that also known as exit interview is a survey that conducted in order to find out the reason why an employee resigns (Brotherton, 1996). Husain and Ravindra (2013) also mentioned in their paper entitled "Exit Interview – A Vital Tool for managing Departing Employee" about the time when the interview should be conducted and this could help an organization to improve its policies. In addition, this survey can make communication more effective (Flamholtz.2003). Garretson and Teel (1992) also supported this idea about the exit interview for communication. Husain and Ravindra (2013) discussed about different perspective about the objective of exit survey. From the leaving employee point of view, this survey can be useful for leaving some notes so that can be used to help an organization without destructive feeling. On the other hand, Employers see this exit interview can provide the reason why an employee leave.

Syiah Kuala University as an educational institution also need to carry on an exit interview for its students before their graduation. The first exit survey that conducted in Syiah Kuala University is held in April 2013. In one year, this University has four times graduation ceremonies, so that the exit survey should be conducted four time before graduation ceremony. This survey aims to help Syiah Kuala University improves its educational policies and qualities. Online exit survey is chosen because students can take the survey easily. However, the online survey need some checks to ensure that students fill out their own form and do not ask their friend to fill the survey for them. This problem can be avoided by asking the students to verify their own data before they are allowed to take the survey. Verification can be done using Web Service to check their data on the main database of Syiah Kuala University. This method can avoided redundant data.

Literature Review

Web service

Web Service can been seen as a modular application that accessed via web to provide distributed database. The aims of this application is to use XML as data format to integrate

applications that can be published, located and invoked using web technologies (Van der Aalst, 2003). The current web technologies only provide a collection of information without supporting how to process this information, this is where web service takes place to transform the web from just a collection of information into a distributed computational and data (Fensel, D., & Bussler, C., 2002).

RESTful Web Service

RESTful web service is a web application that uses web URIs in exposing its resources such as data and functionality which is built on REST architecture (Hamad et. Al, 2010). This web service can be used to create, update, retrieve, and delete via HTTP method.

Fielding (2000) discussed that the REST architecture is simply a client server based architecture. Both client and server exchange resources using stateless communication protocol (Hamad et. Al, 2010). This idea has made that the REST technology known as simple and lightweight.

JavaScript Object Notation (JSON)

JavaScript already support for JSON format as data exchange format. This made JSON easy for computer to parse and use, this format also readable by human (Nurseitov, 2009). According to json web site (www.json.org), the data in json format is estimated to parse faster about a hundred times compares to its rival XML. Below is an example of JSON syntax which is human readable.

```
{ "nim", "120101031002", "name", "eri asmara" }
```

Method

Verification data uses three steps:

1. Ensure the student's ID is registered in graduation list for the current graduation period. If not, the student is not allowed to continue the survey. If so, the student can continue to the next step.
2. Students have to input their personal details such as birth date, birth place, and mother's name. If the inputs correct they can go to the next step. If not, they will have to find the correct personal detail.
3. The last step is registration, this step use to store their password to the database, because they need this credentials to login to the survey system.

This verification can be seen clearly as shown in the figure 1.

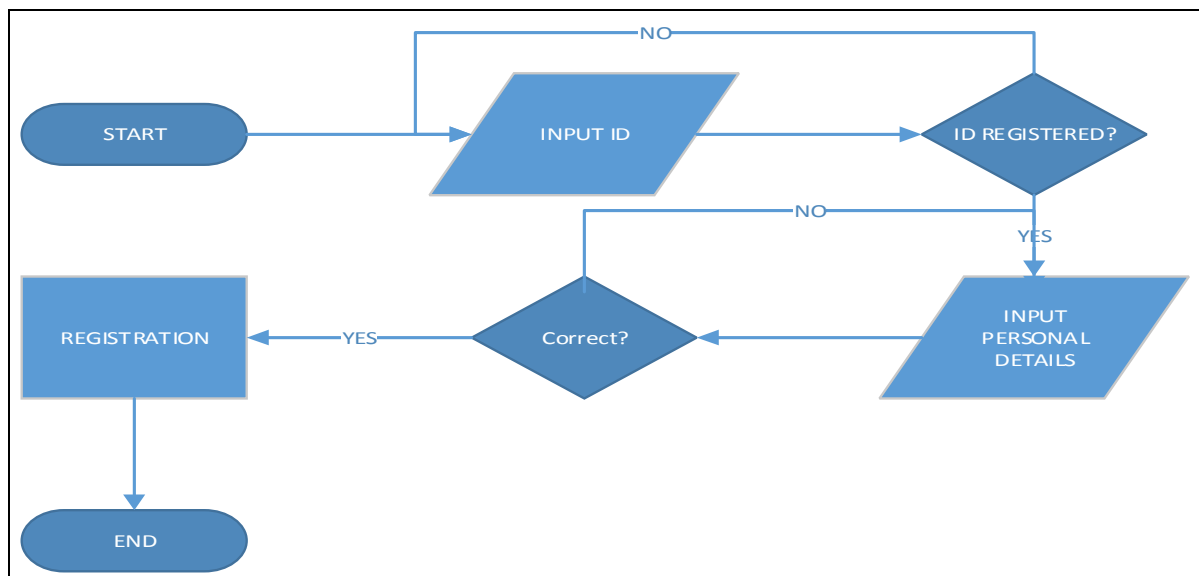


Figure 1. Verification process of the study

Results and Discussion

Statistical Review

Syiah Kuala University graduates 1615 students for May 2013 period graduation. Table 1 shows the details base on gender

Table 1. Total Syiah Kuala Graduate base on gender

No	Gender	Total
1	Male	617
2	Female	858
3	Unknown	146
TOTAL		1621

Meanwhile, the graduates students who fill out the survey is shown is the table 2.

Table 2. Syiah Kuala Graduate who fill out the survey base on gender

No	Gender	Total
1	Male	579
2	Female	713
3	Unknown	108
TOTAL		1400

Figure 3 shows the comparison between these two tables.

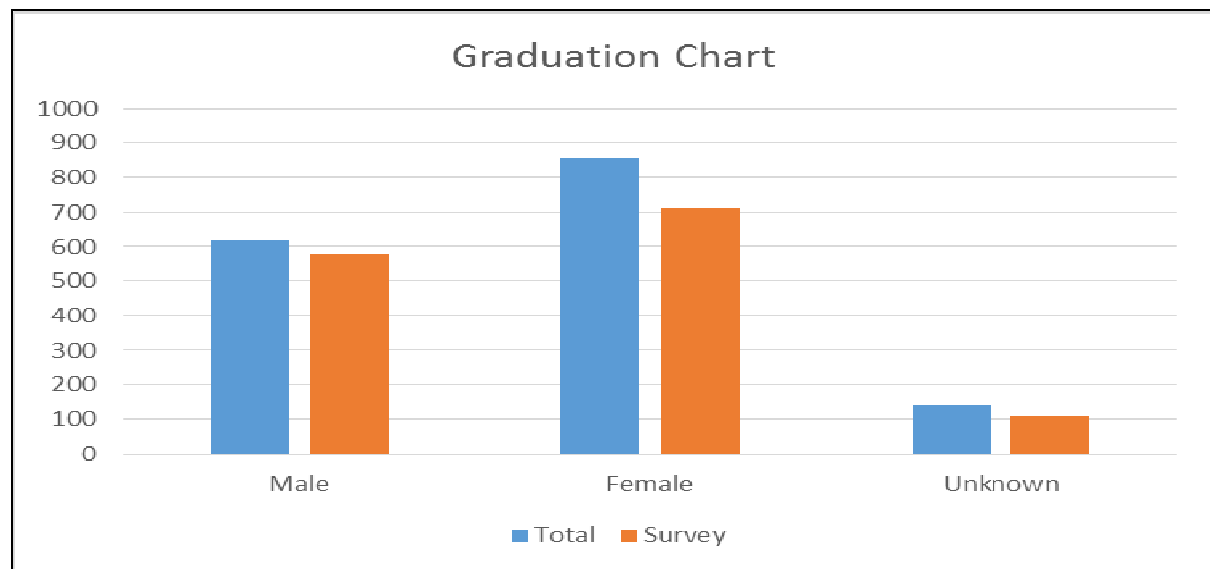


Figure 3. Graduation chart comparison based on gender

The figure 3 shows that about 93,84 % male graduates fill out the survey and female graduates are only 83,10% who take the survey. The unknown gender because their data is not recorded in Syiah Kuala main database and only about 73,97% who fill the survey out. The unknown gender usually because they studied in professional or graduates degree. Students from this degree is not recorded in main database server.

Verification Process

The verification process takes graduates inputs and compares them to the main database. The process failed to verify graduates data if they studied in some fields of study like professional classes or post graduate degrees. The survey will skipped the verification process for these kind of students using the array variable as shown below

```
$prodi_skip =
array ("0110303", "0120101", "0120201", "0130101", "0210102", "0320101", "0520701", "
0620401", "0710103", "0710104", "0710108", "0710117", "0710110", "0710121", "0710122
", "0710123", "0710124", "0760101", "0760102", "0920004", "0920001", "0920005", "0920
007", "0920006", "0920003", "0920002", "0920008", "0920009", "0920010", "0920011", "0
920012", "0920013", "0920014", "0920015", "0920016", "0920017", "0920018", "0920019"
, "0920021", "0920020", "0920022", "0930001");
```

As a result, about 42 fields of study from 7 faculties skipped the verification process. The number of students from each faculty who skipped the verification process can be seen in table 3.

Table 3. The number of graduates students who skipped verification process base on their faculties

No	Faculty	Total graduates	Graduates fill out the survey	Graduates Skipped verification process
1	Ekonomi	168	150	4
2	Kedokteran Hewan	55	47	21
3	Hukum	67	65	0
4	Teknik	94	93	0
5	Pertanian	112	112	0
6	KIP	577	409	0
7	Kedokteran	309	304	83
8	MIPA	82	80	0
9	Pasca Sarjana	114	81	81
10	Ilmu Sosial dan Politik	43	43	0
11	Koordinator Kelautan dan Perikanan	0	0	0
TOTAL		1621	1384	189

Table 3 shows that about 13.65% cannot be verified by the exit survey. Since the graduates who takes the survey is more than 86%, the result statistically accurate. The table also suggests that about 14.62 students did not answer the survey.

Conclusions

The conclusion is that more female graduates who did not answer the survey rather than male students and the system can be used for the next exit survey because its only missed about 13.65% verification process.

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