

Development of a Prototype for the Export Control List Management System

GwanYoung, Kim*^a

^a Korea Institute of Nuclear Nonproliferation and Control, Yusungdae-ro 1534, Yusung-gu, Daejeon, Korea, 305-348

1. Introduction

The international society has concerned the possibility of a diversion with strategic items into the nuclear weapon development. So they have regulated those, and our country also has done it.

Following a accomplishment of a UAE nuclear power plant export contraction in December, 2009 and a Jordan research reactor export contraction in March, 2010, thousands upon thousands of the strategic goods include the strategic technology will be supposed to transfer to UAE and Jordan. A lot of manpower in the government and the company concerned in addition to an enormous amount of time are needed so as to manage transferred items to UAE and Jordan efficiently.

Accordingly, the Export Control List Management System has developed 1) to decrease the administrative time required about implementations such as the classification, the export license 2) and to plan the practical use of manpower 3) and to enhance a convenience of businesses, the government and a company concerned by the KINAC and the KOSTI.

That system is scheduled to complete after June, and now a management of export items has done manually. This inconvenience can be solved by developing a prototype of the Export Control List Management System. Also an understanding of the Export Control List Management will be enhanced by doing it.

A procedure of a system development and results will be presented in this paper

2. Background

Nuclear export control began in the U.S. from the uranium trade ban during World War II and the export ban thereafter which went into effect with the U.S. Atomic Energy Act of 1946. The export control that originated in the U.S. became established as an international norm through the enactment of NPT in 1970, publication of the Zangger Committee guidelines in 1974 followed by the NSG (Nuclear Suppliers Group) guidelines in 1978.

Under this circumstance, the export of our nuclear power plant and research reactor becomes a main concern of the international society. Consequently, a necessity of managing export items become growing. The Export Control List Management System will be a good item to solve a concern of the international society. That is to say, transparency can be improved by taking care of strategic items systematically with that system.

A management of export items is not only for a problem of the international society. The government, a businesses and a reviewer will be a beneficiary from that system.

Moreover, a database of a nuclear power plant export will be important assets, and it will be helpful to next plant export.

3. Developments and Results

3.1 Development Environment

Eclipse that is a multi-language software development environment comprising an integrated development environment (IDE) and an extensible plug-in system is used for development environment.

For a programming language, Java that is a general-purpose, concurrent, class-based, object-oriented language is used.

Also, as a web based system, JavaServer Pages (JSP) that helps software developers serve dynamically generated web pages based on HTML, XML, or other document types is used. That Java technology has a many advantage so efficient, convenient, powerful, portable and inexpensive programming can be done with JSP.

As a database management system, MySQL is used. And Apache Tomcat is used for running jsp. Tomcat implements the Java Servlet and the JavaServer Pages (JSP) specifications from Sun Microsystems, and provides a "pure Java" HTTP web server environment for Java code to run.

3.2 Development Feature

The main feature in a system development is an adoption of the MVC model. With introducing the MVC model, the new requirement in the future can be flexible in responding. And this is the fundamental purpose of the object-oriented design methods.

In the MVC model, each part manages a function as shown in Figure 1. The model is a collection of Java classes that form a software application intended to store, and optionally separate, data. A single front end class that can communicate with any user interface. The view is represented by a JavaServer Page, with data being transported to the page in the `HttpServletRequest` or `HttpSession`. The Controller servlet communicates with the front end of the model and loads the `HttpServletRequest` or `HttpSession` with appropriate

data, before forwarding the HttpServletRequest and Response to the JSP using a RequestDispatcher.

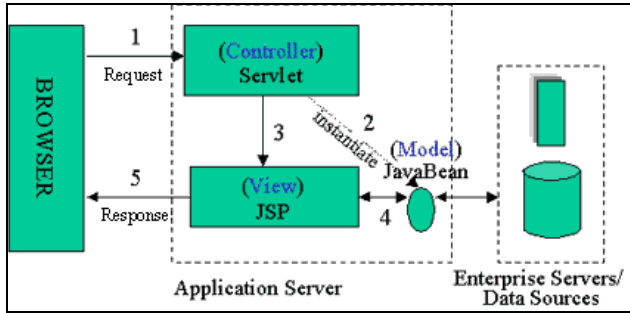


Fig. 1. The overview of MVC model

3.3 System Feature

There are 1) List Management 2) Task Management 3) Authority of User and Group Management 4) Statistical Treatment 5) Optional Function in functions of the Export Control List Management System.

The List Management and Statistical Treatment are realized on this developing system.

First, for the List Management, displaying export items applied with a paging logic method is developed. For further managing items, data transmission functions such as extracting data as a excel file, inserting data through a excel file are developed. Boards are created by a company, so items can be managed by a company. Of course, adding, deleting and modifying a individual item can be performed. To develop these functions, many libraries such as mysql-connect.jar, common-lang.jar, cos.jar, jxl.jar are used.

Figure 2 is shown a viewing the applicant list.

번호	유형 구분	품목명	납기	KINAC 판정일 년	KINAC 판정일 수	KINAC 승인자	KINAC 처리일자	비고
1	물자	태스틀1		2011-03-08	해당	1차	김관영	
2	기술	태스틀2		2011-03-08	해당	1차	김관영	
3	물자	태스틀3		2011-03-08	해당	1차	김관영	
4	기술	태스틀4		2011-03-08	해당	1차	김관영	
5	기술	태스틀5		2011-03-08	해당	1차	김관영	
6	기술	태스틀6		2011-03-08	해당	1차	김관영	
7	기술	태스틀7		2011-03-08	해당	1차	김관영	
8	기술	태스틀8		2011-03-08	해당	1차	김관영	
9	물자	태스틀9		2011-03-08	해당	1차	김관영	
10	기술	태스틀10		2011-03-08	해당	1차	김관영	
11	기술	태스틀11		2011-03-08	해당	1차	김관영	
12	기술	태스틀12		2011-03-08	해당	1차	김관영	
13	기술	태스틀13		2011-03-08	해당	2차	김관영	
14	물자	태스틀14		2011-03-10	해당	2차	김관영	
15	기술	태스틀15		2011-03-11	해당	2차	김관영	
16	기술	태스틀16		2011-03-12	해당	2차	김관영	
17	기술	태스틀17		2011-03-13	해당	2차	김관영	
18	기술	태스틀18		2011-03-14	해당	2차	김관영	
19	물자	태스틀19		2011-03-15	해당	2차	김관영	
20	기술	태스틀20		2011-03-16	해당	2차	김관영	

Fig. 2. Export item displaying

Also, for the Statistical Treatment, counting items by year, by company, by judgment result, by deadline and by judgment date is developed. With this function, efficient management can be done. Figure 3 is shown a screen of the statistical treatment.

납기일자		리스트 보기									
		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
회사1	견수	처리건	0	0	0	0	0	0	0	0	0
		반제	0	0	0	0	0	0	0	0	0
		합계	0	0	0	0	0	0	0	0	0
회사2	견수	처리건	0	27	0	0	0	0	0	0	0
		반제	0	27	0	0	0	0	0	0	0
		합계	0	27	0	0	0	0	0	0	0
회사3	견수	처리건	0	0	0	0	0	0	0	0	0
		반제	0	0	0	0	0	0	0	0	0
		합계	0	0	0	0	0	0	0	0	0
회사4	견수	처리건	0	0	0	0	0	0	0	0	0
		반제	0	27	0	0	0	0	0	0	0
		합계	0	27	0	0	0	0	0	0	0

Fig. 3. Statistical Treatment displaying

4. Conclusions

By developing a prototype of the Export Control List Management System, we can image a final production of that system. Even though a prototype system has only two functions, the List Management function and the Statistical Treatment function, it is shown that it can be used sufficiently. A final version of the Export Control List Management System will be included the other function as well as the synchronization between systems. Once the system will work, the government, a businesses and a reviewer will work efficiently and easily. Also a concern of the international society will get lower through a transparency enhancement with that system.

REFERENCES

- [1] JSP 웹프로그래밍 2.0, 삼양미디어, 김은옥
- [2] "http://www.wikipedia.org/", Wikipedia
- [3] "http://www.nuclearsuppliersgroup.org/", The Nuclear Suppliers Group (NSG)