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메쉬업을 통한 의학교육 메타검색시스템의 설계 및 구현

Design and Implementation of Medical Education System using Mesh-Up Meta-Search Program

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요 약 근래에 들어 여러 교육방법에 많은 변화가 왔다. 그럼에도 불구하고 자유로운 의학 및 전문 지식을 얻을 수 있는 교육환경을 조성하는데 어려움이 따르고 있다. 본 논문에서는 의학교육의 자유로운 학습을 위한 시스템으로 메쉬업 서비스를 통한 의학교육 메타 검색 시스템을 제안한다. 이 시스템은 사용허가를 받은 검색 API와 콘텐츠 API, 데이터 API를 통하여 검색 시스템과 동영상 콘텐츠 시스템을 설계하고, 이를 바탕으로 의학교육 메타 검색 시스템을 구현한다.

Abstract In recent years, several technologies have brought many changes in the field of education. Nonetheless, it is difficult to get freely medical and professional knowledge in the educational environment. In this paper, we study a free medical education system for medical education through service to the Mashup offers a meta-search system. Received permission to use the system API to retrieve the content API, data retrieval systems and video content via the API to design a system, based on this medical education, meta-search system is implemented.

Key Words : Open API, Mashup

1. Introduction

Currently many changes are taking place in many fields, but medical education guidelines of the education does not exist properly. According to the learning objectives is being made, even the distribution does not fit in of classroom situation. This understanding, students study handed down through generations, or are studying only goal of the study. Moreover, the situation does not fit into our country to the American system is based on the lessons that place. In this paper,

in these situations than the online list of free medical training to help the general's Open API-based search system, and Naver, Daum, Aladdin, Amazon, Google, etc. doseogeomsaekyong published online by using the Open API Open API based on the list meta-search system to build and meta-search through the medical education system is proposed. Here is a mashup by combining different songs creating new songs, but musical term, meaning that IT sector in the Web services offered by a variety of web information and a mix of services to develop new services means. That is a combination of different content of a website's content and services, creating a new dimension refers to. In addition, the enterprise mashup user only has an API that provides not only the content they produce.

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For example in the numerous websites that are provided by Google and the Open API, using the data portal can create a personalized iGoogle is a service.

This configuration of the personalized homepage will change from time to time is not fixed. The advantages of such a mashup service using existing resources to build new services because of making the cost of treatment is much less. Open API mashup service through a proprietary user interface or content is able to fuse them, largely a search request, search response, results interpretation, including use of search results can be established through four stages. Open API is used here on the website allows you to use it indirectly as a significant new approach to the search request URL, the search request parameters, the output field, the error code and consists of four kinds of messages, etc.

II. Related research

1. Mashup Services

Web services mashup service companies to allow access to their services to the public that the approach is derived from^[1]. Web services vendors released their own API based on the convergence of content, user interface or a new application service that will be made to develop mashups. Google, Microsoft and Amazon, as well as domestic companies such as Naver, the Aladdin, the company's content can be used outside of the API is released.

2. Open API

Open API and 'data or services available from outside the published API, so that' means^[2]. Open API uses the HTTP protocol and is being implemented, Open API request a larger search URL, the search request parameters, the output field, the error code and consists of four kinds of messages, etc.^[3]. How to search requests using HTTP GET and mainly, Open API, the data provided by XML, RSS, JSON format is

used and, most web programming languages can be easily handled. Third-party developers, developers, partners, significant service account on the General User, etc., an authentication key issues, determine specifications, services, implementation, testing, and five steps you can use the Open API^[4]. In addition, the Open API mashups can be used. In addition, the Open API, mashup, search using the larger request, search response, results interpretation, including use of search results can be established through four stages^[5].

III. Meta-Search System

Education have also been many changes during recent years. Nonetheless, medical education and professional knowledge freely available to the educational environment is a challenge.

In this paper, Open API, and it Mesh-up Services are able to learn through the free web meta-search systems to offer medical education, design and implement.

First, medical experts by producing educational videos can be uploaded to the foundation to manage it and make it available to end-user content, video content via the API implementation services and knowledge through data API, and Search API search service to implement.

표 1. 국내 Open API 서비스 사례

Table 1. Open API service in Domestic Practices

Sites	API Name	Available Features
Aladdin	Search API	Books
	Product API	Books
Google	SOAP Search API	Web pages
	AJAX Search API	Web pages, Books
	Book Viewability API	Book Detail
Naver	Data API	Books, dictionaries
	Search API	Web pages
	Content API	Professional material
KERIS	Content API	Papers, journals
	SRU API	Comprehensive list
KISTI	Search API	Papers, patents
	NDSL Webservice	Papers

Table 1 shows the domestic sites of the services provided by the Open API Open API deulyimyeo used in this paper. For medical education, books, web pages, academic materials, professional materials, papers, patents, and a search system is used to detect

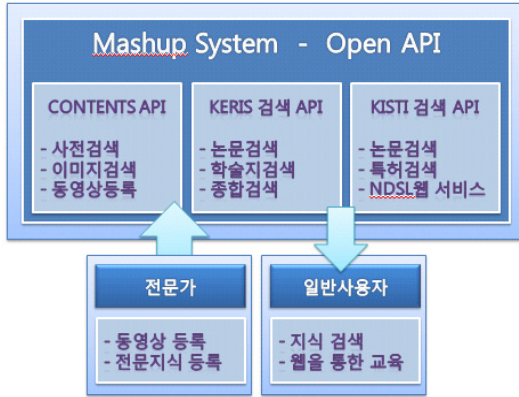


그림 1. 시스템 설계도
Fig. 1. System design

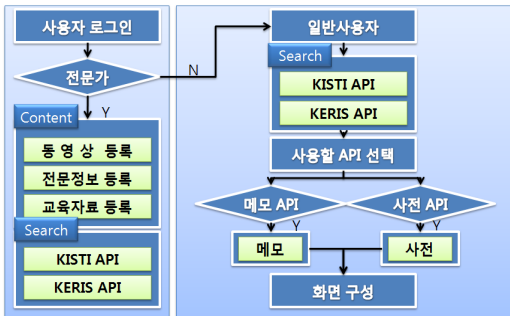


그림 2. 시스템 객체설계도
Fig. 2 System Access Flowchart

This is big money and start their own server, no need to have a system, or purchase a separate program, there is no need to create. Fig. 1 and 2 as shown in the video that provides Youtube or Naver Open API, etc. By utilizing its own video service is available at all video to upload, delete, modify, search, and can provide a total solution, and the Search Open API leverage on the web and you can easily find relevant information. In addition, pre-API, notes, and take advantage of API to easily browse and understand you do not know the

terminology does not make a note of parts that can be placed directly on the screen, you can add features.

```
public void con_info(){
    try{
        //연결정보입력
        sb.append("http://openapi.naver.com/search?");
        sb.append("&key=");
        sb.append("f8d74d85f07dc0c8563c5991dd935357");

        //UTF-8로 인코딩
        sb.append("&query="+ URLLEncoder.encode(keyword,"UTF-8"));

        sb.append("&display=5");
        sb.append("&start=1");
        sb.append("&target=kin");
        sb.append("&sort=sim");

    }catch(Exception e){
        e.printStackTrace();
    }
}
```

그림 3. 검색 API 프로그램
Fig. 3. Search API integration source

Fig. 3 is shown the source of the current search Search Open API is implemented in Java and works created by the search system.

IV. Experiments and experimental results

Open API-based medical education in this study suggest a mashup system implemented with web and Open API's performance, compare, evaluate, analyze the results is shown below.

표 2. Open API 성능비교

Table 2. Open API performance comparison

구분	네이버	다음	알라딘	Amazon	Google
인증여부	인증	○	○	○	○
	비인증	-	-	-	-
요청방법	SOAP	-	-	-	-
	REST	○	○	○	○
요청방식	GET	○	○	○	○
	POST	-	-	-	-
인증변수	인증	○	○	○	○
	서명	-	○	-	-
요청변수	기본검색	○	○	○	○
	상세검색	○	○	-	-
	검색어 강조	○	○	-	-
출력 결과 필드	캐시지 제공	○	○	-	-
	CDATA 적용	-	○	-	-
	RSS	○	○	○	-
출력포맷	XML	-	○	○	-
	JSON	-	○	○	-
	HTML	-	-	-	○
유효성 검사	-	-	-	○	-
에러 메시지	○	○	○	○	-
트레이 제한	○	○	○	○	-
XSLT	-	-	-	○	-
도움말	-	-	-	○	-

Table 2 is listed the performance of each of the Open API used to compare and analyze whether a vote certification, the request method, Authentication and request parameters, the output fields, output formats, validation, error messages, and traffic restrictions, XSLT, Help functions compared with about availability. fig. 4 and table 3 are analysis of the evaluation of the rating scale for each item scored, interactivity, design, ease of use, commerce functionality, and reliability were analyzed.

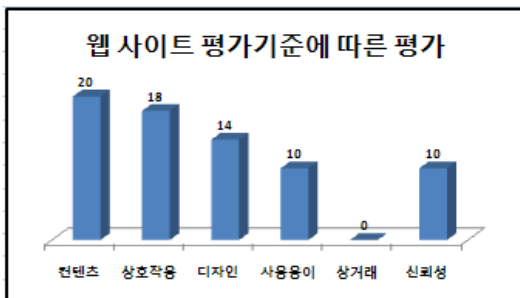


그림 4. 웹사이트 평가항목
Fig. 4. Web site evaluation criteria

표 3. 사이트 평가결과
Table 3. Site Assessment profiler

평가항목	점수	평가점수
1. 콘텐츠 (Contents)	20	20
전문성 (s1)	10	10
최신성 (s2)	5	5
이해의 용이성 (s3)	5	5
2. 상호작용성 (Communication)	20	18
매개체의 다양성 (s4)	5	5
상호작용기능의 편의성(s5)	10	8
응답성 (s6)	5	5
3. 디자인 (Design)	20	14
가독성 (s7)	5	3
일관성 (s8)	5	5
조화성 (s9)	5	3
즉시성 (s10)	5	3
4. 사용용이성 (Usability)	10	10
네비게이션의 편의성 (s11)	5	5
구조성 (s12)	5	5
5. 상거래 기능 (Commerce Function)	20	0
결제수단의 다양성 (s13)	5	0
결제수단의 안정성 (s14)	10	0
소비자의 보호 (s15)	5	0
6. 신뢰성 (Reliability)	10	10
컨텐츠의 신뢰성 (s16)	5	5
시스템의 신뢰성 (s17)	5	5
총합	100	72

V. Conclusion

Open API for searching domestic books that are available through the online list of rich content and use the shared data of the expansion, the expansion of subject access and subject search capabilities, meta-search service, expanding the availability of library collections, increasing the cost list and so the savings would be helpful. In addition to providing education and related services in a large web site with their Open API to provide service as Mash-up, and more effective educational services will gives rise. Open API to forward the plan to add multi-lingual information retrieval, and it is Google's Open API by Google AJAX Language API to translate queries and are wondering how to search. Based on the user's search history, automatic orientation and specific intelligence that can search and make recommendations about the service plans to research.

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