Advanced Search Algorithm Protocol (ASAP)
A demonstration

Preparation

Internet access required. The demonstrator is at: www.igsl.co.uk/xxp/asap_prototype.

Also required for comparative purposes:

The Careers Advice service: www.careersadvice.direct.gov.uk/findacourse

UCAS Course Search: www.ucas.com/students/coursesearch/coursesearch2009

These comparative searches were developed in Spring 2009, so precise numbers of courses returned may change over time.

Firefox is the preferred browser, though it has been tested also with IE6 & 7. Set these sites up as tabs for ease of displaying.

What to cover (speech by person demonstrating)	Action	You will see…
ASAP is an XCRI-CAP compliant service to provide better subject search facilities for learners. Initially it is envisaged that this will be used by course advertising websites. The challenge that we are addressing is to provide lists of courses to learners that are highly relevant to their chosen subject search criteria, more highly relevant and therefore of better quality than conventional subject search mechanisms. Compared with lists from conventional services, results lists from ASAP should contain: (1) More courses that are relevant; (2) Lists whose entries are scaled by their relevance; (3) Less incorrect entries. This demonstrator seeks to show how ASAP searching compares with traditional search facilities based on one of: (1) Arbitrary keywords; (2) Classification using predetermined keyword lists; (3) Single subject classification or coding systems. [Check that the audience understands the strengths and weaknesses of these approaches. If they don't, briefly explain.] The demonstrator also provides some technical details of how ASAP does this. It's also worth noting from the start that as well as being a website, the ASAP service could be provided as a plug-in B2B/system-to-system service for course advertising websites to use (by querying ASAP for course search results); or as an add-on for learning providers to make use of directly (by submitting courses to an ASAP aggregator); or as a	Make sure that each of the required websites is loaded up in Firefox.	ASAP welcome page. Careers Advice Find a Course page. UCAS Course Search page.

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portlet for anyone to use (by including a link in their own website to an ASAP portlet) and for other uses we haven't yet thought of! The demonstrator uses a limited set of courses information as an aid to understanding. These courses are primarily from the Open University.		
The user of this ASAP demonstrator starts by selecting any desired subject. ASAP presents an alphabetical list of ALL terms held that match the text entered. The interface also help in a number of ways. Selecting the words from the list helps indirectly avoid spelling misteaks [sic ;-)]; you'll notice straight away if you make a mistake as the list will suddenly go blank. Selecting from the list also helps the user come up with a word or phrase with meaning for the search. This may sound restricting in that the system is encouraging you to pick one of the words or phrases it knows, but when you think about it that's better than you having to just keep guessing what words will find results (as is the case with a normal 'free style' search text – whilst that gives the impression of being less controlled, its actually 'freeing' you to type meaningless or pointless words!). It also indirectly gives prompts, options, suggestions which the user may otherwise not have considered, and again they're always suggestions with meaning.	Key in com	com in box Apple Macintosh computers… British Commonwealth history…
The list changes as we type.	continue comp computer computer s	computer science… penetration testing (computer systems)
At any stage as we type, we can select a desired term from the drop-down list.	select computer science	Drop-down disappears.
Then click on the Search button (or use the keyboard)	select Search button	Slight pause (2 to 3 secs) as the results are presented **[Note that this is browser rendering, if system to system then no delay.]**
We get a Results list of relevant courses with the most relevant at the top within the context of our limited demo data set of course. For the purposes of this demo we've created 3 tabs to show the flexibility: the first tab is the raw results ordered by relevance, the second is a more meaningful display which groups the courses by subject area and the third is the same courses again but this time organised by learning provider. Similar tabs could be added for almost any representation of the data set	Point to top few courses in list.	68 courses displayed.

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(geographically, by funding available, and so on - whatever the available data supports).		
Computer Science is a broad subject with many specialisms, so we would normally group the results by subject area. Notice that computer science itself is at the top, because it's the most relevant term to the selected term – it IS the selected term! The other terms listed are topics within computer science.	select Subject Area tab	Long list of subject areas.
To illustrate the power of ASAP, we'll take a subject example with narrower coverage.	click New Search	Returns to welcome page.
We'll choose 'security' and try to find something on information or computer security; it's topical! Notice the different types of topics available, from specific software to general concepts.	key in security	Border Manager (internet security system)… security policy
We'll pick computer security systems. The top 2 courses are very specific to the topic, the others less so. The bottom ones are fairly general computing courses.	select computer security systems	6 courses are returned
Going to the Subject Area tab, we can see the relevance of the entries on the list more clearly.	select Subject Area tab	computer security systems network and systems management computer science
Against each subject area, we can see the number of courses included. Clicking on the subject opens the list. As we go down the list of subject areas, we're gradually broadening the area of coverage. computer security systems is included within network and systems management, and network and systems management is included as part of computer science.	select each subject to open the lists.	course lists
If we're not interested in broader courses, we can ignore these subject areas, but the learner can very easily find courses that will broaden his or her horizons.		
The objective of the ASAP service is to help users find the courses provided by Learning Providers, with minimal effort on both sides. Consequently ASAP doesn't try to hold a copy of the course data (as that would create an extra admin burden for the provider, or risk presenting course information which was out of date). Instead ASAP looks to hold the minimum information required to allow the user to get a feel for the course PLUS a link back to the providers' own	select the Learning Provider tab and open the course list. Point to the link to course column	courses grouped by Learning Provider

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information or web site. This also has the added benefit of delivering users/'hits' to the provider's website. **[This IS fully operational but requires the provider to supply this detail]** ASAP isn't seeking to own data; the ownership of the data will remain with the learning provider or data aggregating organisation. ASAP is all about connecting people to courses by providing them with better information.		
For comparison, let's do the same search using the Careers Advice website. This website uses the data in the National Learning Directory [explain what this is if needed]. Its search approach is primarily using a keyword list, which is kept up-to-date dynamically – it's very good for reacting to terms that people commonly use and for reducing nil results. It's less good at relevancy, because it relies on the presence of keywords in the course title. There is an alternative method of searching here that uses a limited facility to browse part of a subject classification system. ASAP is different because it uses a thesaurus based approach, which maps search terms to both keyword lists and subject classification systems, getting the best from both techniques.	go to Find a Course Firefox tab	Find a Course Advanced Search
For comparison purposes, we'll limit the search to the Open University – data has recently been provided to the NLD, so we know it's pretty much the same as in our sample on ASAP.	select Browse by provider; then select O and Open University (The)	Over 800 courses at the OU
We'll start by using 'computer security systems' because we think we know what we want.	key in computer security systems	
We get no results.	then Search now	No results
This is a bit unfair, because when we searched on ASAP we used 'security' first. So let's do that.	Use BACK button on browser, then key in security	
The system retrieves the Information Security Management course we saw in ASAP. But not the Vandalism in Cyberspace one, nor any suggestions for a broader approach.	then Search now	1 course record
That's a very fine-tuned subject area. Let's pick a mid-range subject, for example 'information systems'.	return to ASAP Firefox tab click on New Search	ASAP welcome page
We'll search on information systems	key in information sys and pick off list. Then hit Search	
Then look in Subject Areas.	select Subject Area tab	28 results

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There are 11 subject areas. We can easily review the courses by expanding any that we're interested in.	select information systems	Expanded list
Note that there are both broader subjects…	select computer science	Expanded list
… and narrower ones.	select website development	Expanded list
We can compare the mechanics of this search with a similar search on UCAS' Course Search, though we won't be able to compare results, because the OU is not in the UCAS application system.	select UCAS Course Search Firefox tab	UCAS Course Search welcome page
There are two ways to search: put in your own term or select from an alphabetical list of predetermined keywords. Keying in your own term presumes that the term is used in the search system. If it's not used, you select one from UCAS' list. UCAS doesn't use a structured thesaurus for this, which makes it less likely than with ASAP that you will find a usable term. The alternative method is to select from an alphabetical set of keywords generated from words in course titles, topped up by allocation by institutions. This suffers from a traditional weakness that it relies on course titles, which don't always include the exact word that the user might pick (accounting vs accountancy for example). As I've already mentioned, ASAP uses keywords and classification, so should give superior results. Let's start with the alphabetical list method.	select search by subject	Alpha list of keywords
This requires us to pick a letter, but we're not really sure whether we want 'information systems' or 'computer information systems'. We'll try 'information systems'.	select I	Keyword list
Closest we get is Information Science or alternatively we can pick the broad 'information' heading. Let's try Information Science first. The 72 courses are presented in order of institution, and we have to trawl through the list to pick out visually those that might be of relevance. We have to make a judgement about the relevance ourselves, and we have to bear in mind that the keyword wasn't exactly what we wanted.	select Information Science, then all Information Science courses	72 courses
Alternatively, we could go back a step and try 'information' or carry out the free text search option.	BACK four times	UCAS Course Search welcome page
This facility provides many other search functions in addition to subject searching. We'll just concentrate on subjects.	select search	Search page
This time we get a very long list, sorted by provider, again with no relevance filter, but many courses do look	key in information systems and hit search	537 courses

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relevant, and of course, many of these were not retrieved by the other method. Again we have to make a judgement about the relevance ourselves.		
Let's try a similar search in Careers Advice, but limited to the OU. Select the OU again.	go to Find a Course Firefox tab and select Browse by provider. Select O, then Open University (The).	
Enter information systems. We ignore the qualification records for comparison purposes; these are not in our ASAP sample data set. We have 3 relevant courses that match with our search on ASAP.	key in information systems and hit Search now.	7 courses
In ASAP we have 6 highly relevant courses, 3 of which were missed by Careers Advice. We also have a range of additional suggestions that are partially relevant.	select ASAP Firefox tab, and open the Subject Area for information systems	6 courses
This is the heart of what ASAP is all about: *Interoperable subject vocabularies for better search results*		