Chapter 9

Library Puzzle

This assignment is an exercise to get you more familiar with the resources in the library, particularly with the computer indexes available on MELVYL (now called the California Digital Library) and with the hardcopy indices of most value to computer people. The puzzle was devised by Kevin Karplus, in imitation of puzzles created by Alan Ritch, a librarian at UCSC, who wrote and edited the Mind of MELVYL newsletter (affectionately known as MOM), which sometimes contained such puzzles.

The puzzle will stretch your library and web search skills beyond the level of competence attained by most students or faculty. We hope that the assignment will make it easier for you to do any necessary library research for your final paper, and the library search skills exercised should also be applicable to other courses and research projects.

Some of the questions below are simple, straightforward exercises of the obvious MELVYL commands, others are puzzle questions requiring ingenuity and perseverance to find the requested information. These library puzzles often appeal to crossword puzzle fanatics.

Remember this is a writing class! For each question below, give one or two sentences as an answer—not just the one word or number the question asked for. Show the search command that found the answer you got, and, perhaps, some commands that you thought should work and didn’t. When you get a negative result, show partial solutions (e.g., UCSC doesn’t have it, but someone else does, and we have something else by the same author). Also, give full call numbers for books, so that someone could take your solution set and go straight to the place on the shelves where the book ought to be. Cut-and-paste answers that include large chunks of the results from the searches are a good thing for this assignment (though not for other assignments in this class).

Here is an example question and answer:

**Does UCSC have the latest edition of The Joy of T\TeX?**

*No*, UCSC does not have the latest edition, based on the exact-title search f xt joy of tex. UCB, UCD, UCI, UCLA, and UCSD have the most recent edition:

**UCLA Engr/Math Z 253.4 T47 S673 1990**

but the UCSC library has only the 1986 edition:

**UCSC McHenry Z253.4.T47 S673 1986**

Most of the questions can be answered without visiting the library, since MELVYL is accessible from any terminal on campus. You can also access the library databases from off-campus computers if you set up the http proxy of your web browser—see http://library.ucsc.edu/services/sluglink/slink_connect.html. Although the puzzle is mostly doable from any web-connected computer, you might want to visit McHenry library or the science library to see some of the books and journals that you find, and you will probably need help from a reference librarian in doing some of the searches.

9.1 General library info

1. Where can you find a list of all the journals for which UCSC provides free electronic access? (Give the URL.)
2. What are the hours for the Science Library? Where can you find changes to the hours during quarter breaks and holidays?

9.2 Catalog database

1. \LaTeX{} is a popular tool for computer scientists to use to create documents. How many books on the tool does the UCSC library have? Note: I’m not interested here in books on rubber plantations or safer sex. Which of the books would you try to find if you wanted to create HTML documents with \LaTeX{}? Which would you try to find for help creating a slide presentation?

2. Find a recent (twenty-first century) conference on computer game playing for which UCSC has the Proceedings. Give full information about the name, location, and date of the conference, as well as the call number for the hard copy. How many talks were there at the conference?

3. Bioinformatics is a relatively new field, and “bioinformatics” has only recently been added as a subject term in the catalog. Find four other subject search terms that help find bioinformatics materials, and say how many books are found at UCSC with each term. Explain how you found and chose the terms.

4. How many computer files does UCSC have cataloged? How many entries (all forms) does UCSC have in the CAT database? What fraction of UCSC’s holdings are computer files? I was not able to answer the second part of this with the Web interface to the catalog—it provides much poorer access to such information than the older text-based interface. They’ve dumbed things down for the novice user, making it harder for people who know what they are doing to find information. You may have to telnet to melvyl.ucop.edu and try “help stats” to find the relevant information.

5. Most of you have taken, or are about to take, CMPE 16. Find the textbook for the class. Does the UCSC library have the edition currently being used? How many other books can you find that appear to cover approximately the same subject matter (perhaps at a different level)? What search did you use to find the books?

9.3 World-wide web

The following questions are intended to improve your web-searching skills. I used to find the Alta Vista Advanced Query page (http://www.altavista.digital.com) the most useful of the web search engines, but I have since switched to Google (http://google.com), which gives more precise hits without the advertising junk that overwhelmed Alta Vista. Actually I have set up my browsers to use http://www.google.com/advanced_search as my home page (or as a button on the tool bar), as I find the Advanced Search page of Google a little easier to use than the standard Google page.

1. Find official statistics on the enrollment growth at UCSC from Fall 1996 to Fall 2001. There has been talk about how the growth of the graduate schools at UCSC has come at the expense of undergraduate education—is there any evidence for this? Do the grad students make up a larger or smaller fraction of UCSC than they used to?

2. I now use the Prosper package with \LaTeX{} to produce my overhead transparencies and PDF files for computer display. Find documentation for installing and using this package.

3. Find a report from the National Academy of Sciences on responsible conduct in research.

4. List at least 16 web sites with meaty information about computer ethics or engineering ethics (that is, I don’t want web sites that are just pointers to organizations or other web sites).

5. Find explanations and analyses of the Challenger shuttle disaster in 1986. Find out how to get the videotape filmed at MIT of the talk given at MIT about the aftermath of the Challenger disaster for the engineers involved in warning about the danger of launching. Note: one of the engineers got a prize from the American Association for the Advancement of Science for his honesty and integrity in the wake of the disaster—who and when?
6. You have a PC board with a part on it that you suspect is a digital signal processor. The part number on the chip is 21160M. Find a data sheet for the part.

7. You need a large, fast FIFO chip to act as an input buffer for your latest interface project. Find a directory listing at least 50 different FIFOs. Who are the main manufacturers? Give the manufacturer and part number for a 32k × 9-bit FIFO.
9.4 INSPEC, PUBMED, and BIOSIS databases

The Inspec database is probably the most useful index for computer science, computer engineering, and electrical engineering majors. Bioinformatics majors will find it useful, as well as PubMed and BIOSIS. Actually, anyone can find PubMed useful, as it is the best index to medical literature, which any one may need to access after being diagnosed with something they don’t know much about.

The INSPEC and BIOSIS databases are ones which UC has a license to use. You must come from a UC network or use the HTTP proxy server at libproxy.ucsc.edu port 3128 (see instructions at http://library.ucsc.edu/services/sluglink/slinkconnect.html).

1. Using BIOSIS, find an article about the synthesis of indigo in plants, particularly speculation about making blue flowers in plants that don’t usually have that color (such as roses).
2. Using INSPEC, find a survey paper about using computers to play the oriental game “go”.
3. Using INSPEC, find articles about light-emitting polymers. Find at least 10 from the past year.
4. Using PubMed, find at least three different substances used to cement broken bones or use as bone-graft substitutes. Provide a recent paper on each of the substances.

9.5 You figure out what indices to use

For the following questions it may be useful to use paper sources in addition to the computer indices. Please outline your search strategy, and tell us what false leads you followed, as well as how you finally found the solution.

1. Find papers on algorithms for aligning the sequences of RNA molecules.
2. What are Kevin Karplus’s first and second published papers? How many times has each been cited? What is his most cited paper?
3. What is the largest independent used bookstore in the US? How many copies do they have in stock of Norton Juster’s The Dot and the Line: A Romance in Lower Mathematics? Don’t forget to count both hardback and paperback, and explain how you got your answer!
4. Find an interview with Jim Kent that mentions learning French the hard way. Give a pointer and explain the question.