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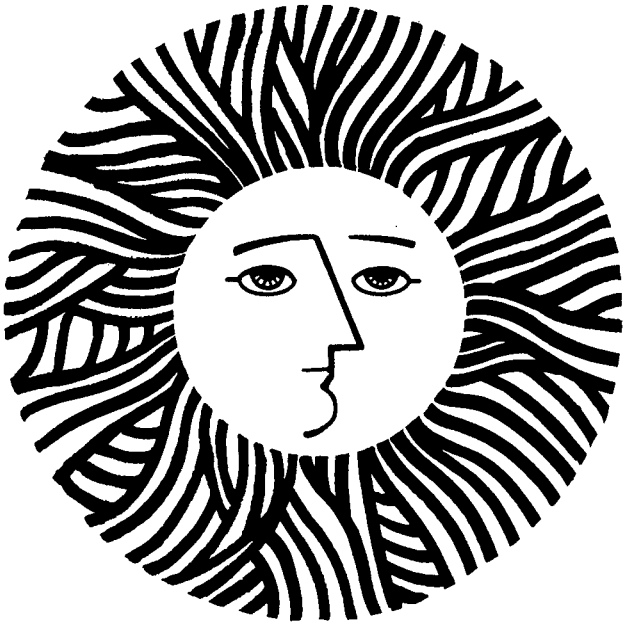

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VIAQ DATABASE TUTORIAL

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Energy and Environment Division
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University of California
Berkeley, CA 94720
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INTRODUCTION

The Ventilation-Indoor Air Quality (VIAQ) database is a computerized information system developed by the Ventilation group in the Energy Efficient Buildings program at the Lawrence Berkeley Laboratory. The data system is interactive and can be accessed by remote users over the telephone lines via a computer terminal. Interested parties should contact the Ventilation group to establish a computer account with the data system.

The VIAQ database was developed in response to the need for managing an increasing amount of bibliographic and other related information in this field. A data system was determined to be necessary for information to be stored and effectively retrieved for flexible presentation, manipulation, and modification over time. In an effort to minimize extensive software development, we have utilized an existing database management system that meets these information requirements. The database management system selected is called SPIRES (Stanford Public Information Retrieval System) and operates on an IBM 3033 computer at Stanford University.

The VIAQ database can be accessed directly by subfile name in SPIRES or by using the VIAQ "memu" program for the selection of database subfiles. The greatest part of this report is a simulation of a user's interactive session with the database system.

COMPUTER TERMINAL SET-UP

Remote communication with the computer at Stanford requires access to a computer terminal equipped with an acoustic coupler for the telephone

connection. The following settings are to be used:

Acoustic Coupler

Half Duplex

Terminal

Full Duplex

300 BAUD (30 CPS)

Even Parity

Lower Case

On a standard "ASCII" terminal keyboard, the character set (96 printing and 33 control characters) is similar to that on most typewriters except that additional keys are provided for various terminal and system control functions. The user should become familiar with the following control keys:

Return--The carriage return key will return the carriage or, cursor, on the CRT, to the left margin and, simultaneously, instruct the computer to accept the data typed.

Break--The break key, that may also be labeled "interrupt" or "attention," is used to terminate the session.

The easiest way to connect with the Stanford computer is to dial it directly. The telephone numbers for remote users are:

(415) 328-4000

(415) 328-4020

Dial one of the above numbers and wait until a high-pitched tone comes on. Place the telephone handset in the acoustic coupler and type lower case "o" one or more times. Then press the carriage return and identify yourself.

If long distance telephone charges are a consideration, the user can access the computer by calling a local TELENET (computer network) number

which links the Stanford computer to the local terminal via a computer relay network. (See appendix for sign-on procedure and listing of local access points/phone numbers.)

USER ACCOUNT IDENTIFICATION

ooo(CR)

Stanford Campus Facility Line 122 17:20:28

17:15 Service Scheduled to End at 6:00 PM, Will Resume at 7:30 PM.

Terminal? r03(CR)

User? r03(CR)

Group? xa(CR)

Keyword? new(CR)

*Type in Show Mail if Any Mail Messages Have Appeared Above.

*Type in ..Control to Begin the System Execution.

TROUBLE SHOOTING

As with all computer systems, problems can occur. If Stanford's computer system "goes down", the database user has no recourse but to wait until the resumption of computer operations. Usually, a message will be displayed on the terminal warning when the system will be out of service. Occasionally, other problems may occur with the system which result in the user's inability to receive or enter new data. The first thing to do is to check that the connection on the acoustic coupler is intact. Most telephone couplers have a panel of lights that indicate whether the power is on and whether the terminal is receiving a signal via the coupler. If all the panel lights are lit, it is likely a computer system problem. In general, the best approach

to unexpected stops of the system is as follows:

**Wait 5 minutes, perhaps the system will clear up.

**Type the command GO--a solution for the termination that occurs when the user has hit the BREAK/ATTN key too many times in succession.

**Log on again--

```
*
* WELCOME TO THE VENTILATION-INDOOR AIR QUALITY (VIAQ) DATA SYSTEM
*
*
* Do you wish to see preliminary data system information?
:  [ Please enter YES(Y) or NO(N) ] YES
*
* --GENERAL INFORMATION--
*
* The VIAQ Data System, developed at the Lawrence Berkeley Laboratory,
* consists of three database modules used for searching and retrieval
* operations and three data system support modules.
*
* Database Modules
* 1 --Bibliographic Database-- Contains bibliographic source information which
* may be retrieved by specifying the author, subject keywords, date of
* publication and/or other reference information.
* 2--Who's Who Database--Maintains a searchable compilation of information on researchers in
* government and private industry working in the field of building ventilation and
* indoor air quality.  The database may be searched by name or area of professional
* interest.
* 3 --Thesaurus Database-- Maintains a searchable listing of subject keywords for
* the retrieval of references in the bibliographic database and areas of interest
* for researchers in the Who's Who database.
*
* Support Modules
* 4 --News-- Current database information
* 5 --System Commands-- Summary of available system commands.
* 6 --Suggestions--Work space for database users to send comments and
* suggestions to the database staff.
*
*
*  You may go from one system module to another by means of the
*  SYSTEM MENU.  The MENU may be re-entered from anywhere simply
*  by typing the command ..MENU   .
*
*  *******REMEMBER****** That all SYSTEM COMMANDS are prefaced
*  with two periods (..) .
*****************************************************
*                                                   *
*  The following system resources are available...... *
*                                                   *
*    1. --BIBLIOGRAPHIC-- DATABASE                  *
*    2. --WHO'S WHO--     DATABASE                  *
*    3. --THESAURUS--     DATABASE                  *
*    4. NEWS                                        *
*    5. SYSTEM COMMANDS                             *
*    6. SUGGESTIONS FROM USERS                      *
*                                                   *
*****************************************************
* Please select a resource by number, or enter a system command...
: 1
```

-Message upon entering account info.

-Enter "yes" to review preliminary info

-Select to access the bibliographic subfile

```
*
*  Do you wish to see instructions on searching the BIBL database?
:  (YES/NO) YES                                                    -Enter "yes to review info.
* The bibliographic database may be searched by using the following bibliographic
* indexes to locate references in the database.  The user may browse a
* given index to sample its value or may use an index to find a bibliographic
* citation.
*
*     ---INDEXES---
* NAME        KEYWORD    LANGUAGES    TITLE
* To review a sampling of the information contained in the INDEXES
* use the BROWSE command followed by the INDEX name.
*           EXAMPLES
* BROWSE NAME      BROWSE KEYWORD
* BROWSE LANGUAGES     BROWSE TITLE
*  **Note browsing the title index will individually display the words which may
* appear in a reference title rather than the title string.
*
* To locate a record in the bibliographic database use the FIND command followed by
* an INDEX and a TERM.
*
*          EXAMPLES
* FIND NAME BERGLUND
* FIND NAME BERGLUND OR PIERCE
* FIND NAME BERGLUND AND KEYWORD ENERGY CONSERVATION
* FIND NAME BERGLUND AND KEYWORD DOORS OR WINDOWS
*
* The results of a search may be displayed using the TYPE command which displays
* the entire bibliographic citation.  If you wish a partial listing of * the
* reference, use the TYPE command followed by one of the following ELEMENTS:
*           ___ELEMENTS---
* TITLE    NAME    ISBN    CODEN    ABSTRACT    KEYWORD
* REPORT.NUMBER     LANGUAGES     AUTH.AFFILIATION    CONFERENCE.NAME
* CONFERENCE DATE    SO.TITLE    SO.VOLUME    SO.NUMBER
* SO.DATE    SO.PAGE.NO
*
*      EXAMPLES
* TYPE TITLE NAME ABSTRACT
* TYPE NAME AUTH.AFFILIATION KEYWORDS
*
* You may ask the system to pause after displaying each record by using the
* TYPE PAUSE command which will display one reference at a time.  To view the
* the next reference hit the RETURN/SEND key.
*
*
*   You may now begin searching.  When you are finished, type
*   ..MENU to return to the main MENU.
*
-)                                                                 -Arrow to indicate that system
                                                                    is ready to accept commands
```

```
browse name
BELLAR
RHYNER
WICKE
WINTERHALTER
WOODS
YANG
YUAN
ZWEIDINGER
->
```

-Browse the index called name to sample the names in the database

```
   find name Bellar
-RESULT: 2 CITATION(S)
-> type
```

-Locate the bibliographic references authored by "Bellar"
-Type the references on the terminal

1. Bellar, T. A., Sissby, J. E., Jr.

Direct gas chromatographic analysis of low molecular weight substituted organic compounds in emissions.

ENVIRON. SCI. TECHNOL. 4(2): 150-156, 02/--/70.

ABSTRACT: This paper describes an automated, gas chromatographic method for direct analysis of C2 through C4 aldehydes, C3 and C4 ketones, and various other oxygen-, nitrogen-, and halogen-containing organic compounds present in combustion effluents. Retention times are given for a great variety of compounds this system is capable of analyzing. Examples of chromatograms from analysis of samples of auto exhaust, trench incineration effluents, and ambient air are included. The limit of detection for the system is 0.05 p.p.m. of acetaldehyde.

KEYWORDS: aldehydes, ketones, organic contaminants, air pollution, air sampling, sample analysis, retention times, vehicle emissions, gas chromatography

---

2. Leach, P. W., Leng, L. J., Bellar, T. A., Sissby, J. E., Jr., Altshuller, A. P.

Effect of hydrocarbons to oxides of nitrogen ratios on irradiated auto exhaust. II.

J. AIR POLLUT. CONTROL ASSOC. 14(5): 176-183, 1964.

KEYWORDS:

```
   find name Zweidinger
-RESULT: 1 CITATION(S)
-> type title name
```

-Locate the bibliographic references authored by "Zweidinger"
-Type the title and author of the reference only

```
 TITLE = Development of methods for sampling and analysis of polychlorinated naphthalenes in ambient air.;
 NAME = Erickson, M. D.;
 NAME = Michael, L. C.;
 NAME = Zweidinger, R. A.;
 NAME = Pellizzari, E. D.;
->
```

```
find name Hollowell
-RESULT: 25 CITATION(S)
->
  and name Berk
-RESULT: 14 CITATION(S)
->

  and so.date >1979
-RESULT: 6 CITATION(S)
->
  type title
```

-Locate references authored by "Hollowell"

- Locate references authored by "Hollowell" and "Berk"

- Locate references authored by "Hollowell" and "Berk" that were published after "1979"

-Type the titles only

TITLE = The effects of energy-efficient ventilation rates on indoor air quality at an Ohio elementary school.;

TITLE = Indoor air quality measurements in energy-efficient residential buildings.;

TITLE = Building ventilation and indoor air quality.;

TITLE = The impact of reduced ventilation on indoor air quality in residential buildings.;

TITLE = Radon in energy-efficient residences.;

TITLE = Residential ventilation with heat recovery: Improving indoor air quality and saving energy.;

```
-> type skip 3
```

- From the previous search result of 6 citations, type the 4th and 5th and 6th citation

1. Berk, J. V., Hollowell, C. D., Pepper, J. H., Young, R. A.

The impact of reduced ventilation on indoor air quality in residential buildings. LBL-10527 16 p., 03/--/80.

ABSTRACT: Rising energy prices have generated a national incentive to reduce ventilation rates in buildings and thereby lower heating and cooling costs. One of the ramifications of reducing ventilation is that indoor air contaminants build up and pose a health risk to occupants. The study reported here is part of a broad research program being conducted at the Lawrence Berkeley Laboratory to determine the extent to which low ventilation rates are compatible with good indoor air quality. Overall indoor air quality is influenced by air-exchange rates, types of appliances and building materials used, and occupant activities. From the numerous indoor air pollutants we have studied, four (carbon monoxide and nitrogen dioxide from gas appliances; formaldehyde from particle-board, plywood, urea formaldehyde foam insulation, and gas appliances; and radon from soil, building materials and ground water) are receiving considerable attention in the context of potential health risks associated with energy-conservation. Our field monitoring studies in energy-efficient residential buildings have demonstrated that, in some cases, these indoor-generated pollutants exceed outdoor air-quality standards in houses having air-exchange rates of less than 0.5 air changes per hour. The results of our research suggest that further studies, designed to include a broader range of infiltration rates and occupancy conditions, are needed before

extablishing energy-efficient infiltration standards for residential buildings.

KEYWORDS:

---

2. Hollowell, C. D., Berk, J. V., Boegel, M. L., Ingersoll, J. G., Krinkel, D. L., Nazaroff, W. W.

Radon in energy-efficient residences. LBL-9560 11 p., 03/--/80.

ABSTRACT: Radon concentrations were measured in seventeen houses incorporating energy-saving features, most of which included specific measures to achieve low infiltration rates. Ventilation rates in these houses ranged from 0.04 to 1.05 air changes per hour; corresponding radon concentrations were found to range from 0.6 to 22 nCi/cubic meter. In general, radon concentration tended to increase with decreasing ventilation rate. In one house, a mechanical ventilation system with an air-to-air heat exchanger was installed, and radon concentrations were measured at selected ventilation rates. The correlation between increasing ventilation and decreasing radon concentration was confirmed, and it appears that mechanical ventilation with air-to-air heat exchangers can maintain air quality as well as energy efficiency in many houses where air quality problems exist.

KEYWORDS:

---

3. Roseme, G. D., Berk, J. V., Boegel, M. L., Halsey, H. I., Hollowell, C. D., Rosenfeld, A. H., Turiel, I.

Residential ventilation with heat recovery: Improving indoor air quality and saving energy. LBL-9749 27 p., 05/--/80.

ABSTRACT: Interest in conserving energy is motivating homeowners and builders to reduce natural infiltration to very low levels. This large reduction in ventilation can lead to indoor moisture problems and, more importantly in terms of human health, increased levels of indoor pollutants such as nitrogen dioxide, formaldehyde, and radon. This paper reports residential air-quality measurements conducted by Lawrence Berkeley Laboratory and, specifically, discusses the use of mechanical ventilation systems with air-to-air heat exchangers as a promising means of pollutant control. A particular advantage of this control strategy is that the heat exchanger permits recovery of a large portion of the heat that would normally be lost in a simple exhaust ventilation system, and therefore maintains the energy efficienty of the house. An economic analysis is presented showing that installation of these systems in newly constructed homes is cost-effective in most regions of the

```
        country.

        KEYWORDS:
-----------------------------------------------------------------------
->
   set format lblvent
```

-Change the format

```
-> type skip 5
```

-From the previous search result, type the 6th citation

```
1.      Roseme, G. D., Berk, J. V., Boegel, M. L., Halsey, H. I.,
        Hollowell, C. D., Rosenfeld, A. H., Turiel, I. "Residential
        ventilation with heat recovery: Improving indoor air quality
        and saving energy." LBL-9749: 27 p. (1980).
```

-The ID data element identifies a collection of references.

```
-> browse id
100073
200115
400087
400094
400101
500004
500012
500019
->
```

-100000 series Chemistry group
-200000 series Radon group
-300000 series LBL reports
-400000 series Hospital group
-500000 series Windows group

```
   find id pre 100
-RESULT: 449 CITATION(S)
->
```

-Locate Chemistry group refs

```
   sequence au.corp name so.date
-STACK: 449 CITATION(S)

-> type id title
```

-Order the search result by corporate name, author name and date of publication
-Type the id and title only

```
 ID = 100111;
 TITLE = Selection and evaluation of sorbent resins for the collection of organic compounds.;

 ID = 100039;
 TITLE = Determination of nanogram quantities of carbonyl compounds using twin cell potential sweep voltammetry.;

 ID = 100567;
 TITLE = Fluorometric determination of acrolein and related compounds with m-aminophenol.;

 ID = 100505;
 TITLE = Analysis of aliphatic aldehydes in source effluents and in the atmosphere.;

 ID = 100504;
 TITLE = Determination of formaldehyde in gas mixtures by the chromotropic acid method.;

 ID = 100506;
 TITLE = Source and atmospheric analyses for formaldehyde by chromotropic acid procedures.;

 ID = 100503;
 TITLE = Spectrophotometric analysis of aldehydes in the Los Angeles atmosphere.;

 ID = 100501;
 TITLE = Application of the 3-methyl-2-benzothiazolone hydrazone method for atmospheric analysis of aliphatic aldehydes
.;

 ID = 100533;
 TITLE = Photochemical reactivities of exhausts from 1966 model automobiles equipped to reduce hydrocarbon emissions.;

 ID = 100880;
 TITLE = Indoor-outdoor relationships for airborne particulate of outdoor origin.;

 ID = 100771;
 TITLE = Technical notes: Relationships between outdoor and indoor air pollution.;

 ID = 100773;
 TITLE = "Liberation of formaldehyde from particleboard: Mathematical model.";
```

-Hit the break key to interrup the listing.

```
  find id 100503                                          -find the reference with id
-RESULT: 1 CITATION(S)                                     100503 of the chemistry listi
->

  type                                                    -type at terminal


1.      Altshuller, A. P., McPherson, S. P. "Spectrophotometric
        analysis of aldehydes in the Los Angeles atmosphere." J. Air
        Pollut. Control Assoc. 13, 3: 109-111 (1963).
->

  set input format                                        -change the format
->

  type                                                    -type the reference

 ID                    100503
 TITLE                 Spectrophotometric analysis of aldehydes in the Los Angeles atmosphere.
 DOCUMENT.TYPE         AS
 LOCAL.SYSTEM.NO(1)    organic chemistry

  Struc: AUTHOR

    NAME(1)               Altshuller, A. P.
    NAME(2)               McPherson, S. P.
    AUTH.AFFILIATION(1)   R. A. Taft Sanitary Eng. Center.  Cincinnati  OH.


  Struc: SOURCES

    SOURCE.TITLE          J. Air Pollut. Control Assoc.
    SOURCE.VOLUME         13
    SOURCE.NUMBER         3
    SO.DATE               1963
    SOURCE.PAGE.NO(1)     109-111

 LANGUAGES(1)          ENGLISH
 PUBLICATION.TYPE(1)   JOURNAL ARTICLE
 DATE-ADDED            1980
```

```
find id 200001                                          -Locate radon reference
-RESULT: 1 CITATION(S)                                   200001
-> set input format                                     -change format
-> type                                                 -type

  ID                    200001
  TITLE                 Absolute estimation of radon daughter
                        concentrations in air by alpha-spectrometry.
  DOCUMENT.TYPE         AS
  INTL.SERIAL.NO        0029-554x
  LOCAL.SYSTEM.NO(1)    radon

   Struc: AUTHOR

     NAME(1)                Aprilesi, G.
     NAME(2)                Loria, A.
     NAME(3)                Magnoni, G.
     NAME(4)                Marseguerra, M.
     NAME(5)                Morelli, S.
     NAME(6)                Rivasi, M. R.
     AUTH.AFFILIATION(1)    Instituto di Fisica and Osservatorio
                            Geofisico dell'Universita.  Modena  Italy.


   Struc: SOURCES

     SOURCE.TITLE           Nucl. Instrum. Methods
     SOURCE.VOLUME          148
     SOURCE.NUMBER          1
     SO.DATE                01/01/78
     SOURCE.PAGE.NO(1)      187-194

  REFERENCE.LIST        9
  ABSTRACT              A method for the estimation of the
                        concentrations of radon daughters in air is
                        given.  The method is based on alpha
                        spectrometric counting measurements performed
                        either during or after the dust collection with
                        an electrostatic precipitator.  The relations
                        between measured counts and concentrations in
                        air of the collected nuclides (RaA, RaB and RaC)
                        are obtained assuming a constant collection rate
                        and a linear collection rate and a linear
                        collection rate model.  It turns out that the
                        less sophisticated model gives more satisfactory
                        estimations of the parameters.
  KEYWORDS(1)           alpha spectrometry
  KEYWORDS(2)           electrostatic precipitator
  KEYWORDS(3)           mathematical models
  KEYWORDS(4)           measuring techniques
  KEYWORDS(5)           radon 222 daughter products
  GRAPHICS(1)           diagrams
  GRAPHICS(2)           formulas
  GRAPHICS(3)           graphs
  LANGUAGES(1)          ENGLISH
  PUBLICATION.TYPE(1)   JOURNAL ARTICLE
  DATE-ADDED            1980
->
```

```
find id pre 300
-RESULT: 116 CITATION(S)
-> sequence au.corp name
-STACK: 116 CITATION(S)
```

-Locate the group of LBL repor in EEB

```
-> set format pubvent
-> type skip 115
```

-Change the format
-Type the last citation

1. University of Minnesota. School of Public Health. (Minneapolis, MN)

Hospital ventilation standards and energy conservation: Proceedings of the 1978 International Working Conference. LBL-8257 310 p., 10/31/78.

```
->
  type
```

-Type all the citations from the previous search result

1. Akbari, H., Borgers, T. R.

Free convective laminar flow within the Trombe wall channel. LBL-7802

SOL. ENERGY 22: 165-174, 1979.

ABSTRACT: Free convective laminar heat transfer between the channel surfaces of the Trombe wall has been investigated. Considered in this study were the velocity profiles normal and parallel to the direction of fluid flow, the pressure drop due to flow acceleration at the channel entrance, and the effect of dissimilar but uniform channel surface temperatures for a wide range of flow rates and temperatures. A finite difference procedure was used to solve the governing equations in dimensionless form using air as the fluid. After comparison with available experimental data, results have been reduced, and several correlations developed to enable important performance characteristics to be estimated given the channel thickness, height, and surface temperatures.

---

2. Andersson, L. O., Bernander, K. G., Isfalt, E., Rosenfeld, A. H.

Storage of heat and coolth in hollow-core concrete slabs: Swedish experience, and application to large, American-syle buildings. LBL-8913 22 p., 10/--/79.

ABSTRACT: The Folksam office building in Farsta, near Stockholm, has operated since December 1977 with an energy use for direct space heating of only 60 kWh/square meter (19,000 Btu/square foot), which is only half the Stockholm average for new buildings. To this 60 kWh/square meter must be added the typical electric use of another 60 kWh/square meter for lights, equipment, fans, etc. Even though Stockholm has 3580 deg-day (C), new Swedish buildings are so well insulated that their temperature floats upward during most winter working days. In the Folksam building, this surplus heat from 40 full-occupied hours per week is stored in hollow-core concrete slabs, and then is used to compensate for the heat losses during the remaining 128 unoccupied hours. The energy transport/storage system necessary to keep the indoor temperature comfortable, summer and winter, is called Thermodeck, and is described in detail.

---

3. Anthon, D. W., Fanning, L. Z., Hollowell, C. D., Lin, C.

Air sampling using pneumatic flow controllers. LBL-9403 13 p., 12/--/79.

ABSTRACT: During air sampling, simple flow controllers are often adversely affected by changes in the upstream pressure, which can result from variations in the pressure drop across sampling devices or changes in the atmospheric pressure. Two improved flow controller designs are discussed that overcome this problem. Details of their construction and performance are discussed.

-Hit the break key to interru the listing

4. Battles, D. R., Vesley, D., Banks, R. S.

Hospital laundry standards and energy conservation: A program plan. LBL-9987 46 p., 01/--/80.

```
select who
->
```

-Select the "Who" subfile by name or type ..Menu to select the subfile by number

```
   show indexes
Goal Records:  PERSON
Simple Index:  N, NAME
   Sub-Index:  FIRST.NAME
Simple Index:  INT, INTEREST, INTERESTS
->
```

-List the index names used for searching the Who database

```
   browse name
GROB
NOVOTNY
PIERCE
RICHARDS
SCHOMBURG
SPENGLER
TELI
WOODS
->
```

-Sample listing of the names of individuals in the who database

```
   find name woods
-RESULT: 1 PERSON(S)
-> type
```

-Find the entry in the Who's database for the name woods

-type at terminal

```
   ------------------------------------------------------------------

                  **      Woods, James E., Jr.      **

                          Associate Professor
          Iowa State University.  Department of Architecture and
                        Mechanical Engineering.

   INTERESTS:

              This information was last updated on 10/--/80
   ------------------------------------------------------------------
-> set input format
```

-change the format

```
-> type
```

-type

```
  ID            000019
  NAME          Woods, James E., Jr.
  AS.OF         10/--/80

   Struc: PROFESS.INFO

     PROFESSIONAL
     AFFILIATION        Iowa State University.  Department of Architecture and Mechanical Engineering.
     TITLE              Associate Professor

      Struc: ADDRESS

        CITY            Ames
        STATE           IA
        ZIP             50010
        PHONE(1)        (515) 294-8660
        PHONE(2)        FTS 865-8660


  REF(1)        WWV
  REF(2)        400031
  REF(3)        BUCK
->
```

```
find interest instruments
-RESULT: 5 PERSON(S)
-> sequence name
-STACK: 5 PERSON(S)
->
   define table name interest
-> type
JAN. 20, 1981
        PAGE 1
NAME

Adams, J.

Anderson, Paul

Kulkami, Achut V.

Rosenbaum, David

Ryan, James F.

-> type name interest

 NAME = Adams, J.;
 INTERESTS = organics;
 INTERESTS = instruments;
 INTERESTS = instrumentation;

 NAME = Anderson, Paul;
 INTERESTS = Administration;
 INTERESTS = Management;
 INTERESTS = Building Envelope;
 INTERESTS = Computer Analysis;
 INTERESTS = Energy Conservation;
 INTERESTS = Energy Efficient Buildings;
 INTERESTS = Field Studies;
 INTERESTS = Heat Exchangers;
 INTERESTS = Indoor Air Quality;
 INTERESTS = Infiltration;
 INTERESTS = Instruments;
 INTERESTS = Instrumentation;
 INTERESTS = Mathematical Models;
 INTERESTS = Odors;
 INTERESTS = Standards;
 INTERESTS = Guidlines;
```

-find entires in the Who database with and interest in instruments

-Order by name

-Generate a report of names cross-indexe by interest

```
INTEREST

organics
instruments
instrumentation
Administration
Management
Building Envelope
Computer Analysis
Energy Conservation
Energy Efficient Buildings
Field Studies
Heat Exchangers
Indoor Air Quality
Infiltration
Instruments
Instrumentation
Mathematical Models
Odors
Standards
Guidlines
other (controls active/passive)
organics
instruments
instrumentation
Airborne Microbes
Energy Efficient Buildings
Epidemiology
Field Studies
Heat Exchangers
Indoor Air Quality
Infiltration
Instruments
Instrumentation
Mathematical Models
Organics
Radon
Standards
Guidelines
organics
instruments
instrumentation
```

-From previous search result type the name and interest

-Hit the "break" key to interrupt the listing

```
  for goal where ref buck
+> sequence name
-STACK: 30 PERSON(S)
+> type name id

 ID = 000001;
 NAME = Andersen, Ib;

 ID = 000002;
 NAME = Besant, R.;

 ID = 000003;
 NAME = Blair, Joe;

 ID = 000004;
 NAME = Cable, John;

 ID = 000005;
 NAME = Chatry, Michel;

 ID = 000006;
 NAME = Fanger, P. Ole;

 ID = 110368;
 NAME = Gantz, E. St. Clair;

 ID = 110275;
 NAME = Hammarstrand, K.;

 ID = 000007;
 NAME = Haywood, Fred F.;

 ID = 110302;
 NAME = Jennings, Walter G.;

 ID = 000008;
 NAME = Kaspar, Bill;

 ID = 5001  ;
 NAME = Klammt, Fred J.;

 ID = 902   ;
 NAME = Klammt, Fred J.;

 ID = 000009;
 NAME = Lindvall, Thomas;

 ID = 000010;
 NAME = McNall, Preston E., Jr.;

 ID = 000011;
 NAME = Millhone, John;

 ID = 000012;
 NAME = Moschandreas, Demetrios J., Jr.;

 ID = 110370;
 NAME = Pierson, Raymond H.;

 ID = 110371;
 NAME = Porter, Kenneth;

 ID = 000013;
 NAME = Preston, Elizabeth;

 ID = 000014;
 NAME = Ross, Howard D.;

 ID = 110382;
 NAME = Schawlow, Arthur L.;
```

-It is also possible to search on unindexed information such as the data element "ref" Use for Goal processing

Here's an example of searching the Who database for Buck's mailing list.

```
 ID = 000015;
 NAME = Segal, Dan;

 ID = 000016;
 NAME = Spengler, John D.;

 ID = 000017;
 NAME = Viren, John;

 ID = 110372;
 NAME = Volman, D.H.;

 ID = 000018;
 NAME = Warren, Peter R.;

 ID = 000019;
 NAME = Woods, James E., Jr.;

 ID = 000020;
 NAME = Wrable, Mary Lynn;
-STACK: 29 PERSON(S)
+>
```

```
   find name lindvall
-RESULT: 1 PERSON(S)
+> type
```

-Locate the entry in Who for Lindvall

-type

```
  ID            000009
  NAME          Lindvall, Thomas
  AS.OF         10/--/80

   Struc: PROFESS.INFO

     PROFESSIONAL
     AFFILIATION        Swedish Environment Protection Board.  Department of Environmental Hygiene.

      Struc: ADDRESS

        STREET.ADD      Solnavagen 1
        CITY            Stockholm
        COUNTRY         Sweden
        POSTCODE        S 104 01
        PHONE(1)        (08) 23 6900 EX 260


  REF(1)        100102
  REF(2)        WWV
  REF(3)        BUCK
+>
```

```
clear stack
+> for goal where country sweden
+> stack all
-STACK: 2 PERSON(S)
+> sequence name
-STACK: 2 PERSON(S)
+> type name city country

 NAME = Johansson, Ingegerd;
   CITY = Stockholm;
     COUNTRY = Sweden;

 NAME = Lindvall, Thomas;
   CITY = Stockholm;
     COUNTRY = Sweden;
+>
```

-Locate unindexed information using for goal processing
-Order by name
-type name city and country for search result

```
   clear stack
+> for goal where state ca
+> stack all
-STACK: 10 PERSON(S)
+> sequence name
-STACK: 10 PERSON(S)
+> type name state city

 NAME = Gantz, E. St. Clair;
   CITY = China Lake;
     STATE = CA;

 NAME = Hammarstrand, K.;
   CITY = Palo Alto;
     STATE = CA;

 NAME = Jennings, Walter G.;
   CITY = Davis;
     STATE = CA;

 NAME = Kaspar, Bill;
   CITY = Oakland;
     STATE = CA;

 NAME = Klammt, Fred J.;
   CITY = Pacifica;
     STATE = CA;

 NAME = Klammt, Fred J.;
   CITY = Pacifica;
     STATE = CA;

 NAME = Pierson, Raymond H.;
   CITY = China Lake;
     STATE = CA;

 NAME = Porter, Kenneth;
   CITY = Davis;
     STATE = CA;

 NAME = Schawlow, Arthur L.;
   CITY = Stanford;
     STATE = CA;

 NAME = Volman, D.H.;
   CITY = Davis;
     STATE = CA;
+>
```

-Locate unindexed information using for goal processing
-Order by name
-Type name state and city info.

```
   SELECT BIBL
->
```

-Select the "BIBL" subfile by name or type ..MENU to select the subfile by number

```
   show indexes
Goal Records:  CITATION
Simple Index:  AU.PN, AUTHOR, NAME, 100A
   Sub-Index:  FIRST.NAME
Simple Index:  KEY, KEYS, KEYWORD, KEYWORDS, 650, 690
Simple Index:  A, ID
Simple Index:  CODEN, 030
Simple Index:  F, LANG, LANGUAGES
Simple Index:  AU.AFFIL, AUTH.AFFILIATION, 100X
Simple Index:  AU.CORP, CORPORATE.AUTHOR, 110A
Simple Index:  AU.CORP.SUB, CORP.SUBELEMENT, 110B
Simple Index:  AU.CONF, CONFERENCE.NAME, 111A
Simple Index:  AU.CONF.SUB, CONF.SUBELEMENT, 111E
Simple Index:  AU.CONF.PL, CONFERENCE.PLACE, 111C
Simple Index:  TITLE, 245
Simple Index:  B1, SO.TITLE, SOURCE.TITLE
Simple Index:  AU.CONF.DATE, CONFERENCE.DATE, 111D
Simple Index:  B4, SO.DATE, SOURCE.DATE
Simple Index:  G, TRANS, TRANSLATIONS
Simple Index:  D, GRAPHICS
->
```

-Show the searchable indexes

```
   find title ventilation
-RESULT: 45 CITATION(S)
->
```

-Find citations with the word "ventilation" in the title

```
   and title pollution
-RESULT: 2 CITATION(S)
->
```

-Find citations with "ventilation" and "pollution" in the title

```
   type title name id
```

-Type the title name and id

```
 ID = 100959;
 TITLE = Indoor air pollution levels as a function of changing ventilation rates.;
 NAME = Moschandreas, D. J.;

 ID = 300031;
 TITLE = Design of a mobile laboratory for ventilation studies and indoor air pollution monitoring.;
 NAME = Berk, J. V.;
   NAME = Hollowell, C. D.;
   NAME = Lin, C.;
   NAME = Pepper, J. H.;
->
```

```
   find id 300031
-RESULT: 1 CITATION(S)
```

-Find the citation with id 300031

```
type                                                    -Type the previous search
                                                         result

1.      Berk, J. V., Hollowell, C. D., Lin, C., Pepper, J. H.

        Design of a mobile laboratory for ventilation studies and
        indoor air pollution monitoring. LBL-7817  40 p., 04/--/78.

             ABSTRACT: The Energy Efficient
        Buildings (EEB) Program of the Lawrence
        Berkeley Laboratory (LBL) has designed
        and fabricated a mobile laboratory for
        research and development studies of
        ventilation requirements and energy
        utilization in residential and commercial
        buildings.  This report provides all
        design specifications for this laboratory
        in which functionality, flexibility and
        versatility were stressed.  Included are
        photographs of the actual unit and plans
        for diagrams.

        KEYWORDS:
-----------------------------------------------------------------------------
-> set format pubvent                                   -Change the format
-> type                                                 -Type

1.      Berk, J. V., Hollowell, C. D., Lin, C., Pepper, J. H.

        Design of a mobile laboratory for ventilation studies and indoor air pollution monitoring.
        LBL-7817  40 p., 04/--/78.

             ABSTRACT: The Energy Efficient Buildings (EEB) Program of the Lawrence Berkeley
        Laboratory (LBL) has designed and fabricated a mobile laboratory for research and
        development studies of ventilation requirements and energy utilization in residential and
        commercial buildings.  This report provides all design specifications for this laboratory
        in which functionality, flexibility and versatility were stressed.  Included are
        photographs of the actual unit and plans for diagrams.
-----------------------------------------------------------------------------------------------------
-> set format lblvent                                   -Change the format
-> type                                                 -Type

1.      Berk, J. V., Hollowell, C. D., Lin, C., Pepper, J. H. "Design
        of a mobile laboratory for ventilation studies and indoor air
        pollution monitoring." LBL-7817: 40 p. (1978).
->
```

```
..menu
*****************************************************
*                                                   *
*  The following system resources are available..... *
*                                                   *
*    1. --BIBLIOGRAPHIC-- DATABASE                  *
*    2. --WHO'S WHO--     DATABASE                  *
*    3. --THESAURUS--     DATABASE                  *
*    4. NEWS                                        *
*    5. SYSTEM COMMANDS                             *
*    6. SUGGESTIONS FROM USERS                      *
*                                                   *
*****************************************************
* Please select a resource by number, or enter a system command...
: 3
*
*  Do you wish to see instructions on searching the THESAURUS database?
:  (YES/NO) YES
*
* Thesaurus searching is done by issuing a FIND TERM {name}
* command, where {name} is a TERM in the thesaurus.  That TERM,
* plus all of its narrower TERMs, related TERMs, etc., are then
* displayed.
*
* You may get some idea of which TERMs are in the thesaurus by
* issuing one of the following commands:
*     BROWSE TERM
*     BROWSE FIRST TERM
* The first command samples the TERMs in the immediate vicinity
* of {name}; the second command goes alphabetically through all
* of the TERMs in the thesaurus.
*
*   You may now begin searching.  When you are finished, type
*   ..MENU to return to the main MENU.
*
->
```

-Select the subfile by number

-Select the thesaurus subfile "Thes"

-Type "yes" for instructions

```
browse first term
ABSORPTION SPECTROSCOPY
ACETAL
ACETALDEHYDE
ACETIC ALDEHYDE
ACETONE
ACETOPHENONE
ACETYLACETONE
ACID RAIN
ACIDS (ORGANIC)
ACRALDEHYDE
-MORE? YES
ACROLEIN
ACTIVATED CARBON
ADAMANTANE
ADSORBENTS
ADSORPTION
ADSORPTION SPECTROSCOPY
AERIAL MONITORING
AEROSOL GENERATORS
AEROSOL MONITORING
AEROSOL WASTES
-MORE? no
->
```

-Browse the "term" index

```
   find term pollution
-RESULT: 1 MAIN.TERM(S)
-> type
```

-Find information for the term pollution

```
   POLLUTION
      nt   AIR POLLUTION
      nt   WATER POLLUTION
-> find term air pollution
-RESULT: 1 MAIN.TERM(S)
-> type
```

-Associated with the main term pollution are the terms air pollution and water pollutio

-Find information associated with term air pollution

```
   AIR POLLUTION
    uf  THERMAL POLLUTION (AIR)
      bt   POLLUTION
      nt   INDOOR AIR POLLUTION
      rt   ACID RAIN
      rt   AFTERBURNERS
      rt   AIR POLLUTION ABATEMENT
      rt   AIR POLLUTION CONTROL
      rt   AIR QUALITY
      rt   CATALYTIC CONVERTERS
      rt   CLEAN AIR ACT
      rt   ENVIRONMENTAL EFFECTS
      rt   EXHAUST RECIRCULATION SYSTEMS
      rt   FEDERAL TEST PROCEDURE
      rt   FLY ASH
      rt   INDUSTRIAL POLLUTION
      rt   JET ENGINE EMISSIONS
      rt   PARTICLE RESUSPENSION
      rt   PLUMES
      rt   POINT POLLUTANT SOURCES
      rt   SCRUBBERS
      rt   SMOG
      rt   SOOT
      rt   STATIONARY POLLUTANT SOURCES
      rt   VEHICLE EMISSIONS
->
```

**Note The thesaurus database lists the terms available for searching the keywords of the bibliographic database. Not all of the terms listed in the thesaurus database are used in the bibliographic database since keywords have been assigned to a small number of bibliographic references at this time.

```
..menu
*****************************************************
*                                                   *
*  The following system resources are available...... *
*                                                   *
*    1. --BIBLIOGRAPHIC-- DATABASE                  *
*    2. --WHO'S WHO--     DATABASE                  *
*    3. --THESAURUS--     DATABASE                  *
*    4. NEWS                                        *
*    5. SYSTEM COMMANDS                             *
*    6. SUGGESTIONS FROM USERS                      *
*                                                   *
*****************************************************
* Please select a resource by number, or enter a system command...
: 6
*
*  The LBL VENTILATION DATABASE GROUP welcomes any suggestions
*  for changing and/or improving the performance of the
*  Ventilation Database System.
*
*  Please enter your suggestions below, terminating each line with
*  the RETURN/SEND key.  When you are finished, hit the BREAK/ATTN
*  key once.
*                                Thanks.....
    1.   > YOUR NAME
    2.   > SUGGESTIONS
    3.   > COMMENTS
    4.   > ***
-3 LINES SENT
*****************************************************
*                                                   *
*  The following system resources are available...... *
*                                                   *
*    1. --BIBLIOGRAPHIC-- DATABASE                  *
*    2. --WHO'S WHO--     DATABASE                  *
*    3. --THESAURUS--     DATABASE                  *
*    4. NEWS                                        *
*    5. SYSTEM COMMANDS                             *
*    6. SUGGESTIONS FROM USERS                      *
*                                                   *
*****************************************************
* Please select a resource by number, or enter a system command...
: ..EXIT
*
*  ******** END OF SESSION *********
*              -- 'bye --
-> LOGOFF
3 CHANGES, CLEAR? YES
0.898 SECONDS ORVYL CPU TIME
125 ORVYL FILE I/O'S
520 PAGE-MINUTES VIRTUAL MEMORY USE
WYLBUR: 0.05 CPU SECONDS, 4 DISK I/O'S
ELAPSED TIME = 00:05:50  TERMINAL I/O'S = 207

END OF SESSION
```

-Type ..menu to select the subfile

-Select Suggestion module to communicate interactively with the database staff.

-Type ..exit to log off if using the "menu program"

-Type logoff to log off system

This report was done with support from the Department of Energy. Any conclusions or opinions expressed in this report represent solely those of the author(s) and not necessarily those of The Regents of the University of California, the Lawrence Berkeley Laboratory or the Department of Energy.

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