

Exercises to *Information management*:

A consolidation of operations, analysis and strategy



by Michael Middleton.

Exercises to Information management: A consolidation of operations, analysis and strategy, by Michael Middleton.

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Unlike many previous work on information management, Michael Middleton's *Information management: A consolidation of operations, analysis and strategy* draws on a variety of disciplinary perspectives and incorporates different levels of exploration. It consolidates material into a coherent framework of principles at operational, analytical and strategic levels, that provides both an introduction to the field in general for students, and a handbook for professionals. Michael Middleton teaches information management in the School of Information Systems at Queensland University of Technology; his research interests in QUT's Information Systems Management Research Group are in information use analysis.

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2 Exercises

Exercise 2.1

- i. Consult the employment sections of 2 recent issues of newspapers that carry substantial employment advertising.
- ii. Itemise those positions that appear to be for information professionals.
- iii. Compare the sections that they appear in, and the names of the positions.

Exercise 2.2

Consult Internet Web pages of three of the organisations appearing in **Figure 2.4**. Compare the information provided by each association concerning:

- i. Membership.
- ii. Curriculum.
- iii. Publications.
- iv. Professional responsibility (compare what you find with the examples given in Chapter 2.2).

Exercise 2.3

- i. Refer to the Internet Web page of one of your own national information professional associations.
- ii. Compare the curriculum information that is provided with the curriculum for IIS that is described in **Chapter 2.3**. How much overlap is there? What other areas are suggested?
- iii. What information is provided about professional responsibility along the lines of that appearing in **Chapter 2.2**?

Exercise 2.4

As a small group exercise, discuss the 'formation' of a professional association. Try to arrive at:

- i. A list of professional information activities that the members of this association will be employed in.
- ii. A list of areas of public interest that should concern the association – you can base this upon material that appears in lists of professional responsibilities, areas for lobbying, professional expertise etc.

3 Exercises

Exercise 3.1

Interpret each of the following in terms of the communication model in Figure 3.4, and see if you can provide an interpretation for each of: data, information and knowledge, feedback, noise feedback and redundancy:

- i. A person who is listening to a radio broadcast that is being played from an audiotape.
- ii. A person using a microfiche reader to view a microform.
- iii. A person making notes from an encyclopaedia on compact disk.

Exercise 3.2

Examine a journal or newspaper article of about 1,000 words in length.

- i. Tabulate the word frequency distribution for words used in the text
- ii. Determine whether the frequency distribution approximately fits the formula derived from Zipf in **Chapter 3.5.2**.
- iii. Discuss why there may be deviations from the formula.

Exercise 3.3

Devise and carry out an experiment to test Bradford's law. You will need to:

- i. Select an area of endeavour in which a range of journals is published.
- ii. Identify the key journals in the field under consideration.
- iii. Obtain frequency counts of the amount of publication in those periodicals. (This may be determined by computer searches of databases that index or cite the periodicals).
- iv. See if the frequencies approximate the Bradford distribution.
- v. Discuss reasons for deviation from the distribution.

Exercise 3.4

A search conducted on a database of 500,000 records produces a result of 120 records. Of these 80 records are deemed to be relevant. Subsequent sampling determines that there are 30 records not retrieved that would also have been considered relevant.

An alternative search on the same database on the same subject matter by a different searcher produces a result of 80 records of which 60 are deemed to be relevant.

- i. Determine the values of the different ratios that are derived from the contingency table in Figure 3.12.
- ii. Based upon the ratios, do you think one search is better than the other? Why?
- iii. Do you think it is reasonable to talk in terms of retrieved records being 'relevant' or 'not relevant'?

4 Exercises

Exercise 4.1

Identify an enterprise that is of interest to you.

- i. For each of the external contingency types listed in **Figure 4.1**, try to identify one contingency that will affect organisational communication. If you took for example, a packaging company, you might say that the external contingency heading 4 (Social/Political/Cultural) could include a society concern about disposal of unrecyclable packaging, which would be reflected in internal organisational communication.
- ii. From an overview of the organisation, obtained for example from its annual report, derive an organisation's condition according to **Figure 4.2**, and assign a category of intelligence need.

Exercise 4.2

For the enterprise that you have identified in **Exercise 4.1**:

- i. Select an issue that has significant information requirements for decision making
- ii. Select 3 information outputs from the list in **Chapter 4.2.1**
- iii. For each output, provide some appropriate examples for the enterprise. For example, if the enterprise were an agricultural company, the issue could be consideration of whether to introduce a new crop. One of the items on the list concerns identification of stakeholders. This might point to a production division in the organisation, a plant research division, the population of a proposed cropping area, stockholders in the company, a chemical fertiliser company, political representatives in the area, and so on.

Exercise 4.3

For the enterprise that you have identified in **Exercise 4.1**, and with reference to the systems for business intelligence and environmental scanning described in **4.4.1**:

- i. Review possible alternative approaches (such as those referenced in readings at the end of the chapter), and suggest an appropriate mode of scanning for the enterprise in question.
- ii. For the same enterprise, suggest an appropriate level of formality of information collection based upon the levels suggested in **Chapter 4.4.1**.

Exercise 4.4

For the enterprise that you are examining, identify and describe the content of relevant documents of the type mentioned in **Chapter 4.5.2** that are examples of:

- i. A directory of people in the industry.
- ii. A relevant trade publication.
- iii. A computer-based service that may be used for SDI.

Exercise 4.5

Select one source and one reference database of the type described in **Chapter 4.5.3**, available either online or on compact disk:

- i. Identify whether a default index is available for searching, and if it is, identify the fields that comprise the default index.
- ii. Identify those fields that may only be searched using phrases (for these fields, keywords may not be searched individually)
- iii. Explain the display formats that are available for retrieved records.



5 Exercises

Exercise 5.1

Collect 5 different business forms that are used by organisations to gather information from their customers or clients. Try to include at least one from each of the financial services industry (for example a loan application or an insurance claim), from a public authority (for example a license application) and from an educational institution (perhaps an enrolment form).

- i. With reference to **Chapter 5.2.1**, use the subheadings under **Forms design and constitution** to tabulate the extent to which you think the forms have met the criteria listed under these subheadings.
- ii. Include in your analysis, the extent to which you think that the forms have been designed for computer processing.
- iii. Comment upon any parts of a form that seem ambiguous, or difficult to complete.

Exercise 5.2

Refer to 2 different information collection pages on the Internet. You may be able to find some by getting a search engine to look for 'interactive application form'. An example is at <http://www.exim.gov/li-app/liappl.html>.

If you use the advanced search features on a search engine like Google you can use it to eliminate some .pdf pages (which won't be interactive), or perhaps confine your search to a domain of interest such as .gov or .com.

You do not have to complete the interactive forms. Consider the ways in which they are trying to obtain information.

- i. See if they use any of the following components: 'radio' buttons, sliding scales, multiple choice answers, text input fields, user assistance.
- ii. With reference to **Chapter 5.2.2**, tabulate the extent to which you think the forms have met the criteria listed under the subheadings there.

Exercise 5.3

For each of the following documents, describe a logical structure of the type shown in **Figure 5.15**:

- i. A postcard that has an image on one side and text on the other.
- ii. A book of short stories.
- iii. The annual report of a company.
- iv. A University home page on the Web.

Exercise 5.4

Identify two electronic journals that are being published on the Web. You may wish to use journals of one of the professional societies mentioned in **Chapter 2.2.1**. Make sure that one of the journals also appears in print form. You can also select from a list such as *Electronic Journal Miner* at <http://ejournal.coalliance.org/>.

- i. Compare provision that the journals make for archiving earlier editions.
- ii. Compare the provision made by electronic and print forms for submission and review of contributions.
- iii. Compare the expressions of editorial policy.
- iv. Identify any databases that provide secondary surrogate information (in other words abstracts or indexes for the journals). The periodicals may supply this identifying information themselves. However you may have to turn to other sources such as *Ulrich's Periodicals Directory* at <http://www.ulrichsweb.com/ulrichsweb/> which for particular periodicals lists those databases in which they are indexed.

Exercise 5.5

Identify two CDRoms that include published multimedia information. (A guide such as one of the ones edited by Armstrong that are mentioned in **Chapter 4.7** may be of assistance). Make sure that one of the CDRoms has a print equivalent.

- i. Compare the logical structure of the digital and print forms.
- ii. Compare the indexes, contents lists and other aspects of the metainformation.
- iii. Which aspects, if any, of the digital form of the document do you think use a presentation technique that is fundamentally different from the print form?

Exercise 5.6

Use the Internet browser that is available to you, and look at a model page provided from the Web. For example you might use a *template* file that is available from the *Netscape* site at <http://wp.netscape.com/browsers/templates/>.

- i. Compare the normal page appearance with the HTML definition of the page using the *view source* option in the browser.
- ii. Download a copy of the sample page to disk and modify it using the available editing software to produce a personalised version of the page and save it to your own computer.
- iii. Test the appearance of the page by using the browsing software to point at the page on your computer.

6 Exercises

Exercise 6.1

Refer to the catalogue of standards available from the International Standards Organization. It is online at <http://www.iso.ch/iso/en/ISOOnline.frontpage>.

- i. Identify the number of different coded character sets that have been standardised by ISO.
- ii. Use either ISO 646 (**Figure 6.6**) or ISO 10646 (**Figure 6.7**) to see which of the keys on your keyboard has been assigned within the code set.

Exercise 6.2

Connect to your computer service provider, and explore the information transfer options available:

Email: does it provide for:

- i. Creation and renaming of mail folders?
 - ii. Maintenance of an address list for individuals?
 - iii. Maintenance of mailing lists?
 - iv. Ability to send and read mail with files in different formats attached? (You can test this by creating and saving a test file with a word processor or a programming language external to the mailing facility, then mailing the file to yourself, detaching it and then viewing it).
- Newsreader: does it permit the following:
- i. Subscription to nominated newsgroups?
 - ii. Searching for newsgroup names or part names?
 - iii. Searching for text within individual messages?
 - iv. Capturing of news items for transfer via other software such as email?

Exercise 6.3

Consult the EDIFACT standard (International Standards Organization, 1988-1999), which is referred to in **Chapter 6.4.1**.

- i. Identify the levels of information used to form an exchange.
- ii. Make a table of service segments and identify the purpose of each.

Exercise 6.4

Consult the ISO 2709 exchange format (International Standards Organization, 1996a) that is referred to in **Chapter 6.5**. Assume that the information that is being carried in the format is descriptive information about a book that you are presently reading

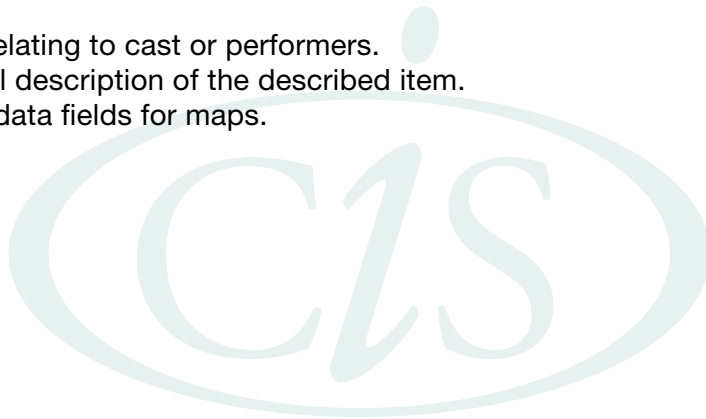
- i. For which fields do you consider that tags would need to be supplied within the directory?
- ii. What would be the form of the directory entry for the title of the book?
- iii. What do you think would be the content of the variable length part of the data record for the author and title? (In reality the form of these contents is subject to cataloguing rules as we shall see in **Chapter 7**, but concern yourself only with the contents here).

Exercise 6.5

Consult a national MARC format of the type referred to in **Chapter 6.5.1**. Compare it with either the USMARC format (*MARC 21* is at <http://www.loc.gov/marc/marc.html>) or UNIMARC (*UNIMARC Manual* is at <http://www.ifla.org/VI/3/p1996-1/sec-uni.htm>).

Compare the tags used and the subfield codes and indicators within these fields for:

- i. Titles.
- ii. Notes relating to cast or performers.
- iii. Physical description of the described item.
- iv. Coded data fields for maps.



7 Exercises

Exercise 7.1

You are required to provide a description so that a database may be defined for one of:

- i. The characteristics of the personnel in an organization.
- ii. The electronic data interchange relating to the supply of ingredients and packaging for hamburgers.
- iii. A library of videotapes.

In each case name the data elements that you consider to be appropriate and describe any conditions that should be applied to the information that is to be stored for each named data element.

Exercise 7.2

You are required to define a format for the transmission from one agency to another of information about compact disks and the recordings that are carried on them.

- i. What are the appropriate data elements for analytical, monographic and serial levels of description?
- ii. If you used the UNIMARC format (*UNIMARC Manual* at <http://www.ifla.org/VI/3/p1996-1/sec-uni.htm>) for carrying out the data element definitions, what role would the 'linking fields' play?

Exercise 7.3

For the format that you defined in **Exercise 7.2**, model the structure for inclusion in a relational database.

Exercise 7.4

In **Exercise 5.3** you described a logical structure for:

- i. A postcard that has an image on one side and text on the other.
- ii. A book of short stories.
- iii. The annual report of a company.
- iv. A University home page on the Web.

If you had to produce a DTD for one of these, what keywords, groups and connectors would you declare?

Exercise 7.5

In **Chapter 7.6** characteristics of a number of different software packages were briefly outlined.

- i. Refer to 3 different categories of package with which you have some familiarity.
- ii. Make a tabulation of the organising characteristics that are provided by the packages so that you are able to compare their respective abilities to organise information.

8 Exercises

Exercise 8.1

The site http://www.oreilynet.com/pub/a/network/2002/10/28/data_dictionary.html provides a description of ORACLE's data dictionary. See if you can determine from this article by Jonathan Gennick:

- i. How does Codd's 4th rule apply to a dictionary for a relational database?
- ii. What does self-documenting mean?
- iii. What features are available for viewing with prefix 'USER'?

Exercise 8.2

Many enterprises provide copies of data dictionaries or information repositories online. In **Chapter 8.1** under **Core constituents**, reference was made to *data entity types* and *system entity types*.

Use a search engine to find two dictionaries or repositories, and see if you can identify examples of these *types* defined within. You should at a minimum be able to identify 'elements' within *data entity types*, and see the extent to which they are defined. If you have difficulty finding a dictionary, you may be able to refer to one of:

- i. SUS at <http://www.fldcu.org/irm/DataDict/>
- ii. AMICO at <http://www.amico.org/AMICOLibrary/dataDictionary.html>
- iii. National Health at <http://www.aihw.gov.au/publications/hwi/nhdd10/>

Exercise 8.3

At <http://www.getty.edu/research/tools/vocabulary/> The Getty Research Institute site makes reference to *The Union List of Artist Names (ULAN)* and *The Getty Thesaurus of Geographic Names (TGN)*. Each of these is an authority file. Search each so that you can retrieve a full record and display its contents in order to view the entry and its authority.

- i. Michelangelo (which is the one?)
- ii. Jackson Pollock (why twice?)
- iii. Albert Namatjira
- iv. Niki de Saint-Phalle (you might like to check out her website too!)
- v. Timbuktu (Why twice?)
- vi. Wagga (Why twice?)

Exercise 8.4

Many libraries maintain authority files to standardise the form that entries take within their catalogues. These are often based upon the authority files that are maintained by national agencies. For example the U.S. Library of Congress uses authority files to maintain data of the type shown in **Figure 8.6**. There are sites other than the library catalogues where you may search these files, an example being Sirsi

Consult Sirsi's LC file at <http://lcmarc.dra.com/LCAUTH>, and try the following:

- i. Author search for *Shakespeare, William* (if you click the 'about' button, you will see how all the alternative forms are referred to this one). Other entries following Shakespeare comprise his name followed by a title. These are additional standard headings established by libraries because of the frequency of such material.
- ii. Author search for *Waugh, Steve* (if you put it in natural order, i.e. Steve Waugh, you won't find anything)
- iii. Author search for *Bin Laden*
- iv. Author search for *CSIRO*
- v. Title search for *Imagine*
- vi. Subject search under *Indie*
- vii. Now think of something yourself



9 Exercises

Exercise 9.1

The objective is to compare the variation in assigned indexing, so you need to be able to compare your work with others. If possible, form a group (personal or electronic), and:

- i. Select any two items from:
 - Journal articles in the field of information management;
 - Photographs in an illustrated encyclopaedia on machines;
 - Files that are available to you at a place of employment.
- ii. Index each of the items separately, and without reference to a dictionary or a thesaurus. Follow the principle of specificity described in **Chapter 9.1.1**.
- iii. Compare the word lists that each of you derive as follows:
 - What terms are there in common?
 - What degree of specificity has been adopted?
 - To what extent is there pre-coordination?
- iv. Can you agree as a group on the set of terms that best describes each document?

Exercise 9.2

The objective here is to compare the way different abstracting and indexing services index the same document. Therefore you should select any document that you want from a periodical (not too recent, too allow time for it to have been reported in a service), then find the same document in another service.

- i. Select an article from a periodical that is likely to be indexed in multiple databases.
- ii. Establish which databases or abstracting and indexing services index the periodical. You may be able to do this from the Web via the journal's home page, via the publisher's page or you may have to consult hard copy. If you have difficulty with the journal that you are interested in, then either of the following journals provides information via its home page:
 - *Journal of Educational Psychology* at <http://www.apa.org/journals/edu.html>
 - *Journal of the American Society for Information Science and Technology* at <http://www.asis.org/Publications/JASIS/jasis.html>
- iii. Retrieve the records that describe the article and compare the indexing.
 - How many keywords do the records have in common?
 - How do they differ?
 - What are the fields that are used to describe the record?
 - Does the content of any of the other fields other than the index term field differ between records?

Exercise 9.3

Use the QBIC experimental system from <http://www.qbic.almaden.ibm.com/>. Try one of the online demonstrations to see if you are able to conduct a successful search by colour or by shape.

Exercise 9.4

For one of the books mentioned in the further readings at **Chapter 9.4**, use the principles espoused in **Chapter 9.3** to produce an indicative abstract, assuming that your audience is information professionals who use an abstracting and information service such as *Information Science Abstracts*, *ERIC*, *LISA* or *INSPEC*.

- i. After you have written your own abstract, see if you can find if any two of the services mentioned (or similar ones) have abstracted it – compare your work.
- ii. What do you think is necessary to convert your abstract into an evaluative one?
- iii. See if you can find a reference to a review of the book (as opposed to a reference to the book itself)? The review should have an evaluative component.
- iv. See if you can find and abstract in one of these services for the Baxter and Anderson reference that is mentioned in **Chapter 9.4**. Do you think it is indicative or informative?



10 Exercises

Exercise 10.1

Consider any of the following:

- A food supermarket
 - A telephone directory
 - A videotape rental store
 - A car repair manual
 - A cookbook
 - An atlas
- i. How would you organise each so that you could use it yourself?
 - ii. How would you organise it so that 'everyone' could use it?

Exercise 10.2

Consult two of the major classification schemes that are used in libraries:

- *Dewey Decimal Classification (DDC)* has an outline on the Web at <http://www.oclc.org/research/researchworks/ddc/terms.htm> but to do the exercise you need to consult the full version which your library may provide subscription access to as *WebDewey* or in print form.

- *Library of Congress Classification (LC)* has an outline on the Web at <http://lcweb.loc.gov/catdir/cpsolcco/lcco.html> but to do the exercise you need to consult the full version which your library may provide subscription access to as *Classification Web* or in print form.

Compare the notation used and the classification assigned to the following concepts:

- i. Bulk cargo carrier ships.
- ii. Relations of socioeconomic groups with government.
- iii. Education for linguistics.
- iv. Manufacture of electron microscopes in the USA.
- v. Humorous illustrations of the concept of free will.

Exercise 10.3

Consult the resource site http://sky.fit.qut.edu.au/~middletm/cont_voc.html for *Controlled Vocabularies*, and link to the **Classification schemes online** area.

- i. Compare two of the schemes that are online, and see if the online versions embody any of the features that are described in **Chapter 10.1.3**, such as:
 - Notation
 - Depth of enumeration (class detail)
 - Use of subdivisions
 - Any attempt to provide a relative index associated with tables
 - The principle of synthesis

Exercise 10.4

Consult the resource site http://sky.fit.qut.edu.au/~middletm/cont_voc.html for *Controlled Vocabularies*, and link to the **Thesaurus online sites** area.

- i. Use a medical thesaurus and an education thesaurus to compare the entries for 'medical education'
 - ii. Use an information technology thesaurus and an education thesaurus to compare the entries for 'information management'
 - iii. Use an art or architecture thesaurus and an engineering thesaurus to compare the entries for 'modular construction of prefabricated buildings'.
 - iv. Use a psychology thesaurus and a nursing thesaurus to compare the entries for 'drug therapy of schizophrenia'
- For each case:
- Are the descriptors the same?
 - Is the syndetic structure the same?
 - Is the generic structure the same?
 - Are scope notes provided?
 - To what extent is post-coordination of terms necessary when searching an associated database in order to effect retrieval?

11 Exercises

Exercise 11.1

The object is to explore the ability of search engines to filter searches to relatively useful lists.

- i. Take a common word like 'computer' and do a simple search to compare the hits you get from the same search on three different search engines of your choice.
- ii. Explore the search functionality to see if you can use a masking symbol to search for any words with 'computer-' as a stem.
- iii. See if the search engine has a more sophisticated search facility that enables you to limit your results by:
 - Year
 - Domain
 - Image only
 - 'Safe' images.

Exercise 11.2

Refer to **Figure 11.13**.

- i. Take as an example one of the search engines listed, and verify whether the features listed remain available or have been enhanced.
- ii. Compare these features with one other search engine known to you that is not listed. If you can't think of one, you can get examples of other engines at <http://searchengineshowdown.com>.

Exercise 11.3

Refer to the four information retrieval features characterised in **Chapter 11.2.3**. The objective is to evaluate some information retrieval software (other than search engine software) that you have available to you. In particular, it may be:

- An online information retrieval system to which your institution provides access via the Web
 - A CDROM database available on a networked or stand-alone basis at your institution.
 - A personal database that incorporates retrieval software – it may even be an encyclopaedia.
- i. Create a features table based upon operational, search formulation, and output control, as well as user assistance.
 - ii. For search formulation, try to identify whether each of the itemised capabilities is available
 - iii. Identify searchable indexes in the manner shown for Dialog Web in **Figure 11.5**.

Exercise 11.4

Try this search on the Medline database. You can use it on a local network if you have access, or you may use it via *PubMed* freely available on the Web at <http://www.ncbi.nlm.nih.gov/pubmed/>.

The requirement is for references to 'tests on the blood of children in the Pacific Region who have been exposed to malaria'. Take this search in a stepwise manner as follows:

- i. Develop your search strategy by analysing the concepts and their relationships.
- ii. Use the *Mesh Browser* facility to look up each of your concepts and see what terms may be available that correspond.
- iii. Switch on the *Preview/Index* facility, and enter your search one concept at a time so that each concept is stored in a set.
- iv. Do the search limited to 'MeSH terms' only, and then try it all over again on 'all fields'.
- v. When you display results, switch on citation display so that you can see the descriptors that have been used.
- vi. Compare the recall of the two approaches.



12 Exercises

Exercise 12.1

Examine an example of each of the following report presentations:

- The stock exchange listing from your daily newspaper
- A weekly TV guide
- Your bank statement (online or in print)
 - i. Of the 13 recommendations listed in **Chapter 12.1**, how many do you think are applicable to the table?
 - ii. How well does presentation accomplish those that are applicable?

Exercise 12.2

Many databases provide print equivalents that are produced as serial bibliographies. The form of the indexes as indicate in **Chapter 12.3** varies according to the requirements of the bibliography.

- i. Make a comparison between the printed indexes of the following databases: *Dissertation Abstracts*, *Biological Abstracts*, *Information Science Abstracts*, and *Social Sciences Citation Index*. If you do not have access to these you may be able to find similar alternatives in your library collection.
- ii. Choose a word like 'component' or 'system' that is likely to appear in each of them, and compare the number of entries for the same month or year (depending upon frequency of print volumes).
- iii. If you can identify a document that is indexed by more than one of them, track down some of the other words from the same title to verify that the permutation has indeed taken place.
- iv. Identify any stopwords, or term standardisation, or term supplementation.

Exercise 12.3

Refer to a print version of your local telephone directory.

Determine what decisions have been made with respect to the following filing principles:

- i. Leading articles – what decisions have been made about filing the likes of 'A', 'The' and 'La'?
- ii. Numerals – are they filed as if spelt out, or numerically before or after the alphabet?
- iii. Punctuation – are periods and hyphens given filing value, or treated as if they are blanks, or ignored completely?

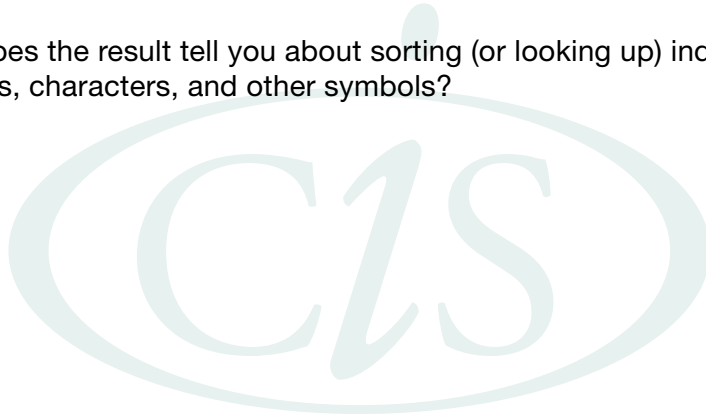
Exercise 12.4

Examine the sequencing facility like that shown in **Figure 12.11** for some wordprocessing software to which you have access.

- i. Create this table

<i>Molecules</i>
<i>Atoms</i>
<i>A B C</i>
<i>?</i>
<i>+</i>
<i>7</i>
<i>55</i>
<i>/</i>
<i>Nineteen Eighty Four</i>
<i>ABBA</i>

- ii. Sort it
iii. What does the result tell you about sorting (or looking up) indexes containing mixtures of numbers, characters, and other symbols?



13 Exercises

Exercise 13.1

Assume that you had to design an interface that that introduced people to the kitchen of your home, and how to use it. For each of the design elements listed in **Chapter 13.2.1**, suggest an application in relation to your model.

Exercise 13.2

Assume that you had to produce buttons that provided an iconic representation on a page of the following concepts:

- Home
- Results
- Enter
- Superiority

Go to a Web Clip art site such as that of the *Mining Company* at <http://webclipart.miningco.com/> or a site mentioned at *Clipart Review* <http://www.webplaces.com/html/clipart.htm>.

- i. See if you can identify a button or an icon that corresponds to each concept.
- ii. How does the clipart site assist your approach to looking for concepts?
- iii. Show a small group of people each of you icons, and ask them to see what they think you are trying to convey with each. How much diversity of opinion is there?

Exercise 13.1

The objective is to see to what extent you think design principles may be applied to interactive Websites.

- i. Refer to the list of design principles in **Chapter 13.2.2**.
- ii. Choose two Websites that have similar purpose, for example they may be two banking sites, two commercial sites that permit purchasing of goods such as books, greeting cards or computer components.
- iii. Compare the two sites in terms of the design principles.
- iv. Are there other principles that you think are necessary to explicate in separate categories?

Exercise 13.1

The objective is to see to what extent information architecture corresponds with design principles from the previous exercise.

- i. Refer to arranging hypertext sties at **Chapter 13.3.2**.
- ii. With reference to the two sites that you have considered in the previous exercise compare the sites in terms of information architecture.
- iii. Do you think that the architecture elements correspond with design principles?

14 Exercises

Exercise 14.1

The objective is to compare compression capabilities of software.

- i. Test out the effects of compressing data with different software on your computer. If you have software that is able to *zip* files, take a text and an image file in different formats, and compare the compression ratio attained by zipping them. Which formats achieve the greatest compression?
- ii. Refer to the tables at Gilchrist's *Compression archive comparison* Website <http://compression.ca/index.html> to see how the software you have used compares with other software.
- iii. If you have graphics software, try reading in an image then saving it in different output formats, again to compare the compression.

Exercise 14.2

Examine the *PADI* site www.nla.gov.au/padi/ that is referenced in the readings at **Chapter 14.4**. Go to the section dealing with 'Policies, strategies and guidelines' Take any two of the sources listed and compare the suggestions made about retaining quality in digitised images. Are they saying essentially the same thing?

Exercise 14.3

The objective is to see if you can identify appraisal criteria in a retention schedule.

- i. Locate a retention schedule on the Web. You should be able to find a number by entering *retention schedule* in a search engine. You may find the one that is shown in **Figure 14.4**, or an alternative.
- ii. Use the categories that are itemised in **Figure 14.3** to see if they have been applied in the schedule.
- iii. Is there a retention period that seems to correspond consistently to a particular record category?

Exercise 14.4

The objective is to see to what extent different information resources have been specifically addressed in disaster recovery or business continuity planning.

- i. Refer to a disaster planning document in print form or from the Web. (If you use the Web to locate a document, you should use an advanced search facility and focus your search by combining phrases such as *disaster planning*, *business continuity*, and *information resources*).
- ii. Browse the document to see if the authors have tried to pay attention to specific resources along the lines mentioned in **Figure 14.1**.
- iii. Refer to the *InfoSysSec* portal and link to the *disaster recovery planning* area at <http://www.infosyssec.com/infosyssec/buscon1.htm>. From here locate an example plan or a plan template, and see if it is configured to address information resources specifically by type.

15 Exercises

Exercise 15.1

Examine the schematic approaches to modelling information behaviour that are produced by Allen (1996) and Wilson (2000). Wilson's paper is on the Web at <http://informationr.net/ir/5-3/paper76.html>.

- i. To what extent can they be used to provide a theoretical context for the requirements analysis process that is a precursor for systems design?
- ii. Are the models are trying to depict information seeking in a context of identifying useful information resources, or producing an information system that provides an ongoing information resource?

Exercise 15.2

Refer to **Chapter 15.2** which gives examples of different user environments.

- i. Identify a similar information user group that is of interest to you;
- ii. Examine the literature to identify papers where information seeking behaviour or information use needs of such a group have been investigated;
- iii. Which of the methodologies employed in **Chapter 15.3** has been employed in the investigation?
- iv. Compare what you have found with someone who is also carrying out the exercise;
- v. Are there common features of behaviour that seem to be repeatedly investigated? (e.g. types of resource, communication with fellow professionals, current awareness strategy...).

Exercise 15.3

The objective is to associate critical success factors (csfs) with information sources.

- i. Refer to **Figure 15.3**;
- ii. Take as an example, a company different from the telecommunications company considered in the figure;
- iii. If you need inspiration, refer to Rockart (1979) for a range of examples;
- iv. Identify what would seem to be an appropriate 4-5 csfs for the organisation in question;
- v. Identify the corresponding information needs;
- vi. Identify possible information sources that will satisfy those needs.

Exercise 15.4

The objective is to carry out an information resource assessment for an identified group.

- i. Refer to the checklist in **Chapter 15.3.2**;
- ii. Identify a user group such as those with whom you are working or studying;
- iii. Identify an appropriate methodology from Chapter 15.3.1 for identifying their requirements;
- iv. See if you can match their requirements with an information service or services that may be derived from:
 - A library;
 - Database(s);
 - The Web.



16 Exercises

Exercise 16.1

Chapter 16.1 reviews why it is problematical to put a value on information. For the following examples, which approaches to establishing value do you think are relevant? If you select a particular approach to valuing information, how may it be applied in an organisational context?

- i. A database of organisational publications;
- ii. Marketing surveys;
- iii. Patents held by the enterprise;
- iv. Records of training courses attended by staff.

Exercise 16.2

Select an example of an information service known to you. It may be a database, a call centre, or even a particular document.

- i. Identify those interfaces that you think apply from Figure 16.4;
- ii. Make a qualitative assessment of the value that they add.

Exercise 16.3

The objective is to consider the differences in emphasis between different types of audit.

- i. Refer to **Chapter 16.2.2**;
- ii. Identify specific examples of the intellectual elements in **Figure 16.9** that may be usefully recorded in the workplace;
- iii. How many of the features identified in data and information audit, may be equally applicable to knowledge or communication audits?

Exercise 16.4

The objective is to undertake a preliminary information audit. (A real information audit in an enterprise is likely to take some months and require a great deal of consultation to determine the effectiveness and importance of information resources). It is feasible to do this as a small group, if you are able to identify a cooperating enterprise.

- i. Refer to **Figure 16.8** and to Burk & Horton (1988) for detailed explanation of the figure, and how the index values are assigned;
- ii. Identify information resource entities in the enterprise;
- iii. Identify the enterprise activity(ies) that each supports;
- iv. Assign an 'Importance to Organisation' value for each activity;
- v. Assign an 'Importance to Activity' value for each resource;
- vi. Assign an 'Effectiveness' value for each resource;
- vii. Determine value indexes. How may these be useful for organisational information planning?



17 Exercises

Exercise 17.1

For each of the following cases, produce an entity-relationship model made up of components used in **Chapter 17.3.1**.

What are likely to be the main attributes of each entity that you have identified?

Case i (DVD rental store)

Customers may for a fee borrow DVDs. There are multiple copies of DVDs for which there is high demand. These are billed at a higher rate than others in the store. Customers may borrow many DVDs at once.

The store undertakes at least the following processes:

- Record customer details
 - Lends disks
 - Charges for borrowing
 - Identifies which disks are presently with a customer
 - Identifies whether a customer has borrowed a specific disk
- Case ii (College teaching)

Classes at a college may be taught by one or two teachers, providing that they are qualified. There may be as many as 200 students in a class. A student may undertake several different classes, just as an instructor may teach several classes. Classes may take place in more than one room concurrently and according to a schedule.

Teaching staff record grades on the performance of students in each of multiple exercises that may be assigned to each class.

Exercise 17.2

Refer to the flowchart symbols used in **Figure 17.6** and ISO standards. Make use of these to represent a library stock acquisitions procedure, taking into account the following elements:

- Stock arrives daily from three different suppliers.
- Received items must be checked against orders for completeness.
- Suppliers must be notified if orders are not correctly fulfilled (for various reasons).
- Received stock is batched in lots of 50 by medium (book, DVD, kit ...)
- A registration procedure takes place that matches incoming items with catalogue records.
- Where items have been requested by library patrons, they are notified.
- Other procedural aspects that you consider to be appropriate.

Exercise 17.3

Draw decision tables that represent the following:

- i. A supermarket opens its doors for customers from 8 am until 8 pm except on weekends when it opens from 8 am to 6pm. However during December it opens daily from 8 am to 8 pm. On public holidays it opens from 8 am to 5 pm whenever they take place.
- ii. The fees applied to an information service are as follows:
 - Consultation time \$10 for basic queries.
 - Consultation time \$30 for complex queries.
 - Database searching \$20 for one database.
 - Database searching \$60 for 2-3 databases.
 - Database searching \$100 for 4 or more databases.
 - If no records are found, a reduction of \$30 applies to charges.
 - A fixed fee of \$25 is applied to staff from partner companies.
- iii. Take a piece of legislation that must be applied in your own environment – for example you may take a copyright Act, and look at the particular sections to see how they may be applied. Develop a decision table to correspond with one of the Sections, or part of the regulations. For example, such an Act may contain a section that details provisions relating to fair dealing for different types of work incorporated in the reporting of news. Show how the provisions for fair dealing can be represented for the different works.

Exercise 17.4

Chapter 17.4.7 introduced Soft Systems Methodology which may make use of rich pictures of the type shown in **Figure 17.3**. For the following case, carry out a soft system analysis, and define process(es) for the organization using:

- i. A rich picture of the real world situation described.
- ii. A tabulation that shows one or more root definitions (accompanied by their CATWOE elements).
- iii. One or more conceptual models to show process interrelationships.

The Enterprise

Ricketty Press is a publishing house that produces technical documents (for example mining equipment operational manuals, and livestock breeding schedules) in hardcopy usually under contract from government authorities. Their environmental scanning tells them that this market is expected to diminish dramatically. They intend to diversify and create more material for the business sector, as well as provide popular versions of the documents for the general public.

The enterprise's senior executives feel that it is not presently in a position to undertake these processes. Current procedures involve an internal publishing system associated with a database of documents. There are useful business contacts with government enterprises, but few with appropriate commercial organizations. Web presence is limited to a static Website that describes the enterprise and its structure and contact information.

Some groups within the present organization that may be affected are:

Group	Responsibilities
Document delivery group	Despatching hardcopy (physical items) in response to orders
Development group	Software development of the databases and Web interfaces and content.
Publishing group	Commissioning content and maintaining the quality control of it
Marketing group	Promotion of the content



18 Exercises

Exercise 18.1

Many of the software evaluation elements itemised in **Chapter 18.1.1** apply to software under development, but we may use some of them to help evaluate existing software.

- i. Select two different online library catalogues or two different information retrieval programs (ideally these two should be compared by looking at the same database, for example *ERIC*).
- ii. Make a comparative tabulation for the *Usability* elements and those of the *Functionality* elements that you think may be applied.
- iii. Then move on to use the attributes identified in **Chapter 18.1.10** and **Chapter 18.1.11** to help evaluate the interfaces.
- iv. What other attributes do you think should be utilised to assist with the comparison?

Exercise 18.2

- i. Select two Websites of similar type (for example educational; publishing; health; government departments, or financial institutions).
- ii. Use the criteria in **Figure 18.3** to tabulate an evaluation of the two sites.
- iii. Depending upon the type of site that you have chosen, some of the factors will be less relevant than others. What other factors do you think need to be introduced?
- iv. How well do the criteria you have used apply to an interactive commercial site such as one selling antiquarian books

Exercise 18.3

Exercise 5.2 involved comparing input forms at Websites against criteria itemised in **Chapter 5.2.2**. Earlier in this chapter at **Chapter 18.1.2**, ISO adherence and applicability criteria were shown for forms creation.

- i. For some example Webforms, determine whether the two examples of criteria can usefully be combined for evaluation purposes.
- ii. As part of this process, see if you can utilise the presentation criteria from **Chapter 18.1.10**, and the HCI criteria from **Chapter 18.1.11**.

Exercise 18.4

Use the database evaluation criteria in **Chapter 18.1.8** to compare two databases that claim similar coverage in a discipline. For example you might consult the *Dialog Blue Sheets* at <http://library.dialog.com/bluesheets/> and then use the subject guides to identify a couple of similar databases.

A number of the comparison criteria cannot be undertaken without detailed research which involves making some use of the databases themselves. Therefore you should try to identify two databases that are available to you through your own organisation or academic institution.

You will find it useful as part of this process to undertake a literature search to identify formal comparisons that have taken place and have been documented. Databases such as *INSPEC*, *ERIC*, *Information Science Abstracts*, and *LISA* all contain references to examples of such comparisons.

Exercise 18.5

Exercise 16.4 involved undertaking an information audit for an enterprise. Refer to **Figure 18.4** which provides a framework for so-called data management evaluation. To what extent can the itemised target measures be utilised for such an information audit?

It is possible to undertake such an evaluation for an enterprise, and as with **Exercise 16.4**, this would be a major process conducted by management within an enterprise and/or consultants. From the documentation that you have available to you about an enterprise known to you (for example Website reports, annual reports), which of the objective areas are addressed by the enterprise?

For many enterprises, you are likely to find minimal information of this type in public documentation, however, you should find it useful as part of your project to undertake a literature search for cases studies of particular organisations, or types of organisations. Reference to such material may be found in business and technology databases under headings such as data, information or knowledge audits, mapping or evaluation.

19 Exercises

Exercise 19.1

Say that you wish to make explicit for the benefit of the corporate memory of your household, a particular task that you perform, perhaps one of:

- Doing the washing up;
- Making a bed;
- Changing a tyre on the bicycle.

What do you consider to be the best way of making the knowledge explicit, and why? Having chosen a way, codify the knowledge using one of the approaches mentioned in **Chapter 19.5**.

Exercise 19.2

- i. Identify an enterprise that assumes quality management philosophy of the type mentioned in **Chapter 19.1**.
- ii. Undertake a case study to see the extent to which quality records and documents are incorporated along the lines of Novack's four-level model.

Exercise 19.3

- i. Identify an enterprise that maintains a call centre for technology support within its own organisation and/or an information centre carrying out roles of the type listed in **Chapter 19.2.1**.
- ii. Undertake a case study to find out the extent to which such roles are being carried out. In particular, identify any information repositories that are used and the extent to which their content is managed.

Exercise 19.4

Chapter 19.4 gives examples of different types of information repositories, and in some cases draws attention to the professional personnel in them and how these personnel provide knowledge resources for an enterprise.

- i. Undertake a case study of one such repository in order to:
 - Identify the procedures that the organisation uses to collect and organise information;
 - Identify the services it provides to its users;
 - Identify the roles of staff who work in it, and which of these roles assists in an enterprise's knowledge utilisation.
- iii. **Chapter 19.4.4** mentions three domains in may be applied to a digital library. Whether you have a chosen a museum, an archives or a library as your repository, how might these three domains be explained in relation to your case study?

20 Exercises

Exercise 20.1

Examine the public documentation provided by an enterprise (such as Website reports and annual reports). In particular try to locate the enterprise's information policy. Using the headings provided in **Figure 20.5** try to identify these components within the information policy.

Exercise 20.2

- i. Porter & Millar (1985) gave an example where information was taken into account in relation to the five forces described in **Chapter 20.2**. Review the principles that they espouse.
- ii. For one of the following industries, analyse how each of the five forces may be an influence:
 - Photographic developing and printing.
 - Holiday travel organisation.
 - Motor vehicle sales.

Exercise 20.3

Refer to **Chapter 20.4** with reference to learning organisations. Do you think such a thing as a learning organisation exists (as opposed to one that doesn't learn)? If there is to be a learning organisation, which of Schwandt's four functional prerequisites can be supported by information management procedures discussed earlier in the book? Explain how these procedures might be applied.

Exercise 20.4

The concept of learning organisation has been extended to learning communities. Locate a community on the Web that identifies itself as a learning community, and determine those characteristics that it thinks make it different from other communities. Do you think they are different characteristics?