



信息管理专业英语 实用教程（第2版）

张强华 司爱侠 成小凤 陈红美 编著



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内 容 简 介

本书的目的在于切实提高读者的专业英语能力。

本书分为 14 个单元,每个单元包括以下部分:Text A 及 Text B——课文中包括基础知识和基本概念;New Words——给出课文中出现的新词,读者由此积累专业基本词汇;Phrases——给出课文中的常用词组;Abbreviations——给出课文中出现的、业内人士必须掌握的缩略语;Notes——讲解课文中出现的疑难句子,培养读者的阅读理解能力;Exercises——针对课文练习,巩固学习效果;Reading Material——进一步扩大读者的视野。

本书既可作为高等院校的专业英语教材,也可作为优秀高职高专院校的教学用书;作为培训班教材和供从业人员自学,亦颇得当。

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序

我国英语教育成就非凡，但也面临许多新的课题。英语教育的根本目标是培养人，培养各行各业人员实际应用英语的能力，使英语成为提高实际能力的助推器。随着英语基础教学水平的日益提高，随着企业对从业人员英语运用能力门槛的不断攀升，专业英语教学得到空前的重视。尽管英语教学界对此还有种种争论，但现实是“看不见的手”，有力地推动了专业英语教学的进程：各个高校专业英语课越开越多，社会上各种专业英语培训班日益火爆，从业人员急切地自我充电。正是为了满足这些需要，我们编写了这本《信息管理专业英语实用教程”。

本书主要遵循以下原则：其一，实用，我们在兼顾理论体系完整性的同时，尽可能多地从应用角度取材，以期读者在学过本书后，感觉工作中的材料就像是本书的一个单元；其二，新颖，我们对各专业的最新发展都给予非常充分的关注；其三，以 E-learn 理念为指导，构筑开放、互动的教学体系。本书作者留有电子邮件地址，读者学习中遇到问题可以与作者及时联系。我们亦可拜读者之赐，把本书打造成精品教材。

本书的作者都有编写教材的经验，都在教学一线工作，因此，本书会更贴近读者。

本书可作为普通高校专业英语教材，各种短期培训班使用本书亦颇得当，个人使用本书“充电”也将极有收益。

受我们才学之窘、时间之迫，书中必有不当之处，望各位读者不吝赐教。

司爱侠



前言

信息是最重要的资源之一，信息管理在许多组织中具有重要地位。信息管理专业从诞生之日起，便承担起培养信息管理人才的重任。信息管理跨管理、网络及软件等专业，具有很强的综合性。同时，信息管理的各组成部分也在高速发展中，并具有国际化特征。因此，信息管理人才的专业英语水平对其专业技能的发展至关重要，专业英语成为必修课。

我们以信息管理专业应用实际为依据，采集难度适中、覆盖面广的实用性和前瞻性材料。

我们向教师免费提供教学 PPT 和参考答案，大家可以从清华大学出版社网站下载，或者通过 E-mail 与我们联系。邮件标题请注明姓名及“信息管理专业英语实用教程(第 2 版)”字样，以免被误删，E-mail 地址如下：zqh3882355@163.com。

望大家不吝赐教。我们共同努力，使本书成为一部“符合学生实际、切合行业实况、知识实用丰富、严谨开放创新”的优秀教材。

编 者
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Unit 1

Text A

Information, Data, Computer Data Processing and IS

1. Information

1.1 Flow of Information

Information is the life blood of many organizations. Information flows into and out of organizations and between the different levels in an organization. Typically at the lower levels of an organization, information is very detailed, e.g. relating to individual customers, orders, suppliers, invoices etc. As information flows up the hierarchy of an organization, it tends to become summarized. Take a banking environment as an example. A teller is interested in the specific information about the account they are currently dealing with, such as account number and balance. At the end of each day the branch manager may receive a summary report showing the total of all balances of accounts at that branch, together with a short list of those individual customers with balances of less than -£500 or greater than £5 000 (an example of exception reporting). At the end of each week the area manager or director may receive a list of customers with balances of greater than £10 000. It is important in this context because much of the work of the systems analyst/designer is concerned with identifying the flow and structure of information within an organization.

1.2 Different Types and Levels of Data/Information

There is a distinction between data and information, which can be simply described by the statement that information is data which has been processed so that it becomes meaningful. In other words, information is data which has been placed in a specific context. Consider the number 153. On its own this is meaningless data. In a particular context, e.g. £153, the number becomes more meaningful because now we know that we are referring to 153 pounds. However this is still data rather than information. £153 only becomes information when you find out that it is the balance of account number 01234567.

2. Data

2.1 Data acquisition

Data acquisition (abbreviated DAQ) is the process of sampling of real world physical conditions and conversion of the resulting samples into digital numeric values that can be manipulated by a computer. Data acquisition and data acquisition systems (abbreviated with the acronym DAS) typically involves the conversion of analog waveforms into digital values for processing. The components of data acquisition systems include:

- Sensors that convert physical parameters to electrical signals.
- Signal conditioning circuitry to convert sensor signals into a form that can be converted to digital values.
- Analog-to-digital converters, which convert conditioned sensor signals to digital values.

Data acquisition applications are controlled by software programs developed using various general purpose programming languages such as BASIC, C, Fortran, Java, Lisp, Pascal. COMEDI is an open source API (Application Program Interface) used by applications to access and control the data acquisition hardware. Using COMEDI allows the same programs to run on different operating systems, like Linux and Windows.

Specialized software tools used for building large scale data acquisition systems include EPICS. Graphical programming environments include ladder logic, Visual C++, Visual Basic, MATLAB and LabVIEW.

2.2 Data analysis

Analysis of data is a process of inspecting, cleaning, transforming, and modeling data with the goal of highlighting useful information, suggesting conclusions, and supporting decision making. Data analysis has multiple facets and approaches, encompassing diverse techniques under a variety of names, in different business, science, and social science domains.

Data mining is a particular data analysis technique that focuses on modeling and knowledge discovery for predictive rather than purely descriptive purposes. Business intelligence covers data analysis that relies heavily on aggregation, focusing on business information. In statistical applications, some people divide data analysis into descriptive statistics, exploratory data analysis, and confirmatory data analysis. EDA focuses on discovering new features in the data and CDA focuses on confirming or falsifying existing hypotheses. Predictive analysis focuses on application of statistical or structural models for predictive forecasting or classification, while text analysis applies statistical, linguistic, and structural techniques to extract and classify information from textual sources, a species of unstructured data. All are varieties of data analysis.

Data integration is a precursor to data analysis, and data analysis is closely linked to data visualization and data dissemination.

3. Computer data processing

Computer data processing is any process that uses a computer program to enter data and summarize, analyze or otherwise convert data into usable information. The process may be

automated and run on a computer. It involves recording, analyzing, sorting, summarizing, calculating, disseminating and storing data. Because data is most useful when well-presented and actually *informative*, data-processing systems are often referred to as information systems. Nevertheless, the terms are roughly synonymous, performing similar conversions; data-processing systems typically manipulate raw data into information, and likewise information systems typically take raw data as input to produce information as output.

Data processing may or may not be distinguished from data conversion, when the process is merely to convert data to another format, and does not involve any data manipulation.

3.1 Data analysis

When the domain from which the data are harvested is a science or an engineering field, data processing and information systems are considered terms that are too broad and the more specialized term data analysis is typically used. This is a focus on the highly-specialized and highly-accurate algorithmic derivations and statistical calculations that are less often observed in the typical general business environment. In these contexts data analysis packages like DAP, gretl or PSPP are often used. This divergence of culture is exhibited in the typical numerical representations used in data processing versus numerical; data processing's measurements are typically represented by integers or by fixed-point or binary-coded decimal representations of numbers whereas the majority of data analysis's measurements are often represented by floating-point representation of rational numbers.

3.2 Data Processing

Data processing is, broadly, the collection and manipulation of items of data to produce meaningful information. In this sense it can be considered a subset of information processing, the change (processing) of information in any manner is detectable by an observer. The term is often used more specifically in the context of a business or other organization to refer to the class of commercial data processing applications.

Data processing may involve various processes, including:

- Validation—ensuring that supplied data is “clean, correct and useful”
- Sorting—arranging items in some sequence and/or in different sets.
- Summarization—reducing detail data to its main points.
- Aggregation—combining multiple pieces of data.
- Analysis—“the collection, organization, analysis, interpretation and presentation of data”.
- Reporting—listing detail or summary data or computed information.
- Classification—separating data into various categories.

3.3 Computer data storage

Computer data storage, often called storage or memory, refers to computer components and recording media that retain digital data used for computing for some interval of time. Computer data storage provides one of the core functions of the modern computer, that of information retention. It is one of the fundamental components of all modern computers, and coupled with a central processing unit (CPU, a processor), implements the basic computer model used since the 1940s.

In contemporary usage, memory usually refers to a form of semiconductor storage known as random-access memory (RAM) and sometimes other forms of fast but temporary storage. Similarly, *storage* today more commonly refers to mass storage—optical discs, forms of magnetic storage like hard disk drives, and other types slower than RAM, but of a more permanent nature. Historically, *memory* and *storage* were respectively called *main memory* and *secondary storage* (or *auxiliary storage*). Auxiliary storage (or auxiliary memory units) was also used to represent memory which was not directly accessible by the CPU. The terms *internal memory* and *external memory* are also used.

The contemporary distinctions are helpful, because they are also fundamental to the architecture of computers in general. The distinctions also reflect an important and significant technical difference between memory and mass storage devices, which has been blurred by the historical usage of the term *storage*.

4. Information system

An information system (IS) is any combination of information technology and people's activities using that technology to support operations, management, and decision-making. In a very broad sense, the term *information system* is frequently used to refer to the interaction between people, algorithmic processes, data and technology. In this sense, the term is used to refer not only to the information and communication technology (ICT) of an organization uses, but also to the way in which people interact with this technology in support of business processes.

Some make a clear distinction between information systems, ICT, and business processes. Information systems are distinct from information technology in that an information system is typically seen as having an ICT component. Information systems are also different from business processes. Information systems help to control the performance of business processes.

Alter argues for an information system as a special type of work system. A work system is a system in which humans and/or machines perform work using resources (including ICT) to produce specific products and/or services for customers. An information system is a work system whose activities are devoted to processing (capturing, transmitting, storing, retrieving, manipulating and displaying) information.

Part of the difficulty in defining the term information system is due to vagueness in the definition of related terms such as system and information. Beynon-Davies argues for a clearer terminology based in systemics and semiotics. He defines an information system as an example of a system concerned with the manipulation of signs. An information system is a type of socio-technical system. An information system is a mediate construct between actions and technology.

As such, information systems interrelate with data systems on one hand and activity systems on the other. An information system can also be considered a semi-formal language which supports human decision making and action.

New Words

information	[ˌɪnfə'meɪʃən]	<i>n.</i> 信息, 消息, 情报
detailed	['di:teɪld]	<i>adj.</i> 详细的
supplier	[sə'plaɪə]	<i>n.</i> 供应商, 供货商
invoice	['ɪnvɔɪs]	<i>n.</i> 发票
teller	['telə]	<i>n.</i> 出纳
balance	['bæləns]	<i>n.</i> 余额, 余数, 结存
parameter	[pə'ræmɪtə]	<i>n.</i> 参数, 参量
measurement	['meʒəmənt]	<i>n.</i> 测量, 度量
sample	['sɑ:mpl]	<i>v.</i> 取样, 体验, 尝试
		<i>n.</i> 抽样, 样本
conversion	[kən'veɜ:ʃən]	<i>n.</i> 变换, 转化
sensor	['sensə]	<i>n.</i> 传感器
waveform	['weɪvɔ:m]	<i>n.</i> 波形
converter	[kən'veɜ:tə]	<i>n.</i> 转换器
access	['ækses]	<i>vt.</i> 存取, 访问
inspect	[ɪn'spekt]	<i>vt.</i> 检查
transform	[træns'fɔ:m]	<i>v.</i> 转换, 转化, 变换
multiple	['mʌltɪpl]	<i>adj.</i> 多样的, 多重的
facet	['fæsit]	<i>n.</i> 方面
predictive	[pri'dɪktɪv]	<i>adj.</i> 预言性的; 预测性的
descriptive	[dɪs'krɪptɪv]	<i>adj.</i> 描写的, 描述的
statistical	[stə'tɪstɪkəl]	<i>adj.</i> 统计的, 统计学的
exploratory	[ɪk'splɔ:rətəri]	<i>adj.</i> 探测的
confirmatory	[kən'fə:mətəri]	<i>adj.</i> 确定的, 证实的
falsify	['fɔ:lsɪfaɪ]	<i>v.</i> 证伪
precursor	[pri:'kə:sə]	<i>n.</i> 前辈, 先驱, 先锋, 前任
hypothesis	[haɪ'pɒθɪsɪs]	<i>n.</i> 假设
forecast	['fɔ:kɑ:st]	<i>n. & v.</i> 预见, 预测, 预报
dissemination	[dɪ'semi'neɪʃən]	<i>n.</i> 传播, 分发
sort	[sɔ:t]	<i>v.</i> 分类
informative	[ɪn'fɔ:mətɪv]	<i>adj.</i> 提供信息的; 信息的, 情报的
synonymous	[sɪ'nɒnɪməs]	<i>adj.</i> 同义的, 类义的
manipulation	[mə'nɪpjʊ'leɪʃən]	<i>n.</i> 处理, 操作
harvest	['hɑ:vɪst]	<i>n. & v.</i> 收获
divergence	[daɪ'veɜ:dʒəns]	<i>n.</i> 分歧