计算机科普文选

英汉对照

The Language of Computer Programming in English

〔美〕John C. Keegel 著

高等教育出版社

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马明刚 译

气象出版社

内 容 简 介

为适应“使用计算机”和“学英语”的热潮，出版了这本英汉对照的《计算机科普文选》。全书从简明、实用的目的出发，分章介绍了计算机专业中常用的词汇、句型及文选。原文的语言流畅、风趣，参考译文用词较为恰当，与原文紧密对应。将原文和译文对照使用，具有学用快捷，事半功倍的效果。

本书适用于广大的学英语、搞计算机及一般的社会读者。

John C. Keegel
The Language of Computer
Programming in English
Regents Publishing Company, Inc.

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译者的话

本书原稿是美国雷金斯出版公司(Regents Publishing Company, Inc)出版的“职业英语”丛书中的一本。它主要介绍计算机专业中常用的词汇和本行业的概况。掌握这些词汇和概念是能够在计算机行业中工作的必要条件之一。由于本书的对象主要是美国本国读者，所以文笔流畅生动，用的是地道的英语。

“计算机”和“英语”是当前我国搞现代化建设的两个重要工具，许多读者都想同时把它们学到手。在繁忙的工作之余若把“英语”和“计算机”结合起来学，既学习英语又学习计算机的基本知识，达到一举两得之目的。本书确是为此目的而出版的一本理想的教材。

本书的中译本是由译者在国家气象局气象科学研究院英学习班上的讲稿整理而成，贡献给读者，愿在读者的英语和计算机学习中贡献一份微薄的力量。

译　者

1987.6.

FOREWORD

This book is one of a series of texts called English for Careers. The series is intended to introduce students of English to the language of different professional and vocational fields. The career areas that are covered are those in which English is widely used throughout the world—air travel, the petroleum industry, atomic energy, and so on.

Each book in the series serves several purposes. The first is to give the student an introduction to the particular vocational area in which he or she is involved. The duties of different kinds of jobs are discussed, as well as the problems that might be encountered at work. In this book, Computer Programming, the nature of computers is discussed, with particular attention to the relationship between the machines and the people who direct and control them—the programmers. Information about qualifying for a career in programming and the jobs available in the field is also included. This book is not intended to be a detailed training manual, but rather a broad introduction both to the opportunities and the problems involved in this kind of work.

From the point of view of teaching English as a foreign language, these books are intended for a student at the high

intermediate or advanced level. The student who uses these books should be acquainted with most of the structural patterns of English. His principal goals as a learner should be mastering vocabulary, using the various patterns in a normal mixture, and improving his ability to communicate in English.

Each lesson begins with a glossary of special terms in which words and expressions used in the vocational area being discussed are defined. The special terms are followed by a vocabulary practice section in which the student is asked questions whose answers will help him to use the special terms. In the reading, these terms are used again within a contextual frame of reference. Each reading is followed by questions for discussion which give the student the opportunity to use both the special terms and the structural patterns that have occurred in the reading in a situation in which communication is necessary.

Each lesson ends with a review section which serves several purposes. Some of these exercises pose problems which might occur if the student were actually working in the field. In this book, for example, he is asked to make a step-by-step sequence of a daily task, and later he is asked to make a flowchart of another task. In doing these exercises, he will not only be getting essential preparation in programming, but he will also be practicing the specialized vocational vocabulary and other vocabulary items and the structural patterns

that are used with them.

A great deal of successful language learning comes from experiences in which the learning is largely unconscious. In offering these books, it is hoped that the student's interest in his chosen field will increase his ability to communicate more effectively in English.

JOHN C. KEEGEL
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前　言

本书是职业英语丛书之一。该丛书是用来向学英语的学生介绍不同专业和职业领域中所使用的语言，它所涉及的专业范围是那些在全世界广泛使用英语的领域，如空中旅行、石油工业、原子能等等。

丛书的每一册都可以达到几个目的。其基本目的是向学生提供特定专业领域的初步知识，谈论各种工作的任务以及工作中可能遇到的一些问题。在计算机程序语言[1]这本书中，我们讨论了计算机的性质，重点讨论了计算机和指挥控制计算机的人（程序设计员）之间的关系，同时还包括了从事程序设计专业所需要的专业知识和该专业中所设置的各种职位，本书不是一本详细的训练手册，而是广泛介绍在从事计算机工作中可能遇到的一些问题。

从教学的观点来看，把英语作为一门外国语教学，本丛书是为中高级水平的学生编写的。因此，使用这套丛书的学生应当熟悉大多数英语句型。作为初学者，其主要目的是掌握词汇、综合应用各种句型和使用英语进行对话的能力。

本书每一课都是从专业词汇开始。词汇中给出了在专业范围内讨论所用到的单词和词组的定义。其后接着就是词汇练习。在练习词汇中向学生提问，他们的回答将有助于专业词汇的应用。在阅读课文时，联系上下文结构会一再用到这些词汇。课文之后是讨论题。这些讨论题给学生提供了运用

1）中译本改名为计算机科普文选——译者注

课文中出现过的词汇和句型的机会。而在使用英语进行对话时，这些词汇和句型都是必须用到的。

每一课末尾安排有一组复习，它可以用来达到几个目的。有些练习中提出的问题是如果学生真正在本行业中工作时可能遇到的问题。例如，在本书中要求学生把日常工作制定为一步步的工作程序，而且要求把其它工作也制定出一张流程图。做这些练习时，不仅要做编写程序的基本准备，而且还要求练习本专业词汇和本专业用到的其它有关的词汇和句型。

许多成功的语言学习经验说明学习大多是在不知不觉中进行的。提供这套丛书的目的是希望学生在他们选择的专业中将更有效地提高使用英语对话的能力。

John C. Keegel

于华盛顿地区

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UNIT ONE
ELECTRONIC DATA PROCESSING

Special Terms

Data: Properly prepared items or pieces of information. Properly is the key word in this definition, since a computer cannot act on data that are incorrectly prepared. Data is the plural form of datum, a word which is seldom used.

Processing: Handling or manipulating data for some purpose. The verb form, to process the data, is also commonly used.

Computer: An electronic machine or device for processing data. It can solve problems by accepting data, performing certain operations on the data, and giving the results of these operations.

Input: Data that are put in the computer so that they can be operated upon.

Output: What is put out by the computer; that is, the results from processing the data when they are made available by the compute..

Program: A step-by-step plan consisting of a sequence of instructions to the computer that is used to solve a spe-

cific problem. The person who prepares the step-by-step plan is a programmer. The verb form, to program data, also occurs frequently, and so do the noun programming and the adjective programmed that are derived from the verb.

Code: A system of communication that consists of symbols or signals. An alphabet is a written code in which the letters are symbols for the sounds of a language. The verb is to code.

Analog Computer: A computer that can simulate, or imitate, measurements by electronic means, such as varying voltages.

Digit: A single-character number; in other words, the numbers from 0 through 9.

Digital Computer: A computer that receives data in a code composed of digits.

Core: A tiny circle of metal with a hole in the middle; it is made of material that can be magnetized.

Debug: To remove a defect or an error from a program.

GIGO: "Garbage in, garbage out." If a computer does not receive correctly programmed or coded data, the output will not make sense; in other words, it will be "garbage."

Vocabulary Practice

1. What are data? Why is properly a key word in the

definition? Of what word is data the plural form?

2. What is processing?
3. What is a computer and what can it do?
4. What is the difference between input and output?
5. What is a program? Who prepares a program? What other derivations of the word are frequently used?
6. What is a code? Give an example. Can you think of another example besides the one given?
7. What can an analog computer do?
8. What is a digit?
9. What is a digital computer?
10. What is a core? What special kind of material is it made of?
11. What does debug mean?
12. What does GIGO stand for? What is the significance of the expression?

Electronic Data Processing

Computers are electronic machines for processing data. Data are pieces or items of information that have been properly prepared so that the machine can work with them. Processing means handling or manipulating the material that has been presented to the machine in such ways as performing calculations, classifying information, or making comparisons. A computer is made of millions of electronic devices that can

store the data or switch them through complex circuits with different functions at incredible speeds.

In only a short time, computers have profoundly changed the way in which many kinds of work are done. Indeed, they have created whole new areas of work that did not exist prior to their development. We have all heard of computers plotting the course of rockets, preparing bank statements, predicting elections, forecasting weather, and so forth. Computers do many tasks for us that would be extremely difficult if we did not have them. Computers take routine tasks and do them in a fraction of the time it would take a man or even a team of men to do them.

Many people imagine that a computer is a very large adding machine. Certainly a computer can function in that way, but this is a very restricted view of the nature of a computer. The message of a familiar advertisement is that machines should work, but man should think. This is the basic philosophy of computer science, even in the advanced states of computer technology.

Despite the scientific basis of computers, many people are awed by the way they function. This is probably due to the fact that computers perform very complex operations in a very short time–seconds or even fractions of a second. In the modern world, people are often impressed with speed.

Devices such as traffic lights and telephones are a part of modern life. In a sense they are computers too. All

computers have several features in common, regardless of make or design. Information is presented to the machine, the machine acts on it, and a result is then returned. The pieces of information, or data, that are presented to the machine are called the input. The internal operations of the machine are called processing. The result that is returned is called the output.

The telephone works in just that way. The input is dialing a number; the processing is the switching system that locates the number that has been dialed; and the output is completing the call. A traffic light works in the same way. A predetermined electrical timing impulse is given to the light (the input); the switch inside the mechanism selects a color (the processing); and the light changes color (the output).

These three basic concepts of input, processing, and output appear in almost every phase of human life. In school the input is the subject matter, the processing is studying, and the output is knowledge. When someone cooks a meal, the input is the uncooked food, the processing is the cooking itself, and the output is the completed meal.

The input, the processing, and the output are determined by a human agent. This person is called the programmer. His job is to determine what information is needed and what operations the computer must perform in order to solve a problem. He determines how the information is to be processed in order to obtain the desired result.