计算机科学英语文选

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南京大学外文系

公共英语教研室编

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前　言

当前,在为实现科学技术现代化而进行的伟大斗争中,广大读者迫切要求出版各种英语自学读物,借以提高英语阅读能力,尽快地将国外的先进科学技术吸收过来,为我国社会主义革命和建设服务。为了适应这种形势,我们特地编写了这套《计算机科学英语文选》,以帮助读者提高阅读有关计算机科学英语书刊和文献的能力。

本书的对象是具有相当于大学理科二年级英语水平的与计算机科学有关的同志。

本书共六十课,分上、下两册,每册三十课。内容由浅入深,篇幅由短而长。每课除正文外,有词汇、词组和注释,书末附有各课译文。这里要强调说明:译文仅供读者在理解原文有疑难时参考;读者不应依赖译文,逐词逐句地进行英汉对照,而应通过大量阅读,扩大词汇量,熟悉各种语法现象,最后在阅读能力上逐渐做到从英语直接得到概念而无需通过汉语翻译。

本书的材料大多选自近年来美英所出版的有关计算机科学的书刊。选材范围较广,尽可能包括这门学科的一般知识;词汇、短语、语法现象较全面;文体、题材也较多样。

本书在编写过程中,曾得到我校数学系计算机教研室的大力协助。我们借此机会对他们表示谢忱。

由于编者的专业知识和语言水平有限，本书一定存在着不少缺点和错误，悬望读者在阅读过程中，把发现的问题或改进意见随时告诉我们，使本书以后再版时能够得到修正和充实。

<div align="right">编　者</div>

本书所用语法略语表

a. adjective 形容词

ad. adverb 副词

n. noun 名词

pl. plural 复数

sing. singular 单数

vi. intransitive verb 不及物动词

vt. transitive verb 及物动词

CONTENTS

1. WHAT CAN A COMPUTER DO?

A computer can do thousands of things.

Astronauts use computers. A spacecraft cannot leave the earth and go to the moon without computers. Before the mission there are millions of calculations. What must the spacecraft be like?① When can it leave? Where is the moon going to be exactly?② How much fuel must there be on the spacecraft?

The spacecraft leaves. Now the computer must answer other questions. Is it on the right course? Is it going at the right speed? When must it change course or speed? When can the astronauts have their breakfast? Scientists today must have computers for their calculations. A man can do an easy calculation in two or three minutes. A computer can do many hundreds in three minutes.

In some schools there is a computer classroom. Children can do their mathematics with a computer, for example. The computer writes questions on the screens in front of the children, and the children answer on their keyboard.

This is part of a lesson with a little girl:③

Computer   (Writing on screen) Hello! What's your name and number?

Girl   (Pressing buttons) Mary. 236.

Computer   Hello, Mary! Look at this:

$$6+4=10$$
$$6+?=13$$

What's the answer?

Girl   Er—7.

Computer   Very good, Mary!

The computer knows Mary. This is not their first lesson. The computer can give Mary the right lesson for her: not fast, not slow. And the computer can do this with many children at the same time.

A computer can do almost everything! But it cannot do anything without man. A computer must have three people: The programmer, the operator and the technician. The programmer makes the computer's instructions (programmes), the operator presses the necessary buttons on the computer and the technician services the computer and repairs breakdowns. These people can make mistakes. People must check the programmes and test them often on the computer.

In the future we are going to use computers for almost everything almost every day.

词　　汇

computer [kəm'pju:tə] n. 计算机, 电子计算机

astronaut ['æstrənɔ:t] n. 宇(宙)航 (行)员

spacecraft ['speiskræft] n. 宇宙飞 船

mission ['miʃən] n. 使命,任务

calculate ['kælkjuleit] vt. 计算;核 算

fuel ['fjuəl] n. 燃料

course [kɔ:s] n. 路线;道路

speed [spi:d] n. 速度

mathematics [ˌmæθi'mætiks] n.

数学

screen [skri:n] n. 屏,屏幕,荧光屏

keyboard ['ki:bɔ:d] n. 键盘

press [pres] vt. 按,揿,压

button ['bʌtn] n. 按钮

programmer ['prougræmə] n. 程序 设计员,程序员

operator ['ɔpəreitə] n. 操作员

technician [tek'niʃən] n. 技术员

instruction [ins'trʌkʃən] n. 指令; 指导

programme ['prougræm] n. 程序; 节目,提纲

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service ['sə:vis] n. 保养，检修；服务　损坏
repair [ri'pɛə] vt. 修理；纠正　check [tʃek] vt. 检验；核对
breakdown ['breikdaun] n. 故障，　test [test] vt. 测试，试验；测验

短　语

in front of 在…前面　　　　　　*(to) make a mistake* 犯错误
at the same time 同时　　　　　*in the future* 将来

注　释

① What must the spacecraft be like?

　　本句中的 like 是形容词，意为"象"，"相似"，后面常可接一个名词。疑问代词 what 作 like 的宾语。like 和 what 一起作表语，说明 the spacecraft。

② Where is the moon going to be exactly?

　　本句是特殊疑问句。is going to be 等于 will be。疑问副词 where 实际上是在 to be 后面的位置上，作表语，说明 the moon。

③ 在本句中，with 是前置词，此处意为"与…有关"。本句可直译为："这是一堂与一个女孩有关的课的一部份。"

programmer. operator. technician

information

2. COMPUTERS (PART ONE)

A Dialogue

Li Ming and his friend, Hsiao Wang, are visiting a large computer installation in the head office of a group of warehouses dealing with engineering tools.① They are talking to Old Chang, an expert on computers.

Old Chang   I'm afraid, Hsiao Wang, you're not quite accurate when you call a computer an 'electronic brain'.

Hsiao Wang   Oh? But most people do.②

Old Chang   Yes, it was given that <u>title</u> by some people not long after the first modern electronic computer was built in 1946.③

Li Ming   It is electronic, Old Chang, so therefore you must be objecting④ to the word brain.

Old Chang   Exactly, Li Ming. There <u>are similarities with</u> the human brain, but there is one very important difference.

Hsiao Wang   The computer is better?

Old Chang   In some ways, yes; but not in something which is quite fundamental.

Li Ming   Old Chang, do you mean the fact that the machine is controlled by man?⑤

Old Chang   I do. You see, despite all its accomplishments, the so-called electronic brain must be programmed by a human brain.

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Hsiao Wang	Programmed?
Li Ming	Yes, Hsiao Wang, a program is a sequence of instructions prepared for the computer for a specific calculation.⑥
Old Chang	The point is, that a human tells the machine what to do, when to do it and how it is done.⑦
Hsiao Wang	I see! Do you also program information for the computer's memory?
Old Chang	Correct, except the word memory has rather gone out of fashion. The computer doesn't really remember. Information is stored in it. We refer to core storage, or the store of data. (The door opens) 请心估估估高　比估估估高 ⑩
Old Chiao	Old Chang, the machine's free now for a real time demonstration.
Old Chang	Thank you, Chiao. If you'd like to follow me... These are called interrogating typewriters.
Li Ming	And that's the input-output system?
Old Chiao	That's right. It's the method best suited to the particular needs of this organization.⑧
Old Chang	The operator types the information or questions, or both.
Operator	Yes. This produces two very different copies.
Li Ming	One's an ordinary typewritten copy.
Old Chang	That's right. Then her typing⑨ also sends pulses down a line, an ordinary telephone line. And this simultaneously cuts the information or question on to a paper tape which is fed into the computer. I think Old Chiao here can tell you the rest.

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词　汇

installation [ˌinstəˈleiʃən] n. 装置；安装

warehouse [ˈwɛəhaus] n. 仓库，货栈

engineering [ˌendʒiˈniəriŋ] n. 工程

expert [ˈekspərt] n. 专家

accurate [ˈækjurit] a. 精确的；准确的

brain [brein] n. 脑

title [ˈtaitl] n. 称号，衔头；标题

therefore [ˈðɛəˈfɔː] ad. 因此，所以

object [əbˈdʒekt] vi. 反对

similarity [ˌsimiˈlæriti] n. 类似，相似

human [ˈhjuːmən] a. 人的，人类的；n. 人

fundamental [ˌfʌndəˈmentl] a. 基本的，根本的；基础的

control [kənˈtroul] vt., n. 控制

despite [disˈpait] prep. 不管，尽管

accomplishment [əˈkɔmpliʃmənt] n. 技能，才艺；完成

sequence [ˈsiːkwəns] n. 序列

specific [spiˈsifik] a. 专有的；特定的

memory [ˈmeməri] n. 记忆，记忆力；存储，存储器

rather [ˈrɑːðə] ad. 相当

store [stɔː] vt. 存储；n. 存储；存储器

core [kɔː] n. 磁心

storage [ˈstɔːridʒ] n. 存储；存储器

data [ˈdeitə] n. 数据；资料 (sing. datum)

demonstration [ˌdemənsˈtreiʃən] n. 示范，表演

interrogate [inˈterəgeit] vt. 询问；讯问

typewriter [ˈtaipraitə] n. 打字机

input [ˈinput] n. 输入

output [ˈautput] n. 输出

particular [pəˈtikjulə] a. 特殊的

organization [ˌɔːgənaiˈzeiʃən] n. 组织，机构；结构，体系结构

type [taip] vt. 用打字机打

copy [ˈkɔpi] n. 副本，复制品

pulse [pʌls] n. 脉冲；脉搏

simultaneously [ˌsiməlˈteinjəsli] ad. 同时地

tape [teip] n. 磁带，录音带

短　语

(to) deal with 经营，经办；涉及，处理

(to) refer to 谈及

(to) go out 过时

注　释

① dealing with engineering tools 是现在分词短语，作定语，修饰 warehouses。

② 在本句中，most 是形容词，意为"大多数"，do 在这儿是代替前面句子中的谓语 call...brain。这种用 do 或 does 代替前面已出现过的谓语（行为动词加其他成份）来避免重复的用法，在英语中颇普遍。

③ 本句的主动语态应是：Some people gave it that title...。其中，it 是间接宾语，that title 是直接宾语。在目前的这句句子中，it 是主语，that title 则称为保留宾语。

④ must be objecting 是有情态动词 must 的动词现在进行时态，这比"you must object"更为强调。

⑤ that the machine is controlled by man 是同位语从句，与前面的 fact 同位。

⑥ prepared for the computer for a specific calculation 是过去分词短语，作定语，修饰 instructions。

⑦ that a human tells... 到结束是由连接词 that 引出的一句名词从句，作表语，说明 the point。其中 what to do，when to do it 是两个各带有疑问代词和疑问副词的不定式短语，在表语从句中作 tells 的宾语，how it is done 是由连接副词 how 引出的名词从句，作 tells 的宾语。

⑧ best suited to the particular needs of this organization 是过去分词短语，作定语，修饰 method，best 是副词 well 的最高级，意为"最"。

⑨ 在本句中，her typing 是动名词短语，作主语。

core storage · store of data

similarity X

tape

3. COMPUTERS (PART TWO)

A Dialogue

Old Chiao   Well, this is head office. We also have eight large warehouses scattered throughout the province, each with a duplicate of what you see here.①

Hsiao Wang   Each with a computer?

Old Chiao   Oh, no, just one computer, and it's in this building.

Hsiao Wang   And the eight warehouses are all connected to the same computer?

Old Chiao   Yes. Whenever any stock is received by or despatched from one of those warehouses, an operator sends the information on-line to the central processor. That gives us a complete running inventory.

Old Chang   Li Ming, I thought it would make a good demonstration if you were to put any sort of question you like about the inventory to the computer.② Here it is.

Li Ming   Oh, well... How many six-inch screwdrivers are there in stock? Just the total for the eight warehouses.③

Old Chiao   All right. Will you process that, please?

Operator   Yes, Old Chiao.

   (The operator types the question, and the reply is received immediately from the computer.)

Hsiao Wang   It is!④ It says: '6' screwdrivers '14' gross.

Old Chang   That's known as real time processing.⑤

Li Ming   So real time is a method of processing data so fast there's virtually no time-lag between enquiry and result.⑥

Old Chang   Correct. For example, in the case of a man driving a car at, say, thirty miles per hour,⑦ he can normally solve all his driving problems in real time; whereas at a hundred miles per hour he may not be able to.

Hsiao Wang   I suppose, Old Chang, there must be many scientific uses for computers?

Li Ming   Weather forecasting, for example?

Old Chang   About a hundred years ago somebody had a theory for forecasting weather based on reports from all over the world.⑧ Unfortunately, it would have required sixty-four thousand skilled clerks working full-time.⑨

Li Ming   I know about that. They use a similar system today, and one relatively small computer does the same work in only half-an-hour.

Hsiao Wang   Is speed the only advantage?

Old Chang   It's one of them. Accuracy is another—provided the computer is given accurate information to start with.

Li Ming   Computers can also make mistakes, of course.

Old Chang   Provided there is no hardware fault, the computer does not make a mistake.

Let's go back to the office and we can talk about other scientific uses of computers. Come this way.

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词　汇

scatter [s'kætə] *vt.* 散布，分布

throughout [θru:'aut] *prep.* 遍及

province ['prɔvins] *n.* 省

duplicate ['dju:plikit] *n.* 复制品，
完全相似的对应物

connect [kə'nekt] *vt.* 连接，连结

stock [stɔk] *n.* 库存，存货

despatch [dis'pætʃ] *vt.* 送发，派遣

on-line ['ɔn'lain] *n. & ad.* 联机
（地）

processor ['prəusesə] *n.* 信息处理机

running ['rʌniŋ] *a.* 流动的，连续的

inventory [in'vɔntri] *n.* 清单

screwdriver ['skru:'draivə] *n.* 旋
凿，(螺丝)起子

process ['prəuses] *vt.* 处理；*n.* 过程

reply [rip'lai] *n., v.* 回答，答复

immediately [i'mi:djətli] *ad.* 立
即，马上

gross [grəus] *n.* 罗（＝12 打）

virtually ['və:tjuəli] *ad.* 实际上，
实质上

time-lag ['taim'læg] *n.* 时间上的
间隔

enquiry [in'kwaiəri] *n.* 询问（＝
inquiry)

normally ['nɔ:məli] *ad.* 正常地

whereas [wɛər'ræz] *conj.* 而，却；
反之

weather ['weðə] *n.* 天气

forecast ['fɔ:'ka:st] *vt.* 预测，预报

theory ['θiəri] *n.* 理论

unfortunately [ʌn'fɔ:tʃənitli] *ad.*
不幸地

require [ri'kwaiə] *vt.* 需要

skilled [skild] *a.* 熟练的

clerk [kla:k] *n.* 职员，办事员

full-time ['ful'taim] *ad.* 全部工作
时间地

similar ['similə] *a.* 相似的

relatively ['relətivli] *ad.* 相对地；
比较地

advantage [əd'va:ntidʒ] *n.* 优点；
有利条件

accuracy ['ækjurəsi] *n.* 精确，准确

provided [prə'vaidid] *conj.* 以…为
条件，假如

hardware ['ha:dwɛə] *n.* 硬件

fault [fɔ:lt] *n.* 毛病，故障；过错

短　语

in the case of 在…情况下

(to) base ... on 基…于

all over the world 全世界

注　释

① each with a duplicate of what you see here 是后置插入语，由代词