SPECIAL ENGLISH FOR THE STUDENTS OF COMPUTER

Unit 1

Section One: Reading Comprehension

The Information Society

Where will you be and what will you be doing in the year 2020? This is a tough question even for technology experts who are reluctant to speculate more than a few months into the future. Things are changing too quickly. A continuous stream of exciting new innovations in **information technology (IT)** continues to change what we do and how we think. We use the term *IT* to refer to the integration of computing technology and information processing.

Most of us are doing what we can to adapt to this new **information society** where **knowledge workers** channel their energies to provide a cornucopia of computer-based information services. A knowledge worker's job function revolves around the use, manipulation, and dissemination of information. Your knowledge of computers will help you cope with and understand today's technology so you can take your place in the information society, both at the workplace and during your leisure time.

Information Technology Competency

Not too long ago, people who pursued careers in almost any facet of business, education, or government were content to leave computers to computer professionals. Today these people are knowledge workers. In less than a generation, **information technology competency (IT competency)** has emerged in virtually any career from a *nice-to-have skill* to a *job-critical skill.*

If you're afraid of computers, information technology competency is a sure cure. IT competency will allow you to be an active and effective participant in the emerging information society.

The Technology Revolution

In an information society, the focus of commerce becomes the generation and distribution of information. A technological revolution is changing our way of life: the way we live, work, and play. The cornerstone of this revolution, the *computer,* is transforming the way we communicate, do business, and learn.

Personal computers, or **PCs,** offer a vast array of *enabling technologies*. Enabling technologies help us do things. For example, PCs have maps that pinpoint your location to help you navigate the streets of the world. They have presentation tools that help you make your point when you get there. Already, you need go no farther than your home computer to get the best deal on a new car, order tickets to the theater, play chess with a grand master in Russia, or listen to a radio station in New Zealand.

Foundation for Our Information Society

Data (the plural of *datum)* are just raw facts. Data are all around us. Every day we generate an enormous amount of data. **Information** is data that have been collected and processed into a meaningful form. Simply, information is the meaning we give to accumulated facts (data). Information as we now know it, though, is a relatively new concept. Just 50 short years ago, *information* was the telephone operator who provided directory assistance. Around 1950, people began to view information as something that could be collected, sorted, summarized, exchanged and processed. But only during the last decade have computers allowed us to begin tapping the potential of information.

Computers are very good at digesting data and producing information. For example, when you run short of cash and stop at an automatic teller machine, all data you enter, including that on the magnetic stripe of your bankcard, are processed immediately by the bank's computer system. A computer system eventually manipulates your *data* to produce *information.* The information could be an invoice from a mail-order house or a bank statement.

Traditionally, we have thought of data in terms of numbers (account balance) and letters (customer name), but recent advances in information

technology have opened the door to data in other formats, such as visual images. For example, dermatologists (physicians who specialize in skin disorders) use digital cameras to take close-up pictures of patients' skin conditions. Each patient's **record** (information about the patient) on the computer-based **master file** (all patient records) is then updated to include the digital image. During each visit, the dermatologist recalls the patient record, which includes color images of the skin during previous visits. Data can also be found in the form of sound. For example, data collected during noise-level testing of automobiles include digitized versions of the actual sounds heard within the car.

The relationship of data to a computer system is much like the relationship of gasoline to an automobile. Data provide the fuel for a computer system. Your car won't get you anywhere without gas, and your computer won't produce any information without data.

(Larry & Nancy Long: pp. 4-8)

Part I. Comprehension Exercises

A. Put "T" for true and "F" for false statements. Justify your answers.

..... 1. Computer experts are able to speculate about the future of man's technological achievements.

..... 2. To be IT-competent, you must be able to write computer programs.

..... 3. The author of this passage compares data to gasoline.

..... 4. It is NOT true that your PC cannot produce any information without data.

..... 5. Data were traditionally known as numbers and letters.

B. Choose a, b, c, or d which best completes each item.

1. The technological revolution, founded on ....., has changed man's way of life.

a. businesses b. education

c. computers d. information

2. The main point of paragraph six is supported by ..... .

a. exemplification b. explanation
c. description d. reasoning

3. As we understand from the text, data are ..... .
   a. reconstructed numbers that can be used efficiently
   b. usable form of information
   c. the raw facts from which information is derived
   d. the end result of manipulated facts
4. The term used to describe the integration of computer technology and information processing is ..... .
   a. information handling b. software
   c. information technology d. data tech
5. A person whose job is mainly concerned with the use, manipulation, and dissemination of information is called ..... .
   a. an office wunderkind b. a knowledge worker
   c. a data expert d. an info being

C. Answer the following questions orally.

1. What does the term information society refer to?
2. According to the text, how does a cornucopia of information form?
3. What is the difference between a record and a file?
4. How does data processing help dermatologists?
5. How is the term 'information' defined in the text?

Part II. Language Practice

A. Choose a, b, c, or d which best completes each item.

1. ..... allows people to interact with and use computers and have an understanding of IT issues.
   a. Information technology competency
   b. Information-based revolution
   c. Information dissemination
   d. Information society
2. ..... updating involves adding, changing, and deleting file records.
   a. Field b. File

c. Database d. Record

3. In ....., the generation and dissemination of information become the central focus of commerce.
   a. an internet b. an information system
   c. an intranet d. an information society
4. Interconnected computing hardware, including processors, storage devices, input/output devices, and communications equipment comprise ..... .
   a. the computer network b. the computerese
   c. the computer system d. the computer literacy
5. ....., a relatively permanent file, contains all the existing records for a given application.
   a. File management system b. Fixed storage
   c. Filmed output d. Master file

B. Fill in the blanks with the appropriate form of the words given.

1. Compute

a. Great gains have been made in the development of ..... hardware and software.
b. Desirable features of analog and digital machines are sometimes combined to create a hybrid ..... system.
c. The banking industry has become more and more ..... .
d. It is a fact that humans cannot ..... as fast as computers.
e. The computer can interpret and execute programmed commands for input, output, ..., and logic operations.

2. Produce

a. Plotters are used to ..... permanent copies of graphic output.
b. Dark characters on a bright background can ..... by certain screens.
c. Computers are used to control mechanical operations in the auto industry so as to increase ..... .

3. Collect

a. You can be an intelligent consumer of computers and computer

equipment, ... called hardware.

b. Software refers to a ..... set of instructions, called programs.

c. Data ..... during noise-level testing of automobiles include digitized versions of the actual sounds heard within the car.

4. Technology

a. In this book you will learn those terms and phrases that not only are the foundation of computer ..... but also are very much a part of everyday conversation at school, home, and work.

b. This is a ..... age.

c. New surgical ..... are being tried all the time.

d. ..... speaking, this procedure has some advantages over that one.

e. It is difficult to say which country is ..... superior in terms of space equipment.

f. Her speech was too ..... for most people to understand.

5. Record

a. Information ..... on disks can be accessed much faster than information recorded on tapes.

b. A database management package derives much of its power from the ease with which it can sort ....., and search for answers to a wide range of questions.

C. Fill in the blanks with the following words.

components	representation	provide	organized
information	specific	mean	numeric
meaning			

The word data is used to indicate a/an ..... of facts necessary for communicating items of ..... meaning. These facts can be represented as ....., alphabetic, or alphanumeric data. They are the basic ..... that are processed by the computer to produce ..... . Although the term information is sometimes used to ..... data, it also has a more specific ..... . Information refers to data that has been ..... into some coherent pattern and processed to ..... some specific format.

D. Put the following sentences in the right order to form a paragraph. Write the corresponding letters in the boxes provided.

a. Examples are robots used in defense to handle underwater military missions.

b. With the age of the computer has arrived the age of the robot.

c. Clearly, these signal the end of jobs for many factory workers–a troublesome social problem.

d. These are not vaguely human-shaped robots, but rather information machines with the manual dexterity to perform tasks too unpleasant, or too dangerous to assign to human beings.

1	2	3	4

* * *

Section Two: Further Reading

Personal Computers

In 1981, IBM introduced its **IBM PC** and it legitimized the personal computer as a business tool. Shortly after that, other manufacturers began making PCs that were 100% compatible with the IBM PC; that is, they basically worked like an IBM PC. Most of today's personal computers (over 80%) evolved from these original PC-compatibles. Long removed from the IBM PC, they are also called **Wintel PCs** because they use the Microsoft *Windows 9x/NT/2000* (a collective reference to Microsoft *Windows 95, Windows 98, Windows NT,* or *Windows 2000*) control software and an Intel-Corporation or Intel-Compatible processor. Each of the Microsoft Windows 9x/NT/2000 family of **operating systems** controls all hardware and software activities on Wintel PCs.

The Wintel PC represents the dominant PC platform. A **platform** defines a standard for which software is developed.

Conventional PCs: Pockets, Laptops, Desktops, and Towers

Conventional personal computers have a full keyboard, a monitor, and can function as stand-alone systems. These PCs can be categorized as *pocket PCs, laptop PCs, desktop PCs,* and *tower PCs.*

Pocket and Laptop PCs. Pocket PCs and **laptop PCs** are light (a few ounces to about eight pounds), compact, and are called 'portable' because they have batteries and can operate with or without an external power source. The pocket PC, sometimes called a **palmtop PC,** literally can fit in a coat pocket or a handbag. Laptops, which weigh from three to eight pounds, often are called **notebook PCs** because they are about the size of a one-inch-thick notebook.

The power of a PC may not be related to its size. A few laptop PCs can run circles around some tower PCs. Some user conveniences, however, must be sacrificed to achieve portability. For instance, input devices, such as keyboards and point-and-draw devices, are given less space in portable PCs and may be more cumbersome to use. This is particularly true of pocket PCs, in which miniaturized keyboards make data entry and interaction with the computer difficult and slow. The display screen on some pocket PCs is monochrome and may be difficult to read under certain lighting situations. Portable computers take up less space and, therefore, have a smaller capacity for permanent storage of data and programs. Laptop battery life can be as little as a couple of hours for older models to 20 hours for state-of-the-art rechargeable lithium batteries.

The 2-in-1 PC can be used as both a notebook and a desktop PC. It has two parts: a fully functional *notebook PC* and a **docking station.** Two-in-one PCs have a configuration that allows users to enjoy the best of both worlds–portability and the expanded features of a desktop. The notebook, which supplies the processor, is simply inserted into or removed from the docking station, depending on the needs of the user. The docking station can be *configured* to give the docked notebook PC the look and feel of a desktop PC. That is, the docking station can expand the notebook's capabilities and

might include more disk storage, a CD-ROM drive, several interchangeable disk options, a full-size keyboard, a large monitor, and expansion slots into which still other features can be added to the system (for example, circuitry that would enable television programming to be viewed on the PC's monitor). Usually, docking stations provide a direct link to the corporate network.

Another notebook option, called the **port replicator,** works like the docking station in that the notebook PC is inserted into it and removed as needed. Once inserted the notebook can use the port replicator **ports** and whatever is connected to them. Ports are electronic interfaces through which devices like the keyboard, monitor, mouse, printer, and so on are connected. Port replicators also provide bigger speakers and an AC power source, and some include a network connector.

Desktop and Tower PCs. Desktop PCs and **tower PCs** are not considered portable because they rely on an outside power source and are not designed for frequent movement. Typically, the desktop PC's monitor is positioned on top of the processing component. The processing component of the tower PC is designed to sit upright, like a desktop PC's processing component standing on its end. The taller towers (over two feet) are usually placed beside or under a desk, and the smaller mini-tower may be placed in any convenient location (on a nearby shelf, on the desk, or on the floor).

Of the two, the tower has emerged as the most popular, primarily because it has a smaller *footprint* (the surface space used by the unit). The laptop which costs about twice that of a comparable tower PC, is gaining ground. About one in three PCs sold are laptops.

The Extended PC Family: Slate PCs, PDAs, and NCs

The conventional members of the PC family have several unconventional cousins. These personal computers may be designed for special applications or for use in a particular computing environment.

Slate Computers. Mobile workers in increasing numbers are using portable **slate PCs.** Slate PCs, sometimes called **pen-based PCs,** use electronic pens in conjunction with a combination monitor/drawing pad

instead of keyboards. Users select options, enter data, and draw with the pen. United Parcel Service (UPS) couriers use slate PCs when they ask you to sign for packages on a pressure-sensitive display screen with an electronic stylus.

Slate computers are poised to make an entry into the world of many mobile professionals. Handwritten text is interpreted by handwriting-recognition software, then entered into the system. **Speech-recognition** software, which allows the user to enter spoken words into the system, is being integrated into high-end slate PCs. Insurance agents and claims adjusters who need to work at accident or disaster scenes have found slate computers more suitable to their input needs, which may include both text and drawings.

Personal Digital Assistants. Personal digital assistants (PDAs), or **handheld PCs**, may take on many forms and are called by many names, from *connected organizers* to *personal communicators* to *mobile business centers* to *Web phones*. PDAs are smaller than slate PCs, usually weighing less than half a pound. They can include a built-in cellular phone that enables the wireless sending/receiving of faxes and access to the Internet (including e-mail). Their built-in wireless communications capabilities give their users immediate access to the Internet, colleagues and clients, and needed information, virtually anytime, anywhere. PDA interaction can be via the pen (like a slate PC) or by touching the keys on an on-screen keyboard or a reduced-key keyboard.

Generally, PDAs support a variety of **personal information management** systems. A **PIM** might include appointment scheduling and calendar, e-mail, fax, phone-number administration, to-do lists, tickler files, 'Post-it' notes, diaries, and so on. Some PDAs can support a variety of PC-type applications, such as spreadsheets and personal financial management. Also, PDAs are designed to be easily connected to other computers and printers for data transfer, network access, and printing.

Network Computers. In contrast to the conventional PC, the **network computer,** or **NC,** is designed to function only when it is linked to a server computer (normally an organization's internal network of computers). The NC looks similar to a PC but with several major configuration differences. First, it has a relatively small processor and considerably less RAM than

modern personal computers. Second, it does not have a permanently installed disk. And, of course, it is less expensive than a stand-alone PC.

Workstations: The Hot Rods of Computing

What looks like a PC but isn't? It's a *workstation* and it's very fast. Speed is one of the characteristics that distinguishes workstations from PCs. In fact, some people talk of workstations as 'souped-up' PCs. The PC was fine for word processing, spreadsheets, and games, but for real 'power users'–engineers doing **computer-aided design,** or **CAD** (using the computer in the design process), scientists and researchers who do a lot of 'number crunching', graphics designers, multimedia content developers, an so on–the PC sometimes falls short.

The workstation's input/output devices also set it apart from a PC. A typical workstation will sport a large-screen color monitor capable of displaying high-resolution graphics. **Resolution** refers to the clarity of the image on the monitor's display. For pointing and drawing, the workstation user can call on a variety of specialized point-and-draw devices that combine the precision of a a gun sight with the convenience of a mouse. Add-on key-pads can expand the number of specialized function keys available to the user.

(Larry & Nancy Long: pp. 18-25)

Comprehension Exercises

A. Choose a, b, c, or d which best completes each item.

1. Which statement is NOT true?

a. IBM PC was introduced and legitimized in 1981.

b. Wintel PC is a personal computer using a Microsoft Windows operating system in conjunction with an Intel or Intel-Compatible micro-processor.

c. PCs made by other manufacturers were not wholly compatible with the IBM PC.

d. Most of today's personal computers have evolved from the original PC-compatibles.

2. A 2-in-1 PC is in two parts, a fully functional notebook PC and ..... .

a. a slate
b. a port hole
c. a runway
d. a docking station

3. We may infer from the text that the docking station ..... .

a. is a device into which a notebook PC is inserted to give the notebook PC expanded capabilities
b. is burdensome and reduces the capabilities of the PC
c. can give the notebook PC, the configuration of a desktop PC but does not allow the expanded features of a desktop
d. may not provide a direct link to the corporate network

4. Which statement is NOT true?

a. Personal digital assistants are handheld personal computers that support a variety of personal information systems.
b. Slate PCs enable input via an electronic pen in conjunction with a pressure-sensitive monitor/drawing surface.
c. Network computers have high permanent storage capacity and are designed to work with a server computer.
d. Network computers, in contrast to the conventional PCs, do not function unless they are connected to servers.

5. We may conclude from the text that a workstation is ..... .

a. a large computer that can service many users simultaneously in support of enterprise-wide applications
b. a high-performance single-user computer system with sophisticated input/output devices that can be easily networked with other workstations or computers
c. a televisionlike display for soft-copy output in a computer system
d. an output peripheral device that can project the screen image on a large screen for group viewing

B. Write the answers to the following questions in the spaces provided.

1. What determines the power of a computer?

.....

.....

2. What controls the hardware and software activities on Wintel PCs?

.....

.....

3. Explain the platform.

.....

.....

4. What distinguishes the port replicator from the docking station?

.....

.....

5. What are ports?

.....

.....

* * *

Section Three: Translation Activities

A. Translate the following passage into Persian.

Groceries Online

'Smart Shopping for Busy People' is Peapod's slogan. Peapod, a grocer on the Internet, has made life easier for a great many people. Although Peapod is not yet national in scope, it is giving us a glimpse into the future of retailing–the *virtual store.* Peapod is a pioneer in a rapidly expanding industry that is dedicated to enabling us to buy almost anything from our PCs. Peapod subscribers go shopping at the virtual grocery strore by logging on to the Peapod site on the Internet. Once online, they can shop interactively for grocery items, including fresh produce, deli, bakery, meat, and frozen products. Rather than running from aisle to aisle, you simply point and click around the screen for the items you want.

Peapod's online shopping system is linked directly to its partner stores' computer systems (for example, Safeway in San Francisco and Jewel in Chicago). When you send your shopping list to Peapod, an order is

transmitted to the nearest partner store. A professionally trained shopper takes your order, grabs a shopping cart, and does your shopping for you. The professional shopper takes a fraction of the time you would take because the list is ordered by aisle and the shopper knows exactly what to get. You can redeem your coupons when the shopper/delivery person arrives with your food. This is one of many interactive online approaches to shopping that can help take the hassle out of shopping.

B. Find the Persian equivalents of the following terms and expressions and write them in the spaces provided.

1. competency .....
2. computer-aided design .....
3. configure .....
4. controversial .....
5. desktop PC .....
6. docking station .....
7. footprint .....
8. handheld PC .....
9. information society .....
10. information technology .....
11. knowledge worker .....
12. laptop PC .....
13. master file .....
14. network computer .....
15. notebook PC .....
16. operating system .....
17. palmtop PC .....
18. pen-based PC .....
19. personal digital assistant .....
20. personal information management .....
21. pocket PC .....
22. point-and-draw device .....
23. port replication .....
24. pressure-sensitive display .....
25. record .....
26. reduced-key keyboard .....
27. representation .....
28. resolution .....
29. slate PC .....
30. speech-recognition software .....
31. stand-alone PC .....
32. stylus .....
33. tower PC .....
34. united parcel device .....
35. Web phone .....
36. workstation .....