Unit 3

Hardware and software

Hardware and software

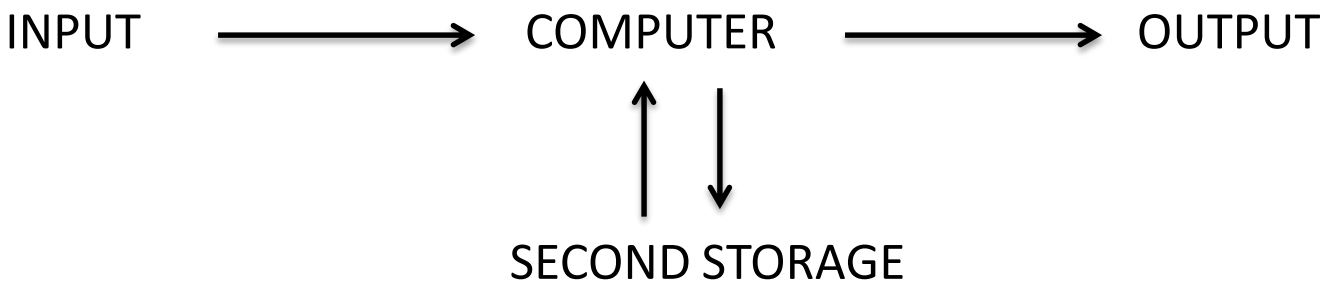
ابداع شده اند

- In order to use computers effectively to problems in our environment, computer systems are devised.

اشاره کردن، دلالت کردن

A `system` implies a good mixture of integrated parts together to from a useful whole. Computer systems may be discussed in two parts.

- The first part is hardware – the physical, electronic and electro – mechanical devices that are thought of and recognized as `computers` . The second part is software – the programs that control and coordinate the activities of the computer hardware and that direct the processing of data.



Hardware and software

- Figure above shows diagrammatically the basic components of computer hardware joined together in a computer system. The centerpiece is called either the computer, the processor, or usually the Central Processing Unit (CPU). The term `Computer` usually to those parts of the hardware in which calculations and other data manipulations are performed and to internal memory in which data and instructions are stored during the actual execution of programs. The various peripherals, which include input and/or output devices, various secondary memory devices and so on, are attached to the CPU.

لوازم جانبی

Hardware and software

- Computer software can be divided into two very broad categories – systems software and applications software. The former is often simply referred to as `systems`. These, when brought into internal memory, direct the computer to perform tasks. The latter may be provided along with the hardware by a system supplier as part of a computer product designed to answer a specific need in certain areas. These complete hardware/software products are called Turnkey systems.

سیستم های آماده برای استفاده

Hardware and software

- The success or failure of any computer depends on the skill with which the hardware and software components are selected and blended. A poorly chosen system can be a monstrosity incapable of performing the tasks for which it was originally acquired.

هیولایی ناتوان

Exercises 1: understanding the passage

- **Indicate whether the following ideas are stated or not stated (S/NS) in the text.**

1. A system implies a good mixture of parts working together . ✓

2. Input and output devices operate more slowly than the decision-making devices.

3. The control unit and the arithmetic-logical unit are part of the processor.

4. The `computer` is the hardware. ✓

5. software is the programs on cards, tapes and disks.

Exercises 1: understanding the passage

- **Indicate whether the following ideas are stated or not stated (S/NS) in the text.**

6. The processor is usually referred to as the CPU. ✓

7. The word `computer` means the processor and the internal memory. ✓

8. Systems software is usually referred to as programs.

9. Complete hardware/software products are called Turnkey systems. ✓

10. Computers process specially prepared items of information.

Exercises 2: Contextual reference

- **Look back at the text and find out what the words in bold typeface refer to.**

1. Computer systems may be discussed **in two parts**

2. **that** are thought of

3. **that** control and coordinate

4. and **that** direct the processing

5.in **which** calculations

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Exercises 3:Understanding words

- **Refer back to the text and find synonyms for the following words.**

1. developed **devised**
2. infers **implies**
3. joined **integrated**
4. Chosen **selected**

Exercises 3:Understanding words

- **Now refer back to the text and find antonyms for the following words.**

5. separated **integrated**

6. useless **useful**

7. narrow **broad**

8. well **poorly**

Exercises 4:Word forms

- **First choose the appropriate form of the words to complete the sentences. Then check the differences of meaning in your dictionary.**

1. integration integrate, integrated, integrating

a. Some computer manufacturers have. **integrated** ..both input and output devices into one terminal.

b. The success of any computer system depends on the . **integration** ..all its parts to form a useful whole.

c. **integrating** input and output devices into one peripheral has reduced the area needed for a computer installation.

Exercises 4:Word forms

- **First choose the appropriate form of the words to complete the sentences. Then check the differences of meaning in your dictionary.**
- 2. coordination, coordinate, coordinated, coordinating, coordinator

a. The control unit of a processor.. **coordinates** ıe flow of information between the arithmetic unit and the memory.

b. **coordinating** ...the many activities in a computer department is the job of the department head.

c. The .. **coordinator** ..of a language institute has assistants to help him and may have access to a computer to help him with the.. **coordination** ..of the many programs, timetables, space and student results.

Exercises 4:Word forms

- **First choose the appropriate form of the words to complete the sentences. Then check the differences of meaning in your dictionary.**
- 3. diagram, diagrammatic, diagrammatically, diagrammed

a. Very often manufacturers provide…. **diagrammatic** epresentations of the internal workings of a computer.

b. A. **digram** a drawing that shows how something is arranged rather than what it actually looks like.

c. A few ideas have been… **diagrammatic** ……for you in this book.

Exercises 4:Word forms

- **First choose the appropriate form of the words to complete the sentences. Then check the differences of meaning in your dictionary.**
- 4. interchange, interchangeable, interchangeably, interchanged

a. The words `arithmetic-logic` and 1arthmetic-logical` can be used…….. .

b. There is often an……..of ideas among computer scientists.

c. There is a big difference between an input and output. These can not be…….. .

Exercises 4: Word forms

- **First choose the appropriate form of the words to complete the sentences. Then check the differences of meaning in your dictionary**
- 5. division, divide, divisible

a. It is often difficult for computer science students to ……..their time up proportionally between studying and programming.

b. Are all numbers……by three?

c. There is always a……of labor within a computer company.

Structure 3:Word formation - prefixes

- **We have already seen how suffixes change the part of speech of a word. Let us now consider some prefixes, their usual meanings and how the change the meanings of English words.**

  - **Negative and positive** : (un- , non- , in- , dis- , re-)
  - **Size** : (semi- , mini- , micro-)
  - **Location** : (inter- , super- , trans- , ex- , extra- , mid-)
  - **Time and order** : (pre- , ante- , fore , post-)
  - **Number** : (mono- , bi- , hex- , oct- , multi-)

Exercises 1

- **Study these tables and try to find additional examples. Use your dictionary if necessary.**

Negative and positive prefixes			
	prefix	meaning	examples
Negative	Un- , in- ,	not ,	unmagnetized , unpunched
	Im- , il- ,	not good enough	incomplete , impossible
	Ir-	not connected with	illegal , irregular , irrelevant
	non-	Bad , wrong	non-programmable , non-impact
	mis-	opposite feeling , opposite action	mispronounce , mislead , mislay , misunderstand
	dis-	against	disagree , disconnect

Exercises 1

Negative and positive prefixes			
	prefix	meaning	examples
Negative	anti-		antisocial
	de-	reduce , reverse	demagnetize , decode
	under-	too little	underestimate
positive	re-	do again	reorganize
	over-	too much	overheat

Exercises 1

Prefixes of size		
prefix	meaning	examples
semi-	half , partly	semiconductor
equi-	equal	equidistant
maxi-	big	maxicomputer
micro-	small	microcomputer
mini-	little	minicomputer
macro-	large	macroeconomics
mega-	large	megabyte

Exercises 1

Prefixes of location		
prefix	meaning	examples
ante- , pre-	before	antecedent , prefix
prime-	first	primary , primitive
post-	after	postdated
retro-	backward	retroactive

Exercises 1

Prefixes of time and order		
prefix	meaning	examples
Semi-	half	semicircle
mono-	one	monochromatic
bi-	two	binary
tri-	three	triangle
quad-	four	quadruple
Penta-	five	pentagon

Exercises 1

Prefixes of time and order		
prefix	meaning	examples
Hex-	six	Hexadecimal
Ceptefli-	seven	September
Oct-	eight	Octal
Dec-	ten	Decimal
Multi-	many	Multiprogramming , multiplexer

Exercises 1

Other Prefixes		
prefix	meaning	examples
pro-	For	Program
auto-	Self	Automatic
co-	Together	Coordinate
neo-	New	Neoclassical
pan-	all	Pan- American

Exercises 2

Fill in the blanks with the correct prefix from the following list. Use the glossary at the end of the book to help you.

multi-	deci-	sub-	inter-
semi-	mono-	mega-	auto-
mini-	de-	inter-	prim-

1. ….. **mega** .byte means one million bytes.

2. …. **multi** .. plexing is when many electrical signals are combined and carried on only one optical link.

3. Blocks are separated from each other by marks called…. **inter** …block gaps.

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4. The number system we use in everyday life is the.. **deci** .mal system which has a base of 10.
5. CRT terminals are very useful… **inter** active devices for use in airline reservations.
6. Some screens are… **mono** .chromatic whereas others produce multicolor pictorial graphics.
7. The complete description of the logical structure of data is called the schema and the description of the parts, the **sub** .schema.

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8. The main storage locations of a computer are called its……. ary storage.
9. The small ferrite rings called cores have two states: they can be either magnetized or…….magnetized.
10. The introduction of chips or…….conductor memories made it possible to reduce the size of the computer.

Exercises 3

- **For each prefixes in structure 3 find out at least 4 words with it in the dictionary.**