

Chapter 2 Software

Unit 2.2 Operating System

备课时间：2019-09-27

词汇与词组

1. An operating system (OS) is the software that manages the sharing of the resources of a computer.

➤ Operating system 操作系统

➤ Sharing of resources ... 资源共享

● 冠词用 a 还是 an?

单元音			
[i:]	[ɪ]	[e]	[æ]
[ɑ:]	[ɒ]	[ɔ:]	[ʊ]
[u:]	[ʌ]	[ɜ:]	[ə]

辅音			
[p]	[b]	[t]	[d]
[k]	[g]	[f]	[v]
[s]	[z]	[θ]	[ð]
[ʃ]	[ʒ]	[tʃ]	[dʒ]
[tr]	[dr]	[ts]	[dz]
[m]	[n]	[ŋ]	[h]
[l]	[r]	[w]	[j]

双元音			
[eɪ]	[aɪ]	[ɔɪ]	[əʊ]
[aʊ]	[ɪə]	[eə]	[ʊə]

a+辅音开头的单词 an+元音开头的单词

辅音前用 a 的例子

1) a book, /bʊk/

2) a student, /'stju:dnt/

3) a school / university / useful, /,ju:nɪ'vɜ:səti/

4) a house, /haʊs/

5) a magazine, /,mægə'zi:n/

元音前用 an 的例子

1) an egg, /eg/

2) an apple, /'æpl/

3) an object, /'ɒbdʒɪkt/

4) an idea, /aɪ'diə/

5) an ugly thing, /'ʌgli/

6) an hour / honest, /'aʊə(r)/ /'ɒnɪst/

7) an SOS, /'es 'əʊ 'es/

2. An operating system processes **raw** system data and user input, and responds by allocating and managing tasks and internal system resources as a service to users and programs of the system.

➤ **Raw** 原始的，未加工过的

raw material

➤ **Mature** 成熟的

mature market economy

➤ **Developed** 发达的；成熟的

developed country 发达国家

developing country 发展中国家

➤ **Adult** 成年的；成熟的

adult education

3. At the foundation of all system software, an operating system performs basic tasks such as controlling and allocating memory, **prioritizing** system requests, controlling input and output devices, **facilitating** networking and managing file systems.

➤ **Prioritize** /praɪ'ɒrətaɪz/ 按优先顺序列出, 确定 (任务) 优先顺序; 优先处理, 优先考虑

➤ **Priority** 优先级

Different task have different **priority**.

每个任务都有互不相同的优先级。

➤ **Facilitate** /fə'sɪlɪteɪt/ 促进; 辅助

➤ **Facility** 设施; 设备; 便利; 容易

4. Most operating systems **come with** an application that provides a **user interface** for managing the operating system, such as a **command line interpreter** or **graphical user interface**.

➤ **Come with** 与...一起给出; 伴随

1) **Come Away With Me** 远走高飞 (Norah Jones)

2) Would you like to **come with** us?

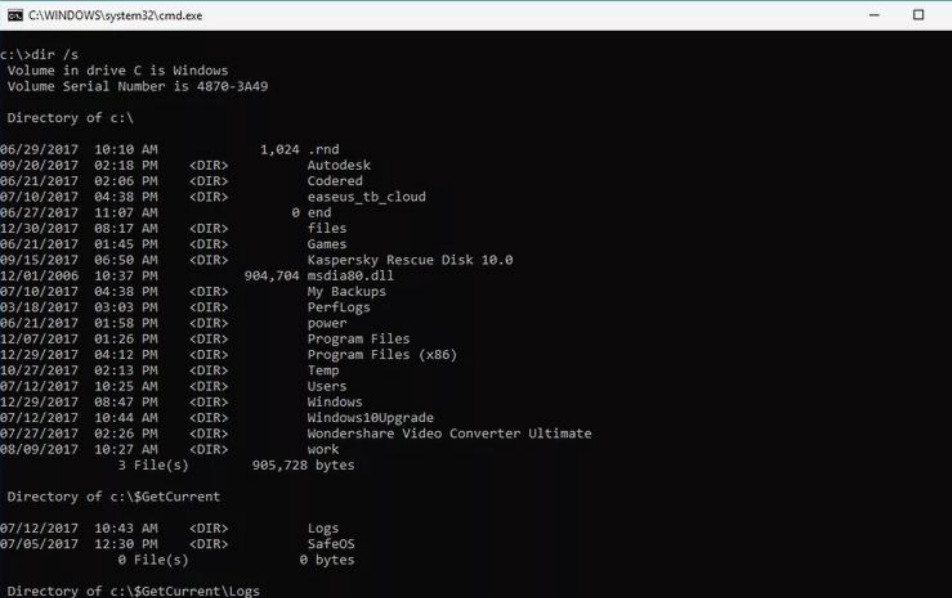
你愿意和我们一起去吗?。

➤ **user interface** 用户界面

1) The **user interface** of a particular piece of computer software is its presentation on the screen and

- 2) Yes, it is a class, not an **interface**.
- 3) A class is a collection of fields and methods that operate on fields. An **interface** has fully abstract methods i.e. methods with nobody.
- 4) An **interface** is syntactically similar to the class but there is a major difference between class and **interface** that is a class can be instantiated, but an **interface** can never be instantiated.

➤ command line interpreter 命令行解释器



```
C:\WINDOWS\system32\cmd.exe
c:\>dir /s
Volume in drive C is Windows
Volume Serial Number is 4870-3A49

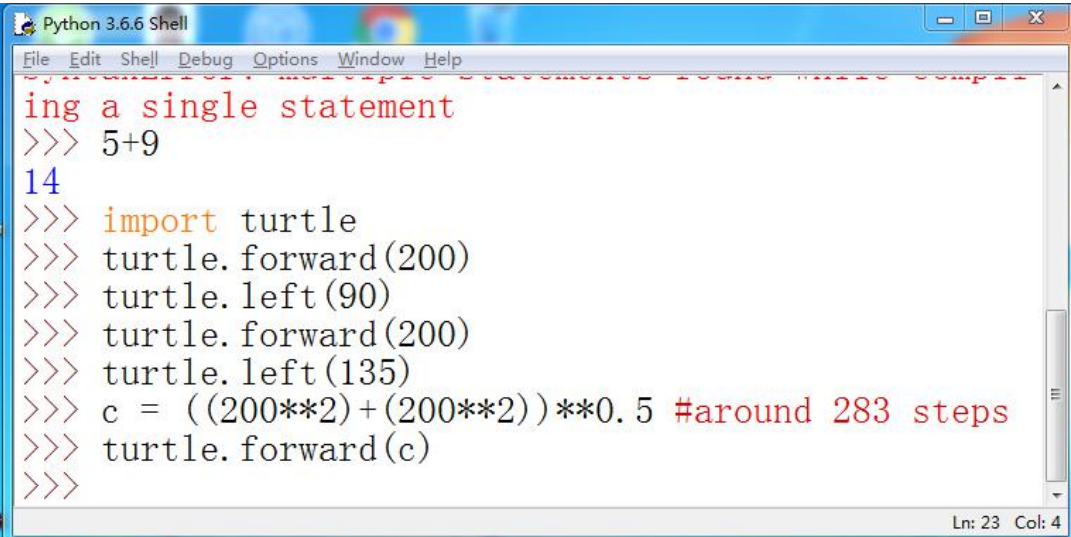
Directory of c:\

06/29/2017  10:10 AM                1,024 .rnd
09/20/2017  02:18 PM                <DIR> Autodesk
06/21/2017  02:06 PM                <DIR> Codored
07/10/2017  04:38 PM                <DIR> easeus_tb_cloud
06/27/2017  11:07 AM                    0 end
12/30/2017  08:17 AM                <DIR> files
06/21/2017  01:45 PM                <DIR> Games
09/15/2017  06:50 AM                <DIR> Kaspersky Rescue Disk 10.0
12/01/2006  10:37 PM            904,704 msdia80.dll
07/10/2017  04:38 PM                <DIR> My Backups
03/18/2017  03:03 PM                <DIR> PerfLogs
06/21/2017  01:58 PM                <DIR> power
12/07/2017  01:26 PM                <DIR> Program Files
12/29/2017  04:12 PM                <DIR> Program Files (x86)
10/27/2017  02:13 PM                <DIR> Temp
07/12/2017  10:25 AM                <DIR> Users
12/29/2017  08:47 PM                <DIR> Windows
07/12/2017  10:44 AM                <DIR> Windows10Upgrade
07/27/2017  02:26 PM                <DIR> Wondershare Video Converter Ultimate
08/09/2017  10:27 AM                <DIR> work
                                3 File(s)            905,728 bytes

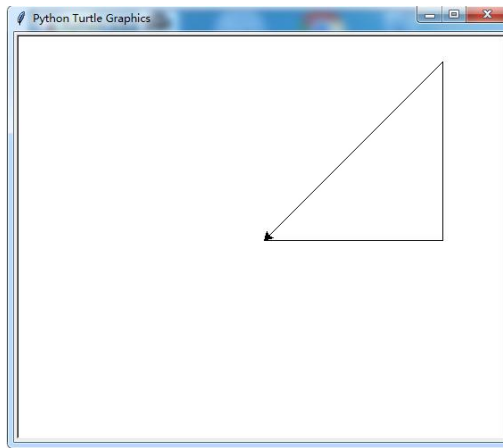
Directory of c:\$GetCurrent

07/12/2017  10:43 AM                <DIR> Logs
07/05/2017  12:30 PM                <DIR> SafeOS
                                0 File(s)            0 bytes

Directory of c:\$GetCurrent\Log
```



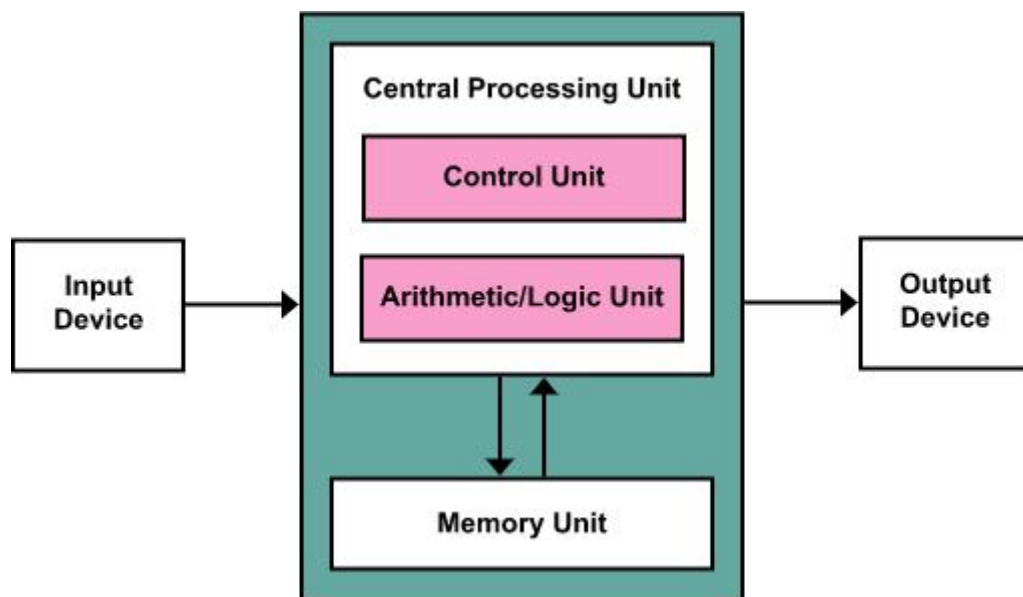
```
Python 3.6.6 Shell
File Edit Shell Debug Options Window Help
ing a single statement
>>> 5+9
14
>>> import turtle
>>> turtle.forward(200)
>>> turtle.left(90)
>>> turtle.forward(200)
>>> turtle.left(135)
>>> c = ((200**2)+(200**2))**0.5 #around 283 steps
>>> turtle.forward(c)
>>>
Ln: 23 Col: 4
```



➤ graphical user interface 图形用户界面

5. As long as a **Von Neumann architecture** is used to build computers, only one process per CPU can be run at a time.

➤ **Von Neumann architecture** 冯诺依曼体系结构



- 1) A processing unit that contains an arithmetic logic unit and processor registers
- 2) A control unit that contains an instruction register and program counter
- 3) Memory that stores data and instructions
- 4) External mass storage
- 5) Input and output mechanisms

6. Modern operating systems enable **concurrent** execution of many processes at once via **multitasking** even with one CPU.

➤ **Concurrent: existing, happening, or done at the same time. 并发**

1) In **parallel** computing, a computational task is typically **broken down into** several, often many, very similar **sub-tasks** that can be processed independently and whose results are combined afterwards, upon completion.

并行计算

2) In contrast, in **concurrent** computing, the various processes often do **not** address **related** tasks; when they do, as is typical in distributed computing, the separate tasks may have a varied nature and often require some **inter-process communication** during execution.

➤ **multitasking 多任务处理**

1) **Multitasking** is the concurrent execution of multiple tasks (also known as processes) over a certain period of time.

2) New tasks can **interrupt** already started ones before they finish, instead of waiting for them to end.

3) As a result, a computer executes segments of multiple tasks in an **interleaved** manner, while the tasks share common processing resources such as central CPUs and main memory.

7. Since most computers contain one processor with one **core**, **multitasking** is done by simply switching processes quickly.

➤ Core 核心

A **multi-core** processor is a computer processor integrated circuit with two or more **separate processing units**, called **cores**, each of which reads and executes program instructions, as if the computer had several processors.

8. Depending on the operating system, as more processes run, either each **time slice** will become smaller or there will be longer delay before each process is given a chance to run.

➤ **time slice** 时间片

1) The **period of time** for which a process is allowed to run in a preemptive multitasking system is generally called the **time slice**.

2) A scheduler is run once every **time slice** to choose the next process to run.

9. Most operating systems allow a process to be **assigned** a priority which affects its allocation of CPU time.

➤ Assign 【动词】 分配；指派；赋值

➤ Assignment 【名词】 分配；任务；作业；功课

10. In many systems there is a **background** process, such as the **System Idle Process** in Windows, which will run when no other process is waiting for the CPU.

- background 后台的
- System Idle Process 系统空闲进程
- idle 空闲的；懒惰的

An idle man only enjoys playing and pleasures.
一个懒惰的人只会玩耍和寻乐。

题鹤林寺僧舍——[唐] 李涉

终日昏昏醉梦间，忽闻春尽强登山。
因过竹院逢僧话，偷得浮生半日闲。

To Smell the Flowers 偷得浮生半日闲，轻松一下

11. This activity, usually referred to as **virtual memory management**, increases the amount of memory available for each process by making the disk storage seem like main memory.

- **Virtual memory management** 虚拟内存管理

12. There is a speed **penalty associated** with using disks or other slower storage as memory.

- **Penalty** /'penəlti/ 损失；罚款，罚金；处罚
- **penalty function** 补偿函数

➤ **associated** 关联的；联合的

➤ **Associated Press** 美国联合通讯社，是由各成员单位联合组成的合作型机构，简称美联社，是美国最大的通讯社，也是世界上规模最大的新闻采访机构之一。

13. This can happen either because one process requires a large amount of RAM or because two or more processes **compete for** a larger amount of memory than is available.

➤ **compete** /kəm'pi:t/ **for** 竞争

The world is a **competitive** world. We will have to **compete for** jobs, business, etc.

这是个**竞争**的世界。我们不得不在工作、事业等方面**竞争**。

➤ **competitive** /kəm'petətɪv/ **竞争的**

➤ **etc.** 等等 (et cetera, 等于 and so on)

14. This then **leads to** constant transfer of each process's data to slower storage.

➤ **lead to** 导致；通向

Their disagreements **lead to** violence on the streets of Gaza. 他们的分歧导致了加沙街头的暴力活动。

➤ **result in** 导致；引起

The system will not be very scalable, which will result in a poor application.

15. Modern file systems comprise a hierarchy of **directories**.

➤ **Directory** (文件)目录

16. UNIX **demarcates** its path components with a **slash (/)**, a **convention** followed by operating systems that **emulated** it or at least its concept of hierarchical directories, such as Linux, Amiga OS and Mac OS X.

➤ **demarcate** /'di : ma : keit/ 标定

If you **demarcate** something, you establish its **boundaries** or **limits**.

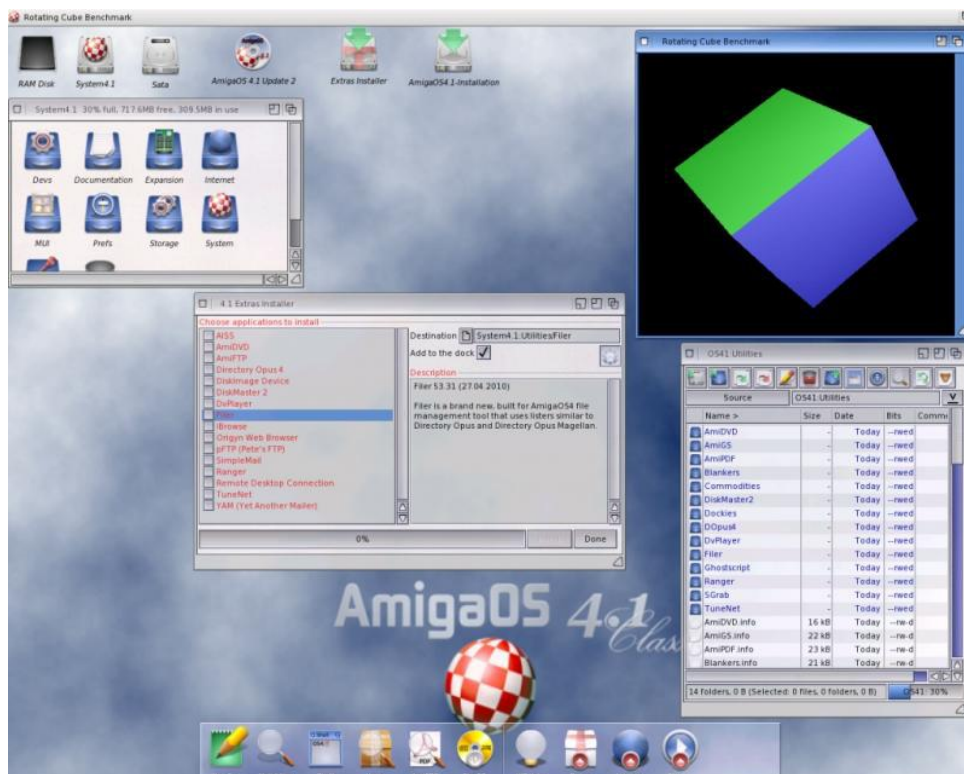
➤ **path component** 路径成分

➤ **slash** 斜杠(/)

➤ **backslash** 反斜杠(\)

➤ **convention** 约定；规约

➤ **emulate** /'emjuleit/ 仿效





17. **MS-DOS** also emulated this feature, but had already also adopted the **CP/M** convention of using slashes for additional options to commands, so instead used the backslash(\) as its component separator.

- **MS-DOS** 微软磁盘操作系统 (Microsoft disk operating system)
- **CP/M**, originally standing for **Control Program/Monitor** and later **Control Program for Microcomputers**, is a mass-market operating system created in 1974 for Intel 8080/85-based microcomputers by Gary Kildall of Digital Research, Inc.
- **mass-market** 面向大众的，大众市场的
- **Inc.** = Incorporated, **Corp.** = Corporation 都指“股份有限公司”
- **Co., Ltd.** = Company Limited 指“有限责任公司”

18. Microsoft Windows continues with this convention; **Versions** of **Mac OS** prior to **OS X** use a colon (:) for a path separator. **RISC OS** uses a period (.).

➤ **Mac: Macintosh**

➤ **OS X** was originally built from **NeXTSTEP**, an operating system designed by **NeXT**, which Apple acquired when Steve Jobs returned to Apple in 1997.

➤ **RISC OS** is a computer operating system designed in Cambridge, England by **Acorn**. First released in 1987, its origins can be traced back to the original team that developed the Arm microprocessor.

➤ **RISC** Reduced instruction set computer

➤ **CISC** Complex instruction set computer

➤ **Acorn** 计算机公司是现在著名的 ARM 公司的前身

➤ **Acorn** 创立于 1978 年，公司位于英格兰的剑桥，它在 80 年代 PC 革命初期的贡献，相当于美国的“苹果公司”

➤ 1991 年，**Acorn** 计算机公司剥离了 **ARM** 部门，成立了 ARM 公司

19. UNIX and UNIX-like operating systems allow for any character in file names other than the slash (including **line feed** (LF) and other **control characters**).

➤ **line feed (LF)**

1) Text files created on DOS/Windows machines have different **line endings** than files created on Unix/Linux.

2) DOS uses **carriage return and line feed ("r\n")** as a line ending, which **UNIX uses just line feed ("n")**.

➤ **control character:** In computing and telecommunication, a **control character** or **non-printing character** (NPC) is a **code point (a number)** in a character set, that does **not** represent a written symbol.

Keys	Dec	Hex	Abbr.	Name	Type	Description
[Ctrl] @	0	00	NUL	Null		A control character used to accomplish media-fill or time-fill. Null characters may be inserted into or removed from a stream of data without affecting the information content of that stream. But then the addition or removal of these characters may affect the information layout and/or the control of equipment.
[Ctrl] A	1	01	STX	<u>S</u> tart of <u>H</u> header	TC	A transmission control character used as the first character of a heading of an information message.
[Ctrl] B	2	02	SOT	<u>S</u> tart of <u>T</u> ext	TC	A transmission control character which precedes a text and which is used to terminate a heading.
[Ctrl] C	3	03	ETX	<u>E</u> nd of <u>T</u> ext	TC	A transmission control character which terminates a text.
[Ctrl] D	4	04	EOT	<u>E</u> nd of <u>T</u> ransmission	TC	A transmission control character used to indicate the conclusion of the transmission of one or more texts..
[Ctrl] E	5	05	ENQ	<u>E</u> nquiry	TC	A transmission control character used as a request for a response from a remote station; the response may include station identification and/or station status. When a "Who are you" function is required on the general switched transmission network, the first use of ENQ after the connection is established shall have the meaning "Who are you" (station identification). Subsequent use of ENQ may, or may not, include the function "Who are you", as determined by agreement.
[Ctrl] F	6	06	ACK	<u>A</u> cknowledge	TC	A transmission control character transmitted by a receiver as an affirmative response to the sender.

[Ctrl] G	7	07	BEL	<u>B</u> ell		A control character that is used when there is a need to call for attention; it may control alarm or attention devices.
[Ctrl] H	8	08	BS	<u>B</u> ack <u>S</u> pace	FE	A format effector which moves the active position one character position backwards on the same line.
[Ctrl] I	9	09	HT	<u>H</u> orizontal <u>T</u> abulation	FE	A format effector which advances the active position to the next pre-determined character position on the same line.
[Ctrl] J	10	0A	LF	<u>L</u> ine <u>F</u> eed	FE	A format effector which advances the active position to the same character position of the next line.
[Ctrl] K	11	0B	VT	<u>V</u> ertical <u>T</u> abulation	FE	A format effector which advances the active position to the same character position on the next pre-determined line.
[Ctrl] L	12	0C	FF	<u>F</u> orm <u>F</u> eed	FE	A format effector which advances the active position to the same character position on a pre-determined line of the next form or page.
[Ctrl] M	13	0D	CR	<u>C</u> arriage <u>R</u> eturn	FE	A format effector which moves the active position to the first character position on the same line.
[Ctrl] N	14	0E	SO	<u>S</u> hift <u>O</u> ut		A control character which is used in conjunction with SHIFT IN and ESCAPE to extend the graphic character set of the code. It may alter the meaning of octets 33 - 126 (dec.). The effect of this character when using code extension techniques is described in International Standard ISO 2022.
[Ctrl] O	15	0F	SI	<u>S</u> hift <u>I</u> n		A control character which is used in conjunction with SHIFT OUT and ESCAPE to extend the graphic character set of the code. It may reinstate the standard meanings of the octets which follow it. The effect of this character when using code extension techniques is described in International Standard ISO 2022.
[Ctrl] P	16	10	DLE	<u>D</u> ata <u>L</u> ink <u>E</u> scape	TC	A transmission control character which will change the meaning of a limited number of contiguously following characters. Its is used exclusively to provide supplementary data transmission control functions. Only graphic characters and transmission control characters can be used in DLE sequences.
[Ctrl] Q	17	11	DC1	<u>D</u> evice <u>C</u> ontrol <u>1</u> (XON)		A device control character which is primarily intended for turning on or starting an ancillary device. If it is not required for this purpose, it may be used to restore a device to the basic mode of operation (see also DC2 and DC3), or for any other device control function not provided by other DCs.
[Ctrl] R	18	12	DC2	<u>D</u> evice <u>C</u> ontrol <u>2</u>		A device control character which is primarily intended for turning on or starting an ancillary device. If it is not required for this purpose, it may be used to set a device to a special mode of operation (in which case DC1 is used to restore normal operation), or for any other device control function not provided by other DCs.
[Ctrl] S	19	13	DC3	<u>D</u> evice <u>C</u> ontrol <u>3</u> (XOFF)		A device control character which is primarily intended for turning off or stopping an ancillary device. This function may be a secondary level stop, for example, wait, pause, stand-by or halt (in which case DC1 is used to restore

normal operation).

If it is not required for this purpose, it may be used for any other device control function not provided by other DCs.

[Ctrl] T	20	14	DC4	<u>D</u> evice <u>C</u> ontrol <u>4</u>		A device control character which is primarily intended for turning off, stopping or interrupting an ancillary device. If it is not required for this purpose, it may be used for any other device control function not provided by other DCs.
[Ctrl] U	21	15	NAK	<u>N</u> egative <u>a</u> cknowledge	TC	A transmission control character transmitted by a receiver as a negative response to the sender.
[Ctrl] V	22	16	SYN	<u>S</u> ynchronous Idle	TC	A transmission control character used by a synchronous transmission system in the absence of any other character (idle condition) to provide a signal from which synchronism may be achieved or retained between data terminal equipment.
[Ctrl] W	23	17	ETB	<u>E</u> nd of <u>T</u> ransmission <u>B</u> lock	TC	A transmission control character used to indicate the end of a transmission block of data where data is divided into such blocks for transmission purposes.
[Ctrl] X	24	18	CAN	<u>C</u> ancel		A character, or the first character of a sequence, indicating that the data preceding it is in error. As a result, this data is to be ignored. The specific meaning of this character must be defined for each application and/or between sender and recipient.
[Ctrl] Y	25	19	EM	<u>E</u> nd of <u>M</u> edium		A control character that may be used to identify the physical end of a medium, or the end of the used portion of a medium, or the end of the wanted portion of data recorded on a medium. The position of this character does not necessarily correspond to the physical end of the medium.
[Ctrl] Z	26	1A	SUB	<u>S</u> ubstitute		A control character used in the place of a character that has been found to be invalid or in error. SUB is intended to be introduced by automatic means.
[Ctrl] [27	1B	ESC	<u>E</u> scape		A control character which is used to provide additional control functions. It alters the meaning of a limited number of contiguously following bit combinations. The use of this character is specified in International Standard ISO 2022.
[Ctrl] \	28	1C	FS	<u>F</u> ile <u>S</u> eparator	IS	A control character used to separate and qualify data logically; its specific meaning has to be specified for each application. If this character is used in hierarchical order, it delimits a data item called a file
[Ctrl]]	29	1D	GS	<u>G</u> roup <u>S</u> eparator	IS	A control character used to separate and qualify data logically; its specific meaning has to be specified for each application. If this character is used in hierarchical order, it delimits a data item called a <i>group</i> .
[Ctrl] ^	30	1E	RS	<u>R</u> ecord <u>S</u> eparator	IS	A control character used to separate and qualify data logically; its specific meaning has to be specified for each application. If this character is used in hierarchical order, it delimits a data item called a <i>record</i> .

[Ctrl] _	31	1F	US	Unit Separator	IS	A control character used to separate and qualify data logically; its specific meaning has to be specified for each application. If this character is used in hierarchical order, it delimits a data item called a <i>unit</i> .
	127	7F	DEL	Delete		Delete

20. UNIX file names are **case sensitive**, which allows multiple files to be created with names that differ only in **case**.

- **case sensitive** 大小写敏感的
- **Uppercase** 大写的
- **Lowercase** 小写的
- **case insensitive** 大小写不敏感的
- **capital letter** 大写字母

Your password must contain at least one **capital letter**.

您的密码必须至少包含一个大写字母。

21. Windows also has a larger set of **punctuation** characters that are not allowed in file names.

- **punctuation** /ˌpʌŋktʃuˈeɪʃn/ 标点符号

22. File systems may provide **journaling**, which provides safe recovery in the event of a system **crash**.

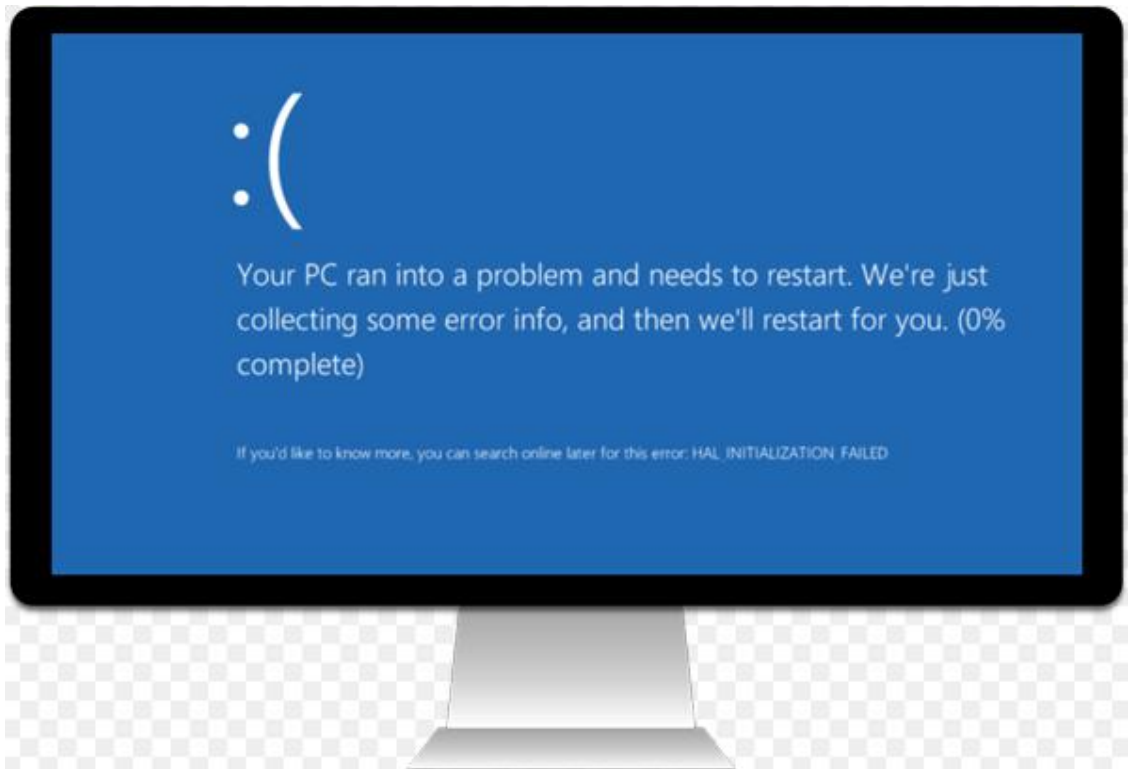
- **journal** 日志；期刊，杂志

The work is published this week in the **journal** Science.

这项工作发表在本周出版的"科学"杂志上。

A **journaling** file system is a file system that keeps track of **changes not yet** committed to the file system's main part by recording the **intentions** of such changes in a **data structure** known as a "journal", which is usually a **circular log**.

➤ **Crash (机器、系统的) 崩溃**



23. In the event of a crash, the system can recover to a **consistent** state by **replaying** a portion of the journal.

➤ **consistent** 一致的

➤ **Replay** 重播；重演；重新执行

24. In contrast, non-journaled file systems typically need to be examined in their **entirety** by a **utility** such as fsck or chkdsk.

➤ **entirety** /In'taɪərəti/ 整体；全部

➤ **utility** 实用工具

- **fsck** stands for "**file system consistency check**". On most systems, fsck is run at boot time if certain conditions are detected. Usually, these conditions are:
 - 1) A file system is marked as "dirty" — its written state is inconsistent with data that was scheduled to be written;
or,
 - 2) A file system has been mounted a set number of times without being checked.
- The **chkdsk** command opens a utility that **checks** the computer's **hard drive** status for any cross-linked files or other errors.

25. **Log-structured file systems** and **ZFS** also differ from traditional journaled file systems in that they avoid inconsistencies by always writing new copies of the data, **eschewing** in-place updates.

- **ZFS**: Zettabyte File System

To put it another way, a single zettabyte equals 1,073,741,824 terabytes!

1TB=2⁴⁰ 字节; 1ZB=2⁷⁰ 字节

- **eschew** /ɪs'tʃu : / 避免

- **Log-structured file systems** 日志结构文件系统

Log-Structured File System



LFS turns the entire file system into a log

26. Many **Linux distributions** support some or all of ext2, ext3, ...

- **Linux distribution** : Linux 发行版，就是 Linux 核心再加上外围的实用程序组成的一个大软件包而已，其中 Linux 代表操作系统内核
- Linux 的发行版本 SUSE、RedHat、Fedora、Debian、Ubuntu、CentOS、Gentoo

27. Most current operating systems are capable of using the **TCP/IP networking protocols.**

➤ **TCP/IP 传输控制协议 / 网际协议** (Transmission Control Protocol / Internet Protocol)。

- 1) 供已连接因特网的计算机进行通信的通信协议。
- 2) 定义了电子设备 (比如计算机) 如何连入因特网, 以及数据如何在它们之间传输的标准。

➤ 在 TCP/IP 中包含一系列用于处理数据通信的协议:

- 1) TCP (传输控制协议) - 应用程序之间通信
- 2) UDP (用户数据包协议) - 应用程序之间的简单通信
- 3) IP (网际协议) - 计算机之间的通信
- 4) ICMP (因特网消息控制协议) - 针对错误和状态
- 5) DHCP (动态主机配置协议) - 针对动态寻址

➤ **TCP/IP 意味着 TCP 和 IP 在一起协同工作。**

- 1) TCP 负责应用软件 (比如你的浏览器) 和网络软件之间的通信。
- 2) IP 负责计算机之间的通信。
- 3) TCP 负责将数据分割并装入 IP 包, 然后在它们到达的时候重新组合它们。
- 4) IP 负责将包发送至接受者。

➤ **Protocol** A protocol is a set of rules for exchanging information between computers.

28. Many operating systems also support one or more **vendor-specific legacy** networking protocols as well.

➤ **vendor-specific** 厂商特定的

➤ **Legacy** 遗产；遗留的

a **legacy system**

29. Many operating systems include some level of **security**.

➤ **Security** 安全

The **Security Commission** investigates breaches of **security**.

安全委员会对违反安全规定的事项进行调查。



National Security Agency | Central Security Service

Defending our Nation. Securing the Future.

➤ **secure** 安全的；无虑的；有把握的；稳当的

Analysis result shows that the mechanism is efficient and **secure**. 分析结果表明，该机制是高效且安全的。

➤ **Safety** is the state of being safe from harm or danger. 安全；平安

I tremble for your **safety**.

我很担心你的安全。



国家煤矿安全监察局

National Coal Mine Safety Administration



国家核安全局
National Nuclear Safety Administration

30. The operating systems provides access to a **number of** resources, directly or indirectly, such as files on a local disk, **privileged** system calls, personal information about users...
- **a number of** 许多, 大量
 - **privileged** 特许的
31. External security: a new request from outside the computer, such as a **login** at a connected **console** or some kind of network connection.
- **Login** 登录系统
 - **Console** 控制台
32. To establish **identity** there may be a process of **authentication**.
- **identity** 身份 (ID) Your identity is who you are.
 - **Authentication** 身份认证; 证明; 鉴定; 证实
the process or action of verifying(核查) the identity of a user or process.

33. Often a username must be **quoted**, and each username may have a password.

➤ **Quote** 引用，用到 use

34. **In addition to** the allow/disallow model of security, a system with a high level of security will also **offer auditing** options.

➤ **In addition to** : besides.

➤ **offer** : provide

➤ **audit** /'ɔ : dɪt/ 审计，稽查

35. The United States Government Department of Defense (DoD) created the Trusted Computer System Evaluation Criteria (TCSEC) which is a standard that sets basic **requirements** for **assessing** the **effectiveness** of security.

➤ **Department of Defense** 国防部

➤ **Trusted Computer System Evaluation Criteria** 可信计算机系统评价标准

➤ **Requirement** 需求

➤ **assess** /ə'ses/ When you assess a person, thing, or situation, you consider them in order to **make a judgment** about them. 评估

➤ **effectiveness** 有效性，效果

Sometimes you have to sacrifice efficiency for effectiveness.
有时候你需要牺牲效率来达到效果。

有效果 vs 高效率

- **Effectiveness** is about doing the right task, **completing** activities and **achieving** goals.

站好队，大方向没错。卧薪尝胆终成霸业

兵强者，攻其将；将智者，伐其情。将弱兵颓，其势自萎。利用御寇，顺相保也。

兵强将智，不可以敌，势必事先。事之以土地，以增其势，如六国之事秦：策之最下者也。事之以币帛，以增其富，如宋之事辽金：策之下者也。惟事以美人，以佚其志，以弱其体，以增其下之怨。如勾践以西施重宝取悦夫差，乃可转败为胜。 《三十六计—美人计》

- **Efficiency** is about doing things in an **optimal** way, for example doing it the **fastest** or in the least expensive way. It **could be** the **wrong** thing, but it was done optimally.

可能南辕北辙？

魏王欲攻邯郸，季梁闻之，中道而反，衣焦不申，头尘不去，往见王曰：“今者臣来，见人于大行。方北面而持其驾，告臣曰：‘我欲之楚。’臣曰：‘君之楚，将奚为北面？’曰：‘吾马良。’臣曰：‘马虽良，此非楚之路也。’曰：‘吾用多。’臣曰：‘用虽多，此非楚之路也。’曰：‘吾御者善。’此数者愈善，而离楚愈远耳！”今王动欲成霸王，举欲信于天下。恃王国之大，兵之精锐，而攻邯郸，以广地尊名，王之动愈数，而离王愈远耳。犹至楚而北行也。” 《战国策—魏四》