



Operating System

Reading & Vocabulary Development
for CS50x Iran Learners

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□ چطور مطالعه کنم؟

▪ قدم اول:

در بخش اول (Reading)، یک بار متن مقاله رو بخون. سعی نکن از همون اول همه کلمات رو بفهمی؛ فقط با کلیت متن آشنا شو.

▪ قدم دوم:

در بخش بعدی نگاهی به لیست لغات و اصطلاحات متن بنداز. بین کدوم ها برای آشنا هستن و کدوم ها نه. بعضی از کلمات نآشنا رو میتوانی با توجه به جمله و کلمات اطرافش حدس بزنی. از طرفی، بعضی کلمات ممکنه برای آشنا باشن، اما معنیشون توی این متن فرق کنه.

▪ قدم سوم:

در بخش های بعد، توضیح و مثال هایی برای اون کلمات آورده شده. بعضی از لغت ها ممکنه مستقیماً توی متن نباشن، اما چون به موضوع مرتبط بودن، فرصت خوبی بوده تا باهاشون آشنا شی.

این روند تا پایان مقاله ادامه داره. میتوانی بسته به نیاز و وقتی که داری، با فاصله های زمانی دلخواه مطالعه کنی. هر وقت خسته شدی، به خودت استراحت بد.

□ درباره لغات مقاله

کلمات مقاله ها بر اساس سطح زبان دسته بندی نشده، اما به طور کلی در سه گروه قرار می‌گیرن:

1. کلمات پر تکرار و رایج که در اثر مجاورت زیاد، تکرار و به مرور زمان در ذهن جا می‌افتن.
2. کلمات تخصصی حوضه IT و کامپیوتر که با دیدن در متن های مرتبط کم کم یاد می‌گیریشون.
3. کلماتی که کمتر رایج هستن که شاید فقط چند بار در متن های خاص ببینی.

❖ نکته مهم

دوست من هیچ نیازی نیست این کلمات و اصطلاحات رو حفظ کنی. هدف فقط اینه که مسیر یادگیریات رو هموار تر کنیم. هر چیزی که با تکرار و توجه وارد ذهن بشه، موندگار تر می‌شود.

لینک مقاله کامل

<https://www.geeksforgeeks.org/what-is-an-operating-system/>

[Aptitude](#) [Engineering Mathematics](#) [Discrete Mathematics](#) [Operating System](#) [DBMS](#) [Computer N](#)

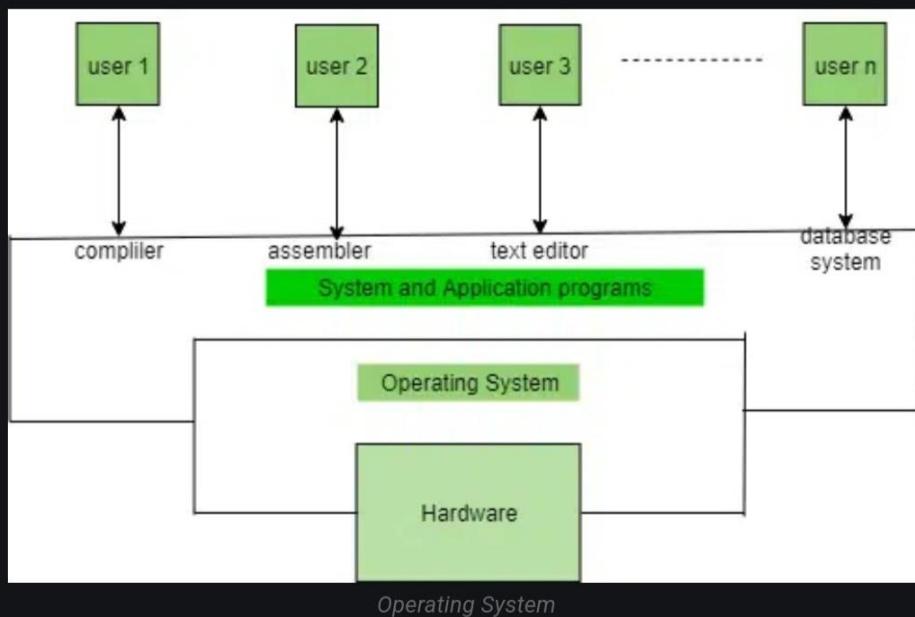
What is an Operating System?

Last Updated : 28 Dec, 2024



An **Operating System** is a System software that manages all the resources of the computing deice.

- Acts as an interface between the software and different parts of the computer or the computer hardware.
- Manages the overall resources and operations of the computer.
- Controls and monitors the execution of all other programs that reside in the computer, which also includes application programs and other system software of the computer.
- Examples of Operating Systems are Windows, Linux, macOS, Android, iOS, etc.



□ Phrases & Vocabulary

operating system
computing device
control and monitor
reside in something
execution of program
include

compiler
assembler
text editor
software
hardware
database system

overall: general(.adj), generally(.adv)
example: sample, instance

operate (work)

to (cause to) work, be in action or have an effect

operate a machine/process/system

Synonyms:

work, use, handle

operating (functioning)

working or being used

operating system

device

- an object or machine which has been invented for a particular purpose

biotech/medical devices

electronic device

mobile/wireless/handheld devices

Synonyms:

gadget, tool, utensil

- a plan, method, or trick with a particular aim

marketing device

Synonyms:

plan, tactic, move

monitor (screen)

a computer screen

a computer monitor

monitor (watch)

to watch and check something carefully over a period of time

Synonyms:

watch, observe, track

reside [formal]

To be present (in)

reside in something/someone

If a power or quality resides in someone or something, the person or thing has that power or quality

Synonyms:

lie in something, exist

execute (IT)

to make a computer program or instruction work

execute a command/program

In computers, to execute a program is to run the program in the computer, or to start it to run.

In usage, people run programs and systems execute them.

A computer processor executes an instruction, meaning that it performs the operations called for by that instruction.

executable

An .exe is a very common file type. The .exe file extension is short for “executable.” These files are most commonly used on Windows® computers to install or run software applications.

include

to contain something as a part of something else, or to make something part of something else

Synonyms:

incorporate, cover, involve

Antonym:

exclude

- **What is Language Processors (Translators)?**

Compilers and interpreters, translate programs written in high-level languages into machine code that a computer understands and assemblers translate programs written in low-level or assembly language into machine code.

- **Types of Language Processors**
 1. Compiler
 2. Assembler
 3. Interpreter

compiler

a person or organization that collects information and arranges it in a list, report, book, etc.

compiler (IT)

It reads the complete source program written in high-level language as a whole in one go and translates it into an equivalent program in machine language.

assembler (production)

a worker or company that puts together the parts of an object being manufactured
a car/computer assembler

assembler (IT)

An assembler is a program that converts assembly language, which is a low-level programming language, into machine code that can be executed by a computer. Assembly language is a text-based representation of machine code that is easier for humans to read and write than machine code, which is a series of binary digits that is difficult for humans to read and write.

interpreter (between languages)

someone whose job is to change what someone else is saying into another language

interpreter (IT)

It Translates and executes immediately a single statement of the source before moving on to the next line.

If there is an error in the statement, the interpreter terminates its translating process at that statement and displays an error message.

The interpreter moves on to the next line for execution only after the removal of the error.

An Interpreter directly executes instructions written in a programming or scripting language without previously converting them to an object code or machine code. An interpreter translates one line at a time and then executes it.

database

A database is an organized collection of structured information, or data, typically stored electronically in a computer system.

A database is usually controlled by a **database management system (DBMS)**.

Together, the data and the DBMS, along with the applications that are associated with them, are referred to as a database system, often shortened to just database.

- **What's the Difference Between a Database and a Spreadsheet?**

Databases and spreadsheets (such as Microsoft Excel) are both convenient ways to store information. The primary differences between the two are:

- How the data is stored and manipulated
- Who can access the data
- How much data can be stored

Spreadsheets were originally designed for one user, and their characteristics reflect that.

They're great for a single user or small number of users who don't need to do a lot of incredibly complicated data manipulation.

Databases, on the other hand, are designed to hold much larger collections of organized information—massive amounts, sometimes.

Databases allow multiple users at the same time to quickly and securely access and query the data using highly complex logic and language.

• **Types of Databases**

Databases can be classified based on their structure, use cases, or storage methods. Below are some of the major types of databases:

• **Relational Databases**

A relational database's contents are arranged as a collection of tables with rows and columns. Accessing structured data is made most flexible and efficient by relational database technology.

Examples: MySQL, PostgreSQL, Oracle, Microsoft SQL Server.

Use Cases: E-commerce platforms, banking systems, and HR management.

• **NoSQL Databases**

NoSQL databases handle unstructured and semi-structured data. They are highly scalable and flexible, making them ideal for real-time applications.

The prevalence and complexity of online applications led to the rise in popularity of NoSQL databases.

Examples: MongoDB, Cassandra, DynamoDB.

Use Cases: Social media platforms, IoT applications, and big data analytics.

- **Graph Databases**
- **Data Warehouses**

- **text editor**

A “text editor” is a software program that allows text files to be edited.

Text files include software code, configuration files, and data files. Software developers will rely heavily on text editors as they write code, create tests, and configure software.

Examples of text editors:

Basic: Notepad (Windows),TextEdit (Mac),
Advanced: Visual Studio Code, Sublime Text, Atom, Vim, Emacs

□ Confusing Words

hardware, software, firmware

These are the three core components that make up present-day computers and systems.

Hardware includes the physical components of a computer system, which may wear out over time and require replacement.

Software includes sets of instructions that allow a variety of inputs from the user.

Firmware is a specific type (or subset) of software that is designed to act as the intermediary between the software and hardware or for the operation of single-purpose embedded systems, such as printers or routers. End users typically have limited interaction with firmware and it is modified infrequently.

Examples of these core components include:

- **Hardware:** Computer Processing Units (CPU), Random Access Memory (RAM), and Hard Drives (HDD)
- **Software:** Internet browsers, operating systems (OS), and antivirus
- **Firmware:** Basic Input/Output System (BIOS) and Extensible Firmware Interface (EFI)

□ Exercise 1

Fill in the blanks with the words below. Some word forms may need to be changed.

operate(x2) device database monitor
execute(x2) compiler reliability include

1. It was the last _____ machine of its kind until it broke down last year.
2. The nurse is _____ his heart rate and respiration.
3. The encyclopedia _____ the names of all Nobel Prize winners.
4. a modern microprocessor can correctly _____ a program with extremely high _____.
5. Another program, called a _____, turns this text, known as the source code, into an _____ file (such as an .exe on Windows).
6. The legal system _____ very differently in the US and Britain.
7. A mouse is a _____ that makes it easier to select different options from computer menus.
8. They incorporated the data into a searchable _____ for analyzing different risk factors.

[Answer Key](#)

What is an Operating System Used for?

- **As a platform for Application programs:** It provides a platform, on top of which, other programs, called application programs can run.
- **Managing Input-Output unit:** It also allows the computer to manage its own resources such as memory, monitor, keyboard, printer, etc. Management of these resources is required for effective and fair utilization.
- **Multitasking:** It manages memory and allows multiple programs to run in their own space and even communicate with each other through shared memory.
- **Manages memory and Files:** It manages the computer's main memory and second storage. Additionally, it allows and deallocates memory to all tasks and applications.
- **Provides Security:** It helps to maintain the system and applications safe through the authorization process. Thus, the OS provides security to the system.

□ Phrases & Vocabulary

platform

provide

main memory

second storage

effective and fair utilization

multitasking

authorization process

thus [formal]: therefore, in this/that way

allow: let, permit

to deallocate memory: to free memory

platform (IT)

It has a wide range of possible meanings, even though that “may go unnoticed by the casual listener or even the speaker.”

In the tech sector, though, “platform” originally meant the foundation that supported software.

platform (structure)

a flat raised area or structure

platform (politics)

a set of ideas and plans that a politician or party promises to act on if elected on a platform

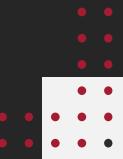
provide (give)

to give something that is needed or wanted to someone

provide a resource/service

provide support/security/shelter

please provide your [name and address, contact details]



• **What is Computer Memory?**

Computer memory is just like the human brain. It is used to store data/information and instructions. It is a data storage unit or a data storage device where data is to be processed and instructions required for processing are stored. It can store both the input and output can be stored here

• **Types of Computer Memory**

In general, computer memory is of three types:

1. Primary/main memory (RAM,ROM)
2. Secondary memory
3. Cache memory

• **cache memory**

Cache memory is a type of high-speed semiconductor memory that can help the CPU run faster. Between the CPU and the main memory, it serves as a buffer. It is used to store the data and programs that the CPU uses the most frequently.

fair

If something is fair, it is reasonable and is what you expect or deserve

fair price/wage/deal

It's not fair

fair on somebody

utilization

the use of something (effectively)

utilization of resources

effective/maximum utilization

multitasking (computer)

the ability of a computer to operate several programs at one time

authorization

official permission for something to happen, or the action of giving someone official permission for something

get/acquire/obtain authorization

give/grant/provide authorization

authorization to do something

□ Exercise 2

Fill in the blanks with the words below. Some word forms may need to be changed.

provide fair utilize(x2) authorization
(primary memory) (secondary memory)

1. The investment strategy is _____ by experienced multinationals.
2. _____ is made up of semiconductors, It is also divided into two types, Read-Only Memory (ROM) and Random Access Memory (RAM). _____ is a physical device for the permanent storage of programs and data(Hard disk, Compact disc, Flash drive, etc.).
3. All the workers want is a _____ wage for the work that they do.
4. The company _____ medical benefits to all employees.
5. Sensible _____ of the world's resources is a priority.
6. Medical records cannot be disclosed without _____ from the patient.

[Answer Key](#)

Functions of the Operating System

- **Resource Management:** The operating system manages and allocates memory, CPU time, and other hardware resources among the various programs and processes running on the computer.
- **Process Management:** The operating system is responsible for starting, stopping, and managing processes and programs. It also controls the scheduling of processes and allocates resources to them.
- **Memory Management:** The operating system manages the computer's primary memory and provides mechanisms for optimizing memory usage.
- **Security:** The operating system provides a secure environment for the user, applications, and data by implementing security policies and mechanisms such as access controls and encryption.
- **Job Accounting:** It keeps track of time and resources used by various jobs or users.
- **File Management:** The operating system is responsible for organizing and managing the file system, including the creation, deletion, and manipulation of files and directories.
- **Device Management:** The operating system manages input/output devices such as printers, keyboards, mice, and displays. It provides the necessary drivers and interfaces to enable communication between the devices and the computer.
- **Networking:** The operating system provides networking capabilities such as establishing and managing network connections, handling network protocols, and sharing resources such as printers and files over a network.
- **User Interface:** The operating system provides a user interface that enables users to interact with the computer system. This can be a [Graphical User Interface \(GUI\)](#), a [Command-Line Interface \(CLI\)](#), or a combination of both.
- **Backup and Recovery:** The operating system provides mechanisms for backing up data and recovering it in case of system failures, errors, or disasters.

□ Phrases & Vocabulary

function

responsible for

scheduling

allocate resources

allocate memory

policies

encryption

manipulation

capability

disaster

keep track of

a combination of both

organize: sort, arrange, order, classify

establish: create and operate, set, start

combination: mixture

in case of: in the event of

usage: utilization, use, employment

function (work)

the way in which something works or operates

function (computer)

a process that a computer or a computer

program uses to complete a task

a search/save/sort function

function (value)

(in mathematics) a quantity whose value depends on another value and changes with that value:

x is a function of y

allocate

distribute (resources or duties) for a particular purpose

allocate sth for sth

allocate sth to sb/sth

allocate capital/funds/money

allocate time

allocate memory

In computer science it refers to the process of assigning a specific portion of memory for use by a program. It involves determining if there is free memory available and then providing this memory for the program's use.

Antonym:

deallocate memory

schedule

to plan something for a particular time

policy (plan)

a set of ideas or a plan of what to do in particular situations that has been agreed to officially by a group of people, a business organization, a government, or a political party

encryption

the process of changing electronic information or signals into a secret code (= system of letters, numbers, or symbols) that people cannot understand or use without special equipment

protective encryption

encryption software

manipulation

the control of someone or something in order to get an advantage, often unfairly or dishonestly

manipulation (IT)

the process of changing, moving, etc.

information on a computer

data manipulation

- **data manipulation**

Data Manipulation is the process of manipulating (creating, arranging, deleting) data points in a given data to get insights much easier. We know that about 90% of the data we have are unstructured.

Data manipulation is a fundamental step in data analysis, data mining, and data preparation for machine learning and is essential for making informed decisions and drawing conclusions from raw data.

To make use of these data points, we perform data manipulation. It involves:

1. Creating a database
2. SQL for structured data manipulation
3. NoSQL languages like MongoDB for unstructured data manipulation.

□ Exercise 3

Fill in the blanks with the words below. Some word forms may need to be changed.

allocate policy(x2) manipulate encrypt
schedule capable virtual regard spreadsheet

1. The company has now implemented its _____ of Quality Control.
2. The meeting has been _____ for tomorrow afternoon.
3. Memory _____ is the process of reserving _____ or physical computer space for a specific purpose (e.g., for computer programs and services to run).
4. He can _____ situations mostly to his benefit.
5. This repository contains the IT Security's _____, procedures, and guidelines _____ technology resources and services.
6. _____ are an excellent way to manipulate data.
7. Information technology serves as a critical enabler in enhancing the effectiveness, efficiency, and coordination of _____ management efforts.
8. Your financial information is fully _____ and cannot be accessed.
9. The university has the _____ to monitor for excess energy use.

[Answer Key](#)

- **Virtualization:** The operating system provides virtualization capabilities that allow multiple operating systems or applications to run on a single physical machine. This can enable efficient use of resources and flexibility in managing workloads.
- **Performance Monitoring:** The operating system provides tools for monitoring and optimizing system performance, including identifying bottlenecks, optimizing resource usage, and analyzing system logs and metrics.
- **Time-Sharing:** The operating system enables multiple users to share a computer system and its resources simultaneously by providing time-sharing mechanisms that allocate resources fairly and efficiently.
- **System Calls:** The operating system provides a set of system calls that enable applications to interact with the operating system and access its resources. System calls provide a standardized interface between applications and the operating system, enabling portability and compatibility across different hardware and software platforms.
- **Error-detecting Aids:** These contain methods that include the error messages, and other debugging and error-detecting methods.

□ Phrases & Vocabulary

virtualization

system calls

system logs and metrics

error-detecting aids

identifying bottlenecks

efficient use

workloads

flexibility

portability

compatibility

simultaneously: at the same time

log: record, record book ,journal

virtual

not physically existing as such but made by software to appear to do so

aid

help or support, or something that provides it
humanitarian/emergency/foreign/economic aid
appeal for/ask for/seek aid
get/receive/accept aid

detect

to discover something, usually using special equipment

identify

- to recognize or be able to name someone or something, or to prove who or what someone or something is
- to recognize a problem, need, fact, etc. and to show that it exists

Identify a need/pattern/risk/source/virus

Identify an individual/item/object

workload

the amount of work to be done, especially by a particular person or machine in a period of time
a heavy/light workload
increased workloads

flexibility (able to change/bend)

the quality of being able to change or be changed easily according to the situation

portability

- the ability to be easily carried
 - the ability to be used for a different purpose or on a different system
- number/provider/service portability
application/software portability

compatibility

- the fact of being able to exist, live, or work successfully with something or someone else
- the ability of machines, especially computers, or computer programs to work successfully with other machines or programs

bottleneck

- a section of road where traffic moves slowly
 - a problem that delays progress
- legislative/funding bottleneck
eliminate/avoid a bottleneck
major/huge bottleneck

system call

a system call is a programmatic way in which a computer program requests a service from the kernel of the operating system it is executed on.

system log (syslog)

a record of operating system events.
It includes startup messages, system changes, unexpected shutdowns, errors and warnings, and other important processes. Windows, Linux, and macOS all generate syslogs.

□ Confusing Words

effective, efficient

The words effective and efficient both mean "capable of producing a result," but there is an important difference.

Effective means "producing a result that is wanted".

Efficient means "capable of producing desired results without wasting materials, time, or energy".

- His disorganized method of cleaning the house was effective but it was not efficient; in the end, the house was clean, but it took much longer than it should have.
- The new online banking system offers a convenient and efficient way to check your account.
- In this light, the camera is more effective if you use the flash.

□ Exercise 4

Fill in the blanks with the words below. Some word forms may need to be changed.

aid detect(x2) identify(x2) workload
portability compatibility bottleneck priority
effective donate

1. Unmanageable _____ can be a source of stress.
2. an easily _____ and treatable disorder
3. She would only play a role if she could _____ with the character.
4. The company agreed to _____ £500 in emergency _____ to the clean-up efforts.
5. You need to identify your _____.
6. To create an _____ advertising campaign you must first _____ who your target market is.
7. Software testing that assesses a program's ability to function properly in many environments without requiring major changes is known as _____ testing.
8. _____ problems can arise when upgrading the operating system.
9. High levels of lead were _____ in the atmosphere.
10. All decisions must be approved by the committee, and this is where the company runs into _____.

[Answer Key](#)

Objectives of Operating Systems

Let us now see some of the objectives of the operating system, which are mentioned below.

- **Convenient to use:** One of the objectives is to make the computer system more convenient to use in an efficient manner.
- **User Friendly:** To make the computer system more interactive with a more convenient interface for the users.
- **Easy Access:** To provide easy access to users for using resources by acting as an intermediary between the hardware and its users.
- **Management of Resources:** For managing the resources of a computer in a better and faster way.
- **Controls and Monitoring:** By keeping track of who is using which resource, granting resource requests, and mediating conflicting requests from different programs and users.
- **Fair Sharing of Resources:** Providing efficient and fair sharing of resources between the users and programs.

Types of Operating Systems

- **Batch Operating System:** A [Batch Operating System](#) is a type of operating system that does not interact with the computer directly. There is an operator who takes similar jobs having the same requirements and groups them into batches.
- **Time-sharing Operating System:** [Time-sharing Operating System](#) is a type of operating system that allows many users to share computer resources (maximum utilization of the resources).
- **Distributed Operating System:** [Distributed Operating System](#) is a type of operating system that manages a group of different computers and makes appear to be a single computer. These operating systems are designed to operate on a network of computers. They allow multiple users to access shared resources and communicate with each other over the network. Examples include Microsoft Windows Server and various distributions of Linux designed for servers.
- **Network Operating System:** [Network Operating System](#) is a type of operating system that runs on a server and provides the capability to manage data, users, groups, security, applications, and other networking functions.
- **Real-time Operating System:** [Real-time Operating System](#) is a type of operating system that serves a real-time system and the time interval required to process and respond to inputs is very small. These operating systems are designed to respond to events in real time. They are used in applications that require quick and deterministic responses, such as embedded systems, industrial control systems, and robotics.
- **Multiprocessing Operating System:** [Multiprocessor Operating Systems](#) are used in operating systems to boost the performance of multiple CPUs within a single computer system. Multiple CPUs are linked together so that a job can be divided and executed more quickly.
- **Single-User Operating Systems:** [Single-User Operating Systems](#) are designed to support a single user at a time. Examples include Microsoft Windows for personal computers and Apple macOS.
- **Multi-User Operating Systems:** [Multi-User Operating Systems](#) are designed to support multiple users simultaneously. Examples include Linux and Unix.

□ Phrases & Vocabulary

objective

efficient grant

resource request

mediate conflicting request

batch operating system

embedded system

distributed

various distributions

serve a real-time server

time interval

respond to events

quick and deterministic responses

boost the performance

convenient: suitable, appropriate, fitting

manner: way, fashion, method

intermediary: go-between, mediator

deterministic: guaranteed and reliable

boost: increase, improve, enhance

grant

agree to give or allow (something requested) to grant a request

conflicting

relating to beliefs, needs, facts, etc. that are different and opposing

conflicting account/report

conflicting advice/data/information

conflicting interests

batch

a group of things or people dealt with at the same time or considered similar in type

Synonym:

group, lot, bunch, cluster, set

distribute

to give something to a large number of people, for example a share of a company's profits to shareholders

distribute sth to sb

distribute sth among sb

distribute to sb

distribution

- the process of giving things out to several people, or spreading or supplying something
- the way in which people or things are spread out in a place

distribution costs

equitable distribution of resources/wealth

interval

a period between two events or times, or the space between two points

serve (help achieve)

to help achieve something or to be useful as something

serve a purpose

serve as

serve for

respond

say something in reply.

Synonym:

answer, reply to

to implement a plan/policy/measure

to implement a change/program/recommendation

embedded

fixed into the surface of something

embedded system

a computer system that does a particular task inside a machine or larger electrical system

real-time (IT) (adjective)

used to describe the way in which a computer system receives data and then communicates it or makes it available immediately

real-time access to

real-time trading

real-time data/information/communications

real-time (IT) (noun)

the very short amount of time needed for computer systems to receive data and information and then communicate it or make it available

something you want to do or achieve

These are words for something you want to do or achieve.

One of the most common words for this is **aim**. Aim is used to describe a result that you are hoping your intended actions achieve.

- Our aim in protesting is to raise awareness of the unfairness of the system.

Goal is very similar to aim, but also implies that the reason you do something is to achieve a particular result. Goal is also used in business contexts to describe a level of achievement that a company has set for one of its employees.

Objective is similar to goal and is often used in work or business contexts.

- My goal in life has always been to be financially independent.
- We met our sales goal for this quarter.
- One of my objectives for this year is to increase sales.

A **target** is an objective that is usually expressed in terms of a particular number, level, or amount. Target is used in business contexts.

If you meet your sales targets you will receive a generous bonus.

The noun **mission** is used to describe something that you feel strongly you must achieve in life. In business contexts it can refer to the result that a company or an organization is trying to achieve through its plans or actions.

- I made it my mission to change attitudes towards women in science.
- The mission of the University is to educate and improve the lives of young people.

There are many closely related words to aim that describe a desire or plan to achieve something.

Ambition refers to a strong wish to achieve a stated goal, and implies that reaching that goal will take a lot of effort.

- Her ambition was to reach the very top of her profession.

An **intention** is something that you want and you plan to do. It does not imply that you have begun to work towards this goal, just that you plan on beginning to work toward this goal.

- It is my intention to become a doctor before I turn 30.

Intent is a more formal word for intention. It is used in legal language.

- They were charged with the possession of explosives with intent to endanger life.

□ Exercise 5

Fill in the blanks with the words below. Some word forms may need to be changed.

distribute conflict develop interest achieve
respond advance reduce attempt embed
(real time) heartbeat

1. In focusing on carbon _____, many companies respond by _____ relatively simple fixes.
2. We all work hard to handle the conflicting _____ of a career and a family.
3. real-time data provides information like a person's _____, and these immediate updates can be used to save lives and even predict ailments in _____.
4. We could reduce our costs by _____ a more efficient _____ network.
5. Aid must double to _____ to natural disasters.
6. A sense of guilt was deeply _____ in my conscience.
7. They aimed to _____ a more equitable distribution of resources/wealth.
8. NYSE OpenBook™ is a product that allows users to access market data in _____.
9. His time at business school developed his ability to reconcile _____ data and differing points of view.

[Answer Key](#)

- **Embedded Operating Systems:** [Embedded Operating Systems](#) are designed to run on devices with limited resources, such as smartphones, wearable devices, and household appliances. Examples include Google's Android and Apple's iOS.
- **Cluster Operating Systems:** Cluster Operating Systems are designed to run on a group of computers, or a cluster, to work together as a single system. They are used for high-performance computing and for applications that require high availability and reliability. Examples include Rocks Cluster Distribution and OpenMPI.

For more, refer to [Types of Operating Systems](#).

How to Choose the Operating System?

There are so many factors to be considered while choosing the best Operating System for our use. These factors are mentioned below.

- **Price Factor:** Price is one of the factors to choose the correct Operating System as there are some OS that is free, like Linux, but there is some more OS that is paid like Windows and macOS.
- **Accessibility Factor:** Some Operating Systems are easy to use like macOS and iOS, but some OS are a little bit complex to understand like Linux. So, you must choose the Operating System in which you are more accessible.
- **Compatibility factor:** Some Operating Systems support very less applications whereas some Operating Systems supports more application. You must choose the OS, which supports the applications which are required by you.
- **Security Factor:** The security Factor is also a factor in choosing the correct OS, as macOS provide some additional security while Windows has little fewer security features.

Examples of Operating Systems

- **Windows** (GUI-based, PC)
- **GNU/Linux** (Personal, Workstations, ISP, File, and print server, Three-tier client/Server)
- **macOS** (Macintosh), used for Apple's personal computers and workstations (MacBook, iMac).
- **Android** (Google's Operating System for smartphones/tablets/smartwatches)
- **iOS** (Apple's OS for iPhone, iPad, and iPod Touch)



□ Phrases & Vocabulary

wearable devices

household appliances

to be considered

accessibility

compatibility

easy/complex to use

a little bit: a bit, fairly, slightly, relatively

wearable technology

any kind of electronic device designed to be worn on the user's body.

Examples:

smartwatches, fitness trackers such as the Fitbit Charge, VR headsets, smart jewelry, web-enabled glasses and Bluetooth headsets

appliance

a device or piece of equipment designed to perform a specific task

electric/domestic/kitchen/household appliances

an appliance company/retailer/maker
energy-efficient appliances

synonym:

instrument, gadget

accessibility

- the fact of being able to be reached or obtained easily
- the quality of being able to be entered or used by everyone, including people who have a disability
- the quality of being easy to understand or enjoy

□ Exercise 6

Fill in the blanks with the words below. Some word forms may need to be changed.

(smart clothes) appliance regular accessibility
consider(x2) plan advance sit

1. Wearable technology such as _____ can be used to monitor heart rate.
2. Features have been added to enhance the _____ of the website.
3. There should be incentives for installing energy-efficient _____.
4. She's being _____ for the job.
5. I'd like some time to _____ before I make a decision.
6. You've got to consider the time element when _____ the whole project.
7. Technology has _____ considerably since then.
8. Get up and move _____ if you spend a considerable amount of time _____.

[Answer Key](#)

1 [back to exercise](#)

1. operating
2. monitoring
3. includes
4. execute-reliability
5. compiler-executable
6. operates
7. device
8. database

2 [back to exercise](#)

1. utilized
2. Primary memory-secondary memory
3. fair
4. provides
5. utilization
6. authorization

3 [back to exercise](#)

1. policy
2. scheduled
3. allocation-virtual
4. manipulate
5. policies-regarding
6. Spreadsheets
7. disaster
8. encrypted
9. capability

4 [back to exercise](#)

1. workloads
2. detectable
3. identify
4. donate-aid
5. priorities
6. effective-identify
7. portability
8. Compatibility
9. detected
10. bottlenecks

5 [back to exercise](#)

1. reduction-attempting
2. interests
3. heartbeat-advance
4. developing-distribution
5. respond
6. embedded
7. achieve
8. real time
9. conflicting

6 [back to exercise](#)

1. smart clothes
2. accessibility
3. appliances
4. considered
5. consider
6. planning
7. advanced
8. regularly-sitting

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