Operating Systems

GitHub: https://github.com/Mohamed-Emad-Abdelsalam/HTML-Project

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Brief Introduction

An operating system is a group of computer programs that lets people interact with a computer. Simply, an operating system is the most crucial software that runs on a computer.

Therefore, knowing the basics about operating systems, including the most popular ones along with the similarities and differences between them, would be extremely helpful for users. The website aims to achieve this goal; it provides a simple and clear explanation of what operating systems do, the various different operating systems, the pros and cons of each one, etc.

Website Screenshots

Microsoft Windows has existed in one form or another since 1985, and it remains the most popular operating system for home and office computers. Its latest versions, including Windows 10, are also used on some tablets, and the OS is used on some web and number-crunching server computers as well. Computers from a wide variety of manufacturers can use Windows.

macOS

Big Sur, the latest version of Apple's macOS operating system

Head-to-head in the competition with Microsoft Windows is Apple's macOS. macOS and Windows are both examples of proprietary operating systems, meaning that the company conceptualized, designed, developed, and now sells their own OS. They're designed and sold by the companies and aren't meant to be tampered with or tweaked by users. Apple and Macintosh computers run on the proprietary macOS and OS X system, the first of which launched 20 years ago.

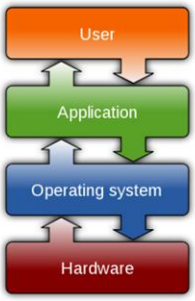
Linux

Operating Systems

The **operating system** is the most fundamental piece of system software. All other software requires an operating system in place which will:

- Act as a platform on which the other software can run
- Handle the operations that are common to different pieces of software running on the same system (e.g. allowing software to read and write to secondary storage devices such as a hard disk)

Otherwise, the functions that the operating system provides would have to be included in every piece of software running on the same system. This would be inefficient, and it would mean that computers would have less flexibility to run a variety of applications, as each piece of software would need to be designed for the specific hardware it was to be run on.



Layers of software combine to let computers do tasks.

Software instructs the system hardware to carry out tasks, and layers of software combine to allow the computer to carry out these tasks. Typically, the operating system interacts with hardware, provides a user interface, and supports security.

Which Operating System Is the Most Popular?

The following table shows the worldwide usage share of operating systems throughout the years. The data was collected on January of each year from W3Schools' log-files.

	Windows	macOS	Linux	Mobile	Chrome OS
2021	71.8%	9.8%	4.7%	13.2%	0.6%
2020	72.5%	9.7%	6.4%	11.2%	0.4%
2019	74.2%	10.1%	6.1%	9.2%	0.3%
2018	75.9%	10.0%	5.7%	7.7%	1.3%
2018	77.4%	10.3%	5.7%	6.3%	0.2%

Hardware

The operating system **manages resources** and ensures that the software and hardware can communicate with each other, which includes:

1. **Processor scheduling** — determining the order in which processes will be executed, which allows for multitasking
2. **Handling interrupts** — dealing with requests that disrupt the processor's work
3. **Memory management** — recording how memory in the computer is divided and identified so that memory is allocated efficiently between processes that are running
4. **Secondary storage management** — tracking where files and programs are stored and which parts are available for storage, and managing files and folders based on user permissions
5. **Input/Output device management** — ensuring efficient communication with devices and managing functionality issues

Similarities Between Android and iOS

- The basic functions in iOS and Android are alike. Both the iOS and Android phones have calling, messaging, web browsing, video chat, maps, voice commands etc.
- The user interfaces of iOS and Android have a lot of similarities. Both of these support swiping, tapping, pinch and zoom etc on their phone screens.
- There is a status bar on both the iOS and Android devices and it offers similar information such as battery life, time, app notifications, wifi etc.
- 4G cellular network can be enjoyed on both the iOS and Android devices. This is very important as cellular network is crucial for internet surfing.
- Privacy settings are paramount in both iOS and Android. Users are presented with app permissions as this lessens the risk of data leakage.

Differences Between Android and iOS

- iOS is a closed system whereas Android is more open. Users have barely any system permissions in iOS but in Android, users can customize their phones easily.
- Android software is available for many manufacturers such as Samsung, LG etc. and this may lead to some quality problems in the cheaper phones. However, iOS is strictly controlled by Apple and there is no quality problem as there are few models.
- The Android applications are obtained from Google Play while iOS applications are available in the Apple app store.
- Integration with other devices is better in Apple iOS as compared to Google Android.
- The running speed of iOS devices remains consistent with time. In contrast to this, the performance of Android devices may decline over time.

Source Code

```
<html>
<body>

<h1 style="color:blue"> <center> Which Operating System Is the Most Popular? </center> </h1>

<p>The following table shows the worldwide usage share of operating systems throughout the years. The data was collected on
January of each year from <a href="https://www.w3schools.com/">W3Schools'</a> log-files.</p>

<table style="margin-left: auto; margin-right: auto;" cellspacing="50">
<tbody>
<tr>
<td></td>
<td>Windows</td>
<td>macOS</td>
<td>Linux</td>
<td>Mobile</td>
<td>Chrome OS</td>
</tr>
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<td>10.1%</td>
<td>6.1%</td>
<td>9.2%</td>
<td>0.3%</td>
</tr>
<tr>
```

Code for a table

```
<h2 style="color:blue">Further reading:</h2>

<ol>

  <b> <li> <a href="Examples.html">Examples of Operating Systems </a> </li>

  <li> <a href="Popular.html">Which Operating System Is the Most Popular? </a> </li>

  <li> <a href="AndroidIOS.html">Android vs iOS </a> </li>

  <li> <a href="Types.html">Types of Operating Systems </a> </li></b>

</ol>

</body>
</html>
```

Code for hyperlinks

```
The following are some of the most popular and common operating systems worldwide. </p>

<br>

<h1 style="color:green"> <center> Microsoft Windows </center> </h1>

<center> <figure>

  <img src="windows.jpg" alt="windows" style="width:45%">

  <figcaption><i>Windows 10, the latest version of the Microsoft Windows operating system</i></figcaption>

</figure> </center>

<p> Microsoft Windows has existed in one form or another since 1985, and it remains the most popular operating system for home and office computers.
Its latest versions, including Windows 10, are also used on some tablets, and the OS is used on some web and number-crunching server computers
as well. Computers from a wide variety of manufacturers can use Windows. </p>

<br>

<h1 style="color:green"> <center> macOS </center> </h1>
```

Code for an image

```
<h2 style="color:green"> Hardware </h2>

<p> The operating system <b>manages resources</b> and ensures that the software and hardware can communicate with each other, which includes:

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  <li><b>Processor scheduling</b> – determining the order in which processes will be executed, which allows for multitasking</li>

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</ol> </p>
```

Code for a list