



Faculty of engineering - Shoubra
Benha University

Report of Operating Systems Project

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Topic: Operating Systems

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Project URL on Github: <https://abdelghany111.github.io/html-Project/>

Application Brief:

An operating system is the primary software that manages all the hardware and other software on a computer. The operating system, also known as an “OS,” interfaces with the computer’s hardware and provides services that applications can use. An operating system is the core set of software on a device that keeps everything together. Operating systems communicate with the device’s hardware. They handle everything from your keyboard and mice to the Wi-Fi radio, storage devices, and display. In other words, an operating system handles input and output devices. Operating systems use device drivers written by hardware creators to communicate with their devices.

Screenshots:

The screenshot shows a web browser window with the address bar displaying 'F:/AndelghanyProject/kernel.html'. The page title is 'Operating Systems'. A navigation bar contains links: 'Home', 'Types', 'Services', 'What is Kernel?', and 'Examples'. The main heading is 'What is Kernel?'. The text explains that the kernel is the central component of a computer operating system, managing communication between software and hardware. It is the innermost part of an operating system, while a shell is the outermost one. A diagram illustrates the layers: 'Hardware' (red box) on the left, followed by a green box divided diagonally with 'Kernel' on top and 'Operating System' on the bottom, then an orange box labeled 'Shell', and finally a red box labeled 'User' on the right. A large purple arrow points from left to right behind these boxes. Below the text, the section 'Features of Kernel' is followed by a bulleted list: 'Low-level scheduling of processes', 'Inter-process communication', 'Process synchronization', and 'Context switching'.

Operating Systems

Home Types Services What is Kernel? Examples

What is Kernel?

The kernel is the central component of a computer operating systems. The only job performed by the kernel is to manage the communication between the software and the hardware. A Kernel is at the nucleus of a computer. It makes the communication between the hardware and software possible. While the Kernel is the innermost part of an operating system, a shell is the outermost one.

Hardware Kernel Operating System Shell Terminal User

Features of Kernel

- Low-level scheduling of processes
- Inter-process communication
- Process synchronization
- Context switching

- Context switching
- Process synchronization
- Inter-process communication
- Low-level scheduling of processes

Features of Kernel

The screenshot shows a web browser window with the address bar displaying 'F:/AndelghanyProject/services.html'. The page title is 'Operating Systems'. A navigation bar contains links: 'Home', 'Types', 'Services', 'What is Kernel?', and 'Examples'. The main heading is 'The operating system's job'. The text explains that the operating system (OS) manages all software and hardware on the computer, coordinating multiple programs running at the same time to ensure each program gets what it needs. Below this, it states that an operating system can perform the following services for applications: 'In a multitasking operating system, where multiple programs can be running at the same time, the OS determines which applications should run in what order and how much time should be allowed for each application before giving another application a turn.', 'It handles input/output (I/O) to and from attached hardware devices, such as hard disks, printers and dial-up ports.', 'It sends messages to each application or interactive user -- or to a system operator -- about the status of operation and any errors that may have occurred.', 'On computers that can provide parallel processing, an operating system can manage how to divide the program so that it runs on more than one processor at a time.', and 'It can offload the management of batch jobs -- for example, printing -- so that the initiating application is freed from this work.' A diagram titled 'Operating system placement' shows a blue box labeled 'User' at the top and a light blue box labeled 'Application' at the bottom, with a double-headed vertical arrow between them.

Operating Systems

Home Types Services What is Kernel? Examples

The operating system's job

Your computer's operating system (OS) manages all of the software and hardware on the computer. Most of the time, there are several different computer programs running at the same time, and they all need to access your computer's central processing unit (CPU), memory, and storage. The operating system coordinates all of this to make sure each program gets what it needs.

an operating system can perform the following services for applications:

- In a multitasking operating system, where multiple programs can be running at the same time, the OS determines which applications should run in what order and how much time should be allowed for each application before giving another application a turn.
- It handles input/output (I/O) to and from attached hardware devices, such as hard disks, printers and dial-up ports.
- It sends messages to each application or interactive user -- or to a system operator -- about the status of operation and any errors that may have occurred.
- On computers that can provide parallel processing, an operating system can manage how to divide the program so that it runs on more than one processor at a time.
- It can offload the management of batch jobs -- for example, printing -- so that the initiating application is freed from this work.

Operating system placement

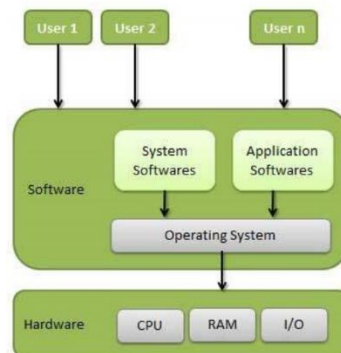
User Application

Operating Systems

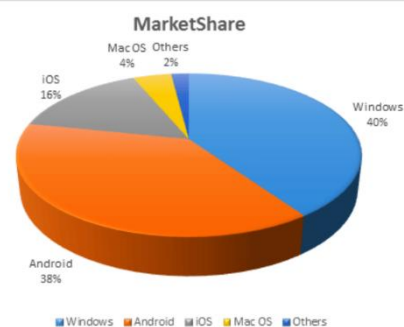
Home Types Serices What is Kernel? Examples

What is operating System?

An operating system (OS) is the program that, after being initially loaded into the computer by a boot program, manages all of the other application programs in a computer. The application programs make use of the operating system by making requests for services through a defined application program interface (API). In addition, users can interact directly with the operating system through a user interface, such as a command-line interface (CLI) or a graphical UI (GUI).



Home Types Serices What is Kernel? Examples



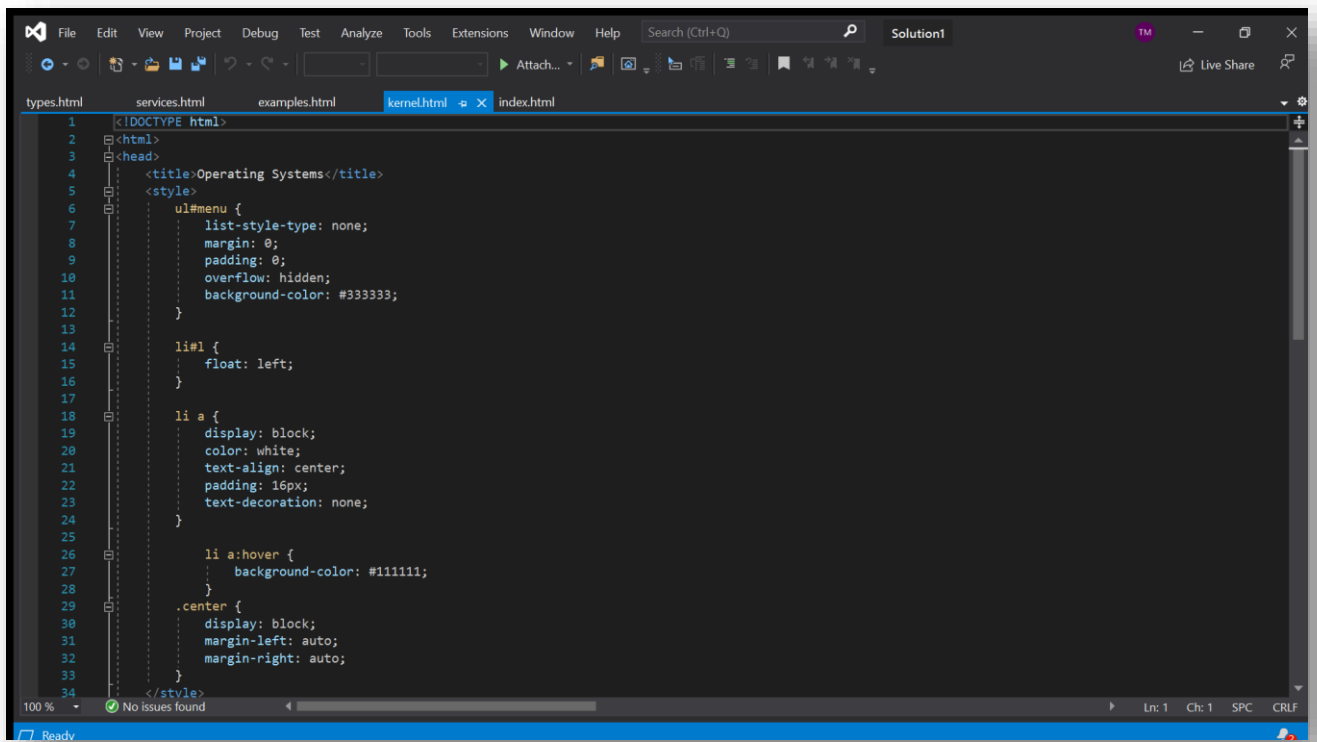
Here is a list of Operating Systems with the latest MarketShare:

OS Name	Share
Windows	40.34
Android	73.95
iOS	15.44
Mac OS	4.34
Linnux	0.95

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33 <h1> Operating Systems</h1>
34 <ul id="menu">
35
36 <li id="1"><a href="index.html">Home</a></li>
37 <li id="1"><a href="types.html">Types</a></li>
38 <li id="1"><a href="services.html">Services</a></li>
39 <li id="1"><a href="kernel.html">What is Kernel?</a></li>
40 <li id="1"><a href="examples.html">Examples</a></li>
41 </ul>
42 <h3>Types of operating Systems</h3>
43 <ul id="m2">
44 <li>Batch Operating System</li>
45 <li>Multitasking/Time Sharing OS</li>
46 <li>Multiprocessing OS</li>
47 <li>Real Time OS</li>
48 <li>Distributed OS</li>
49 <li>Network OS</li>
50 <li>Mobile OS</li>
51 </ul>
52

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47 </ul>
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49 <p>Your computer's operating system (OS) manages all of the software and hardware on the computer. Most of the time, there are several different computer
50 <h4>an operating system can perform the following services for applications:</h4>
51 <ul>
52 <li>In a multitasking operating system, where multiple programs can be running at the same time, the OS determines which applications should run in w
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57 </ul>
58 </body>
59 </html>

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47 <h3>What is Kernel?</h3>
48
49 <p>The kernel is the central component of a computer operating systems. The only job performed by the kernel is to manage the communication between the user space and the kernel space.
50 
51 <h3>Features of Kernel</h3>
52 <ul>
53 <li>Low-level scheduling of processes</li>
54 <li>Inter-process communication</li>
55 <li>Process synchronization</li>
56 <li>Context switching</li>
57 </ul>
58 </body>
59 </html>

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File Edit View Project Debug Test Analyze Tools Extensions Window Help Search (Ctrl+Q) Solution1
100 % No issues found Ln: 1 Ch: 1 SPC CRLF
examples.html kernel.html index.html
61 </ul>
62 
63 <h3>Here is a list of Operating Systems with the latest MarketShare:</h3>
64 <table style="width:100%">
65 <tr>
66 <th>OS Name</th>
67 <th>Share</th>
68 </tr>
69 <tr>
70 <td>Windows</td>
71 <td>40.34</td>
72 </tr>
73 <tr>
74 <td>Android</td>
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77 <tr>
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79 <td>15.44</td>
80 </tr>
81 <tr>
82 <td>Mac OS</td>
83 <td>4.34</td>
84 </tr>
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48 
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