

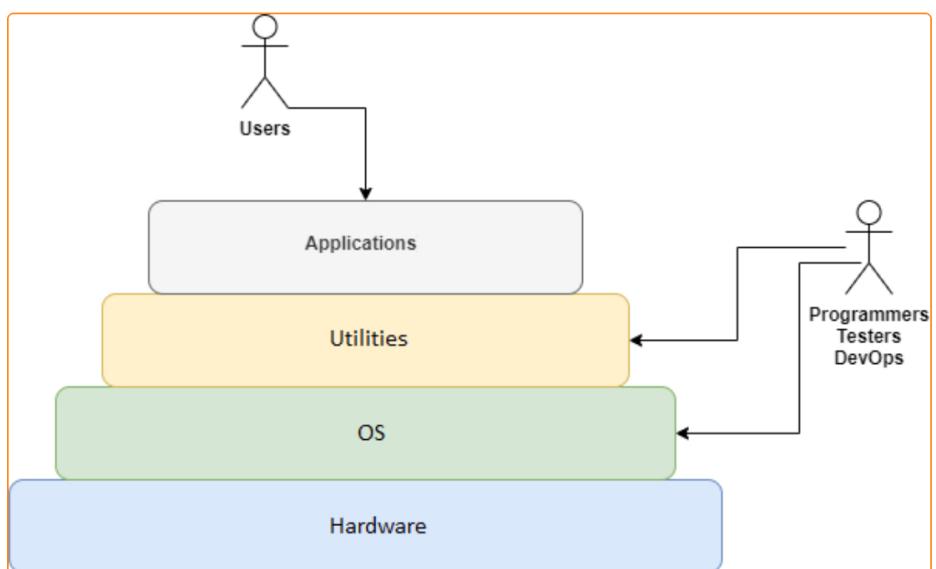
java from scratch Knowledge Base

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- First program
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- Conditional statements
- Loops

| java from scratch Knowledge Base

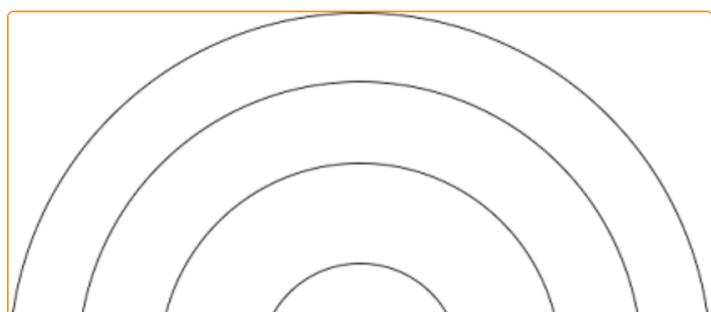
The architecture of an operating system

Today's software, and with it modern devices, cannot exist without an operating system. An operating system is a type of software that allows you to manage your computer system. The modern system consists of several layers:

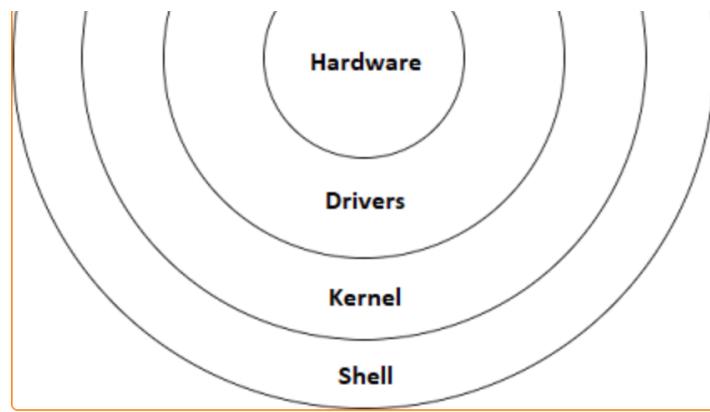


The lowest layer is the **hardware** layer. Above it is the operating system that manages and controls the use of hardware and peripheral devices. This is done with the help of utilities and application software. From the user's point of view, the operating system provides the environment to run utility applications such as office programs, games, and web browsers. There are many different types of operating systems which are dependent on the type of application, computer system, hardware e.g. desktop computer or a mobile phone.

Operating System just like a computer system has a layered structure.



- Arrays
- Object-oriented programming
- Conclusion
- Assignments
- Basics of GIT – video training
- HTTP basics – video training
- Design patterns and good practices video course
- Prework Primer: Essential Concepts in Programming
- Cybersecurity Essentials: Must-Watch Training Materials
- Java Developer – introduction
- Java Fundamentals – coursebook
- Java fundamentals slides
- Java fundamentals tasks
- Test 1st attempt | after the block: Java fundamentals
- Test 2nd attempt | after the block: Java fundamentals
- GIT version control system coursebook
- Java – Fundamentals: Coding slides
- Java fundamentals tasks
- Software Testing slides
- Software Testing Coursebook
- Software Testing tasks
- Test 1st attempt | after the block: Software testing
- Test 2nd attempt | after the block: Software testing
- Java – Advanced Features coursebook

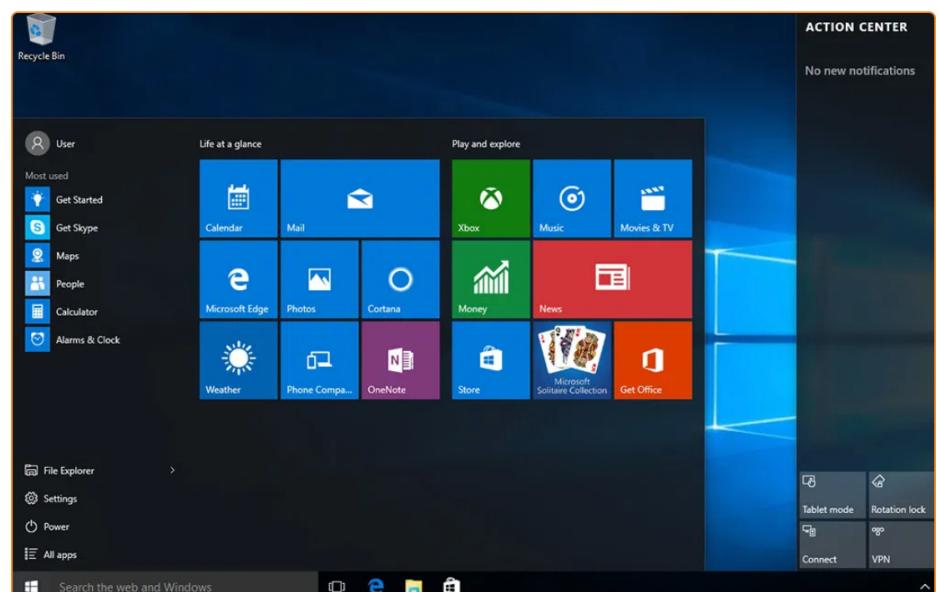


Drivers are special types of software that mediate communication between the hardware and the rest of the operating system. The **kernel of the operating system** is the main part of the operating system that is responsible for all of its activities. The **shell** is the top layer and acts as an intermediary between the user and the operating system. It gives the user the ability to use the operating system. In other words, this is where the user communicates with the operating system. Coatings can be distinguished into graphic and text based shells.

Windows

It is the most popular operating system in the world. Developed by Microsoft, it's name comes from the characteristic *window like* mode of operations. Operating systems from the Windows family are intended for both home and professional use. Windows allows you to work with a graphical user interface (GUI), as well as through a special type of text shell, such as:

- GUI



- Command Line

```

Command Prompt
C:\>dir
Volume in drive C is Windows
Volume Serial Number is 18E3-C152

Directory of C:\

03/10/2021 11:26 AM <DIR> .
Dell
  
```

- Java – Advanced Features slides
- Java – Advanced Features tasks
- Test 1st attempt | after the block: Java Advanced Features
- Test 2nd attempt | after the block: Java Advanced Features
- Java – Advanced Features: Coding slides
- Java – Advanced Features: Coding tasks
- Test 1st attempt | after the block: Java Advanced Features coding
- Test 2nd attempt | after the block: Java Advanced Features coding
- Data bases SQL coursebook
- Databases SQL slides
- Databases – SQL tasks
- Coursebook: JDBC i Hibernate
- Excercises: JDBC & Hibernate
- Test 1st attempt | after the block: JDBC
- Test 2nd attempt | after the block: JDBC
- Design patterns and good practices
- Design patterns and good practices slides
- Design Patterns & Good Practices tasks
- Practical project coursebook
- Practical project slides
- HTML, CSS, JAVASCIRPT Coursebook
- HTML, CSS, JAVASCRIPT slides
- HTML, CSS, JavaScript tasks

```

03/12/2021 12:49 AM <DIR>      Gradle
03/27/2021 10:05 AM <DIR>      Intel
02/26/2021 10:10 AM <DIR>      PerfLogs
03/26/2021 09:16 AM <DIR>      Program Files
03/25/2021 07:26 PM <DIR>      Program Files (x86)
03/10/2021 11:30 AM <DIR>      Quarantine
03/25/2021 04:04 PM <DIR>      Repositories
03/11/2021 10:46 AM <DIR>      Users
03/17/2021 11:47 PM <DIR>      Windows
          0 File(s)       0 bytes
          10 Dir(s)   377,412,399,104 bytes free

C:\>cd
C:\

C:\>tasklist

Image Name            PID Session Name     Session#    Mem Usage
=====
System Idle Process    0 Services           0          8 K
System                  4 Services           0        1,824 K
Secure System           88 Services          0       142,916 K
Registry                 152 Services          0       85,876 K
smss.exe                132 Services          0       1,780 K
csrss.exe               1160 Services          0      13,632 K
wininit.exe              1272 Services          0      16,536 K
services.exe             1344 Services          0      22,352 K
LsaIso.exe               1360 Services          0       3,208 K
lsass.exe                1372 Services          0      44,776 K
svchost.exe              1488 Services          0      28,812 K
WUDFHost.exe             1508 Services          0      81,092 K
fontdrvhost.exe         1532 Services          0      12,856 K
svchost.exe              1552 Services          0      73,888 K
svchost.exe              1644 Services          0      52,116 K
svchost.exe              1692 Services          0      33,792 K
WUDFHost.exe             1804 Services          0      49,856 K
svchost.exe              1992 Services          0      35,364 K
svchost.exe              2012 Services          0      29,044 K
svchost.exe              1076 Services          0      35,276 K
svchost.exe              1092 Services          0      37,856 K

```

• Powershell

```

PS C:\> Get-WmiObject Win32_Processor | Select LoadPercentage | Format-List

LoadPercentage : 32

PS C:\> Get-WmiObject Win32_Processor | Measure-Object -Property LoadPercentage -Average | Select Average

Average
-----
 27

PS C:\> Get-Counter -ComputerName localhost '\Process(*)\% Processor Time' ` 
>> | Select-Object -ExpandProperty countersamples ` 
>> | Select-Object -Property instancename, cookedvalue ` 
>> | Sort-Object -Property cookedvalue -Descending | Select-Object -First 20 ` 
>> | ft InstanceName,@{L='CPU';E={$_.Cookedvalue/100).ToString('P')} } -AutoSize

InstanceId CPU
-----
  total 1,182.05%
idle 1,039.52%
firefox 49.57%
firefox 24.79%
time 17.04%
chrome 12.39%
dwm 12.39%
chrome 7.75%
system 6.20%
mcshield 4.65%
audiogd 3.10%
chrome 1.55%
svchost 1.55%
firefox 1.55%
slack 0.00%
runtimebroker 0.00%
mctray 0.00%
lync 0.00%
jusched 0.00%
slack 0.00%

```

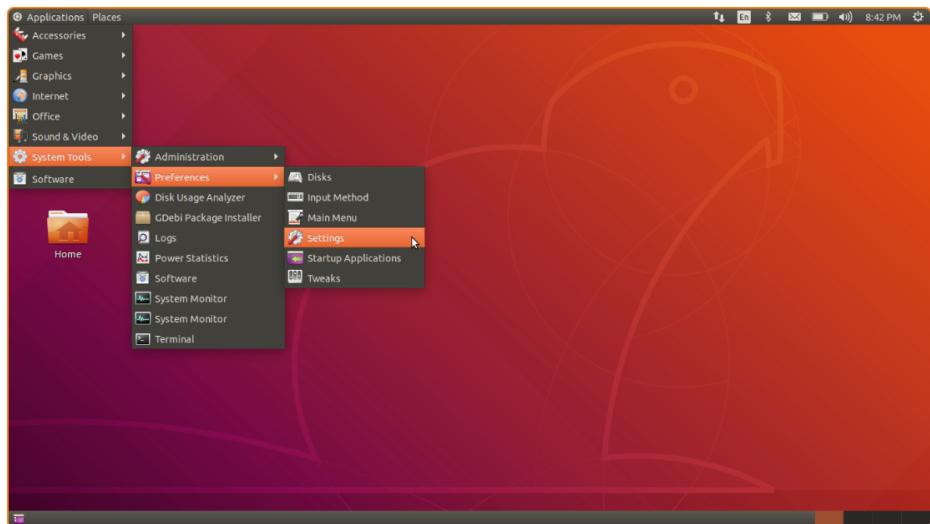
Linux

Linux is an operating system developed by the Finnish programmer Linus Torvalds. It was created as free software. Its source code is publicly available and can be modified by users. As a result, there are currently many Linux distributions (versions) on the market, and the future of Linux will depend only on the needs of its users. Due to the open source nature, rich library of additional packages, high security and stability, Linux is used in many solutions, such as e-mail and web servers or databases. The largest corporate banks operate on Linux. As in Windows, there is a graphical user interface (although you can use a system with a text interface only) and a special text interface, the so-

- Test 1st attempt | after the block: HTML,CSS,JS
- Test 2nd attempt | after the block: HTML,CSS,JS
- Frontend Technologies coursebook
- Frontend technologies slides
- Frontend Technologies tasks
- Test 1st attempt | after the block: FRONTEND TECHNOLOGIES (ANGULAR)
- Test 2nd attempt | after Frontend technologies
- Spring coursebook
- Spring slides
- Spring tasks
- Test 1st attempt | after the block: spring
- Test 2nd attempt | after the block: spring
- Mockito
- PowerMock
- Testing exceptions
- Parametrized tests
- Final project coursebook
- Final project slides
- Class assignments

called **terminal**.

• GUI



• Terminal

```
jpp@jpp:/boot
jpp@jpp:/boot$ ls -la
total 39132
drwxr-xr-x  3 root root    4096 2011-05-13 08:52 .
drwxr-xr-x 23 root root    4096 2011-05-04 09:27 ..
-rw-r--r--  1 root root  700761 2011-03-18 16:33 abi-2.6.35-28-generic
-rw-r--r--  1 root root 730039 2011-04-11 01:24 abi-2.6.38-8-generic
-rw-r--r--  1 root root 122616 2011-03-18 16:33 config-2.6.35-28-generic
-rw-r--r--  1 root root 130313 2011-04-11 01:24 config-2.6.38-8-generic
drwxr-xr-x  3 root root   12288 2011-05-04 09:32 grub
-rw-r--r--  1 root root 11008098 2011-04-15 08:58 initrd.img-2.6.35-28-generic
-rw-r--r--  1 root root 13134896 2011-05-13 08:52 initrd.img-2.6.38-8-generic
-rw-r--r--  1 root root 160988 2010-10-22 09:08 memtest86+.bin
-rw-r--r--  1 root root 163168 2010-10-22 09:08 memtest86+_multiboot.bin
-rw-r--r--  1 root root 2344143 2011-03-18 16:33 System.map-2.6.35-28-generic
-rw-----  1 root root 2654256 2011-04-11 01:24 System.map-2.6.38-8-generic
-rw-r--r--  1 root root   1336 2011-03-18 16:35 vmcoreinfo-2.6.35-28-generic
-rw-----  1 root root   1368 2011-04-11 01:26 vmcoreinfo-2.6.38-8-generic
-rw-r--r--  1 root root 4342384 2011-03-18 16:33 vmlinuz-2.6.35-28-generic
-rw-----  1 root root 4523936 2011-04-11 01:24 vmlinuz-2.6.38-8-generic
jpp@jpp:/boot$
```

MacOS

MacOS is an operating system from the Unix family (similar to Linux). It is officially available only for devices manufactured by Apple. The strengths of macOS include: efficiency, a simple user interface, less malware – like viruses and Trojans – compared to other operating systems. Like Linux, macOS has access to the graphics mode and the text equivalent of a **Terminal**.

• GUI





- Terminal

```
[w8r:react-ionize-master alexander$ ls -lash
total 464
  0 drwxr-xr-x@ 18 alexander  staff   612B Apr 12 09:50 .
  0 drwxrwxr-x+ 17 alexander  staff   578B Apr 13 15:04 ..
  8 -rwxr-xr-x@  1 alexander  staff    48B Apr 12 09:50 .babelrc
  8 -rwxr-xr-x@  1 alexander  staff   128B Apr 12 09:50 .flowconfig
  8 -rwxr-xr-x@  1 alexander  staff    37B Apr 12 09:50 .gitignore
  8 -rwxr-xr-x@  1 alexander  staff   1.0K Apr 12 09:50 LICENSE
16 -rwxr-xr-x@  1 alexander  staff   7.5K Apr 12 09:50 README.md
  8 -rwxr-xr-x@  1 alexander  staff   703B Apr 12 09:50 TODO.md
  0 drwxr-xr-x@ 12 alexander  staff   408B Apr 12 09:50 examples
  0 drwxr-xr-x@  3 alexander  staff   102B Apr 12 09:50 flow-typed
  0 drwxr-xr-x@  4 alexander  staff   136B Apr 12 09:50 interfaces
  8 -rwxr-xr-x@  1 alexander  staff    67B Apr 12 09:50 mocha-webpack.opts
  8 -rwxr-xr-x@  1 alexander  staff   2.3K Apr 12 09:50 package.json
  0 drwxr-xr-x@  9 alexander  staff   306B Apr 12 09:50 src
  0 drwxr-xr-x@  8 alexander  staff   272B Apr 12 09:50 test
  8 -rwxr-xr-x@  1 alexander  staff   1.4K Apr 12 09:50 webpack.examples.config.
js
  8 -rwxr-xr-x@  1 alexander  staff   1.0K Apr 12 09:50 webpack.test.config.js
376 -rwxr-xr-x@  1 alexander  staff   185K Apr 12 09:50 yarn.lock
w8r:react-ionize-master alexander$ ]
```

What common feature is present in the Windows, Linux, and MacOS operating systems, as described in the document?

- All of them are developed by Microsoft.
- They are available only for devices manufactured by Apple.
- Each of them offers both a graphical user interface (GUI) and a text-based interface.
- Only Windows and MacOS belong to the Unix family of operating systems.

✓ Correct

Reset

Completed

Next Lesson