



Operating System

Revision 3



1. _____ is to decrease the time in which the resource is idle.
Resource sharing resource utilization resource speedup resource protection
2. In _____, when a running process waits for an I/O operation, the operating system selects another for execution.
Real-time systems time-sharing I/O bound systems multi-programming systems
3. In _____, the CPU executes multiple jobs by switching among them so frequently.
Multiprogramming time-sharing boot loader CPU scheduling
4. A _____ receives requests from the client systems, execute actions on the server and send results back to clients.
Multicore system file-server system real-time system compute-server system
5. The _____ is responsible for moving the data between its local buffer storage and the I/O device it controls.
System bus device controller processor disk
6. In dual mode operation, user processes execute in _____.
Free mode user mode kernel mode privilege mode
7. Constructing the operating system using the _____ approach results in poor system performance.
Monolithic hybrid microkernel layered
8. The _____ provides an interface to the services provided by the operating system.
Dispatcher system call interrupt vector kernel
9. The _____ is a segment of code that determines what action should be taken when an interrupt occur.
Interrupt service routine interrupt vector
Interrupt signal trap
10. A _____ system can have only one job (process) in memory at time.
Batch multiprogramming multitasking timesharing
11. The content of _____ can be changed but not frequently.
RAM ROM EEPROM registers
12. The OS must ensure correct computing by detecting errors in hardware or user programs. T/F
13. It is a programmatic way in which a computer program requests a service from the kernel of the OS.
System call App software System software source code
14. Device controllers provide an interface to the services provided by the OS. T/F
15. A device local buffer is a program in execution. T/F
16. The microkernel approach removes nonessential component from kernel and implement them as system programs. T/F
17. The bootstrap program is responsible for locating the kernel. T/F
18. In _____ clustering, two or more nodes are running applications and monitoring each other.
Client-server hot-stand-by symmetric asymmetric

19. Clustered systems are also known as _____ systems.
Distributed loosely coupled tightly coupled clustered
20. A cloud server provider have thousands of physical servers running millions of virtual machines. T/F
21. The OS provide application programmers with API to invoke services. T/F
22. Most operating systems do no adopt a single, strictly defined structure but rather they usually use a _____
Monolithic approach hybrid approach microkernel approach
layered approach
23. A _____ system is a collection of physically separate computer systems that are networked together.
Distributed multiprocessor batch clustered
24. The operating system consists of a kernel and a set of application programs. T/F
25. Fault tolerant systems can continue operating despite of failures. T/F
26. Using the _____ makes it is difficult to define the functionality of each layer.
Monolithic approach hybrid approach microkernel approach
layered approach
27. A batch system has the advantage of high CPU utilization. T/F
28. _____ system calls support request device, release device, read, write and reposition operations.
Device management Information maintenance
File management process control
29. _____ system calls support create, load, execute, terminate and abort operations.
Device management Information maintenance
File management process control
30. A special purpose processor supports a limited instruction set. T/F
31. The CPU can load instructions only from _____
Tap drive registers Main memory hard disk drive
32. System boot is the process of starting a computer by loading the kernel. T/F
33. The operating system should be aware of the errors that may occur in the system and take actions to handle them. T/F
34. _____ system calls support get time date and set time date operations.
Device management Information maintenance
File management process control
35. User mode has a undirect access to computer resources. T/F
36. The OS must provide processes with some means to perform I/O. T/F
37. The operating system ensure that all access to system resources is controlled. T/F

38. _____ system calls support send message, receive message and transfer status information operations.
Device management Information maintenance
File management Communication
39. _____ refers to the use of high speed memory to hold a copy of recently accessed data.
Bootting Caching Fetching Speedup
40. Some system calls require passing the parameters in the CPU registers. T/F
41. Using the _____ makes the OS difficult to implement and extend.
Monolithic approach hybrid approach microkernel approach layered approach
42. _____ allows device controller to transfer data directly between its local buffer and main memory.
DMA EEPROM RAM ROM
43. Using the _____ allows the OS to link in additional services via LKMs, either at boot time or at run time.
modules approach hybrid approach microkernel approach none
44. Multiprocessor systems are also known as _____ systems.
Distributed loosely coupled tightly coupled clustered
45. Some system calls require passing the parameters onto the stack by the process. T/F
46. Mobile computing refers to the use of handheld smartphones and tablet computers. T/F
47. The operating system allows processes to exchange information between computers over a network. T/F
48. A multicore system is less efficient than multiple chips with single cores. T/E
49. An interrupt is a signal that is generated when some event occurs. T/F
50. Application programs run in _____ mode.
User kernel system privilege
51. Which of the following is related to real-time operating system?
Execution of programs concurrently have a time as key parameter
Serving several users at a time none of all
52. Which of the following is not the function of an operating system?
Memory management CPU management
I/O and file management debugging programs
53. A _____ process shares data with other executing processes.
Batch independent cooperating interactive
54. Privilege instruction can execute only in _____ mode.
Application User Kernel Symmetric
55. _____ provide user authentication and extend to defending external I/O devices from invalid access attempts.

- Protection security privacy none of all
56. _____ involves ensuring that all access to system resources is controlled.
- Protection security privacy none of all
57. In _____, if a program crashes, the entire system will be halted.
- User mode kernel mode device management none of all
58. In _____, if a program crashes, only that program will be halted.
- User mode kernel mode device management none of all
59. the components of computer system include-----
- Hardware Operating system Application programs All
60. Operating system is a-----
- Software hardware peripheral device other
61. Kernel is a program which is running
- While the program is executing at all times on the computer.
- Only at startup Other
62. Operating system is a Collection of programs that -----
- Control the application software.
- Link between the hardware and software.
- Manage resources shared between simultaneous programs.
- All of the above
63. ----- is a Programming interface to the services provided by the OS.
- API System call Functions other
64. System call is accessed by-----
- API System call Functions other
65. System calls are written in ----- language.
- C and C++ C# and C++ swift other
66. Modern OSs are ----- operating systems.
- Not interrupt driven Interrupt driven
67. _____ is a software-generated problem caused either by an error or user request
- A trap An interrupt User mode
68. _____ is something generated by the hardware device and they don't happen at predictable places in the user code.
- Interrupt Event other
69. Operating system run in _____
- kernel mode user mode dual mode
70. If mode bit is 0, that indicates that the current mode is-----
- kernel mode user mode dual mode
71. if mode bit is 1, that indicates that the current mode is-----

kernel mode

user mode

dual mode

72. _____ is used to prevent a user program from getting stuck in an infinite loop or not calling system services and never returning control to the OS.

Event

interrupt

timer

trap

73. can be set to interrupt the computer after a specified period.

Event

Interrupt

Timer

Trap

74. In _____ clustering, if the active server fails, the hot standby node become the active server.

Symmetric

peer-to-peer

client-server

asymmetric

75. In _____ multiprocessing, all processors are peers where each processor can perform any task.

Symmetric

peer-to-peer

client-server

asymmetric

76. The _____ is stored in low memory and holds the addresses of the interrupt handlers.

Trap

interrupt vector

interrupt service routine

system call

77. In multiprocessor system, the speedup ratio with N processors is _____ N.

Less than

more than

equal to

divide by

78. In cloud computing, a _____ cloud is available to anyone via the Internet.

Private

public

hybrid

restricted

79. _____ clustering supports high performance computing.

Hot-stand-by

asymmetric

symmetric

client-server

80. The _____ define the ways in which computer resources are used to solve users' computing problems.

Hardware

Application programs.

Interrupt

None of all

81. The operating system can be viewed as a _____ as it acts as the manager of resources and decides how to allocate them to specific programs and users.

Control program

Resource allocator

Resource binding

None of all

82. The operating system can be viewed as a _____ as it controls the I/O devices and manages the execution of programs.

Control program

Resource allocator

Resource binding

None of all

83. System programs are associated with the operating system but are not necessarily part of the kernel. T/F

84. A modern general-purpose computer system consists of one or more CPU s and a number of device controllers connected through a common_____.

Device driver

Bus

Controller

None of all

85. In modern computers, a common bus provides access between device controllers and a shred memory. T/F

86. Each device controller is in charge of all types of devices. T/E

87. The CPU and the device controllers can execute in parallel. T/F

88. A memory controller synchronizes access to the memory. T/F
89. A _____ program is a simple program that runs when the computer is powered up or rebooted.
 RAM ROM Bootstrap Trap
90. Bootstrap program is stored in ROM or EEPROM. T/F
91. Bootstrap program is called _____ as it stored in ROM.
 Software Hardware Firmware None of all
92. Bootstrap program initializes all aspects of the system. T/F
93. The software program locates the operating system kernel, loads it into memory, and starts its execution. T/F
94. In computer system, the occurrence of an event is signaled by an interrupt from the hardware only. T/F
95. A hardware-generated interrupt occurs by sending a signal to the CPU by way of the system _____.
 Controller Driver Bus All mentioned
96. A software-generated interrupt occurs by executing a system call. T/F
97. A hardware generated interrupt is caused by either an error or a user request. T/F
98. All computer architectures has the same set of interrupts. T/F
99. Each interrupt has a corresponding _____ that must be executed when the interrupt occurs.
 Interrupt vector Interrupt handler Interrupt simulator None of all
100. The interrupt request specifies a number used as an index to obtain the address of the interrupt service routine from the interrupt vector. T/F
101. When an interrupt occurs, the CPU stop what it is doing and transfers execution to the _____.
 Interrupt trap Interrupt handler Interrupt Number None of all
102. After completing the execution of the interrupt handler, the CPU _____ the interrupted process.
 Skips Stops Resumes Ignores
103. The main memory is implemented as DRAM. T/F
104. Secondary storage can be viewed as a cache for main memory. T/F
105. When the CPU needs to access data, it first checks whether it is in the cache. T/F
106. A copy of the same data doesn't exist in several caches. T/F
107. _____ refers to ensuring that an update to some data in a cache is reflected immediately in other caches containing a copy of that data.
 Cache memory Cache resuming Cache coherency None of all
108. Cache coherency ensure that caches are consistent. T/F
109. A device controller has a local buffer storage and a set of registers. T/F
110. The _____ is responsible for moving the data between the peripheral devices that it controls and its local buffer storage.
 Device driver Device buffer device controller None of all

111. Operating systems have a device driver for each device controller. T/F
112. Device controller understands the device and provides a uniform interface to the device. T/F
113. In I/O operation, the device driver loads the appropriate registers within the device controller. T/F
114. In I/O operation, the device controller determine its action based on the contents of the _____.
Cache RAM Registers Buffer
115. In I/O operation, once the transfer of data is complete, the device controller informs the device driver via an _____.
DMA Bus Buffer Interrupt
116. In I/O operation, once the transfer of data is complete, the device driver returns control to the operating system. T/F
117. I/O operation is interrupt driven. T/F
118. Traditional I/O operation is fine for moving any amounts of data. T/E
119. Traditional I/O operation can produce less overhead. T/E
120. In _____, the device controller transfers an entire block of data directly from its buffer storage to memory with no intervention by the CPU.
Trap Interrupt DMA Thread
121. In DMA, Only one interrupt is generated per _____.
1 Block 2 Blocks 1 Byte 2 Bytes
122. Modern computer system use DMA operation to reduce the performance overhead. T/F
123. A general-purpose processor supports a complete instruction set T/F
124. Single-processor system contains only one special purpose register. T/E
125. Multiprocessor systems can cost _____ equivalent multiple single-processor systems.
More than Less than Equals None of all
126. In multiprocessor system, the failure of one processor will halt the system. T/E
127. Multiprocessor system increased reliability in many applications. T/F
128. Multiprocessor system has the advantage of Graceful degradation. T/F
129. In multiprocessor system, _____ is the ability to continue providing service proportional to the level of surviving hardware.
Fault tolerance Graceful degradation Paging Multithreading
130. Fault tolerant system requires a mechanism to allow the failure to be detected, diagnosed, and, if possible, corrected. T/F
131. Symmetric multiprocessing defines a boss-worker relationship. T/F
132. In _____, the boss processor schedules and allocates work to the worker processors.
symmetric multiprocessing Asymmetric multiprocessing
Asymmetric single-processing symmetric single-processing
133. Most common systems use Symmetric multiprocessing rather than Asymmetric multiprocessing. T/F

134. On-chip processor communication is slower than between-chip processor communication. T/F
135. One chip with multiple cores uses less power than multiple single-core chips. T/F
136. Multicore systems are multiprocessor systems. T/F
137. All multiprocessor systems are multicore systems. T/F
138. Clustered computers share storage and are closely linked via a _____
MAN WAN Wifi LAN
139. Clustering is usually used to provide high-availability service. T/F
140. In clustered system, service will not continue if one or more nodes fail. T/F
141. Clustered system provide high-performance computing environments. T/F
142. Clustered systems use _____ technique to enable application to run concurrently on all computers.
Segmentation Paging Simultaneously Parallelization
143. When the computer system is executing on behalf of a user application, the system is in _____ mode.
VMM User Kernel None of all
144. When a user application requests a service from the operating system, the system must transition from user to kernel mode. T/F
145. At system boot time, the hardware starts in _____ mode.
VMM User Kernel None of all
146. Whenever an interrupt occurs, the hardware switches from kernel mode to user mode. T/F
147. Whenever the operating system gains control of the computer, it is in kernel mode. T/F
148. The _____ operation allows for protecting the operating system from errant users-and errant users from one another.
Trap Interrupt DMA Dual mode
149. The hardware allows privileged instructions to be executed only in _____ mode.
VMM User Kernel None of all
150. If an attempt is made to execute a privileged instruction in user mode, a traps is sent to the operating system. T/F
151. I/O control, timer management, and interrupt management are performed in kernel mode. T/F
152. VMM has more privileges than user processes but fewer than the kernel. T/F
153. Timer ensures that the operating system maintains control over the CPU.
154. In computer system, a timer is implemented by a fixed-rate clock and a counter. T/F
155. We can use the timer to prevent a user program from running too long. T/F
156. Instructions that modify the content of the timer are executed in the user mode. T/F
157. In batch system, Processed jobs in bulk, one job after another. T/F
158. In batch system, if the running job needs to wait for an I/O operation, the CPU remains idle waiting for the job. T/F

159. In batch system, the user prepares a job using card punches and submits it to the operator. T/F
160. In batch system, the system output consists of program results and a dump of final memory contents. T/F
161. The main task of the operating system in a mainframe system is to perform automatic job sequencing. T/E
162. In batch system, there is no direct interaction between the user and the computer system. T/F
163. In desktop computers, OS focuses on achieving user convenience and responsiveness. T/F
164. In a multiprogramming system, several jobs are kept in main memory, and the CPU is multiplexed among them. T/F
165. Multiprogramming decreases CPU utilization. T/E
166. CPU scheduling allows for selecting a job for execution from the set of jobs residing in memory. T/F
167. Multiprogramming system has the advantage of increased CPU utilization than batch system. T/F
168. Multiprogramming system does not support direct interaction between the user and the computer system. T/F
169. Time-sharing (or multitasking) system is an extension of multiprogramming systems. T/F
170. A time-sharing system provides indirect communication between the user and the system. T/E
171. Distributed computing is the use of distributed systems to solve single large problems. T/F
172. A server system can be categorized as a computer server or a file server. T/F
173. In Peer-to-peer (P2P), all nodes are peer and cooperate together. T/F
174. In Peer-to-peer (P2P), each node may act as either a client or a server, depending on whether it is requesting or providing a service. T/F
175. Peer-to-peer system has the advantage of being able to provide the service by several nodes. T/F
176. In virtualization, the physical computer is referred to as host while the virtual machine is referred to as guest. T/F
177. In virtualization, the guest virtual machine has a separate guest operating system. T/F
178. Cloud computing is a type of computing that delivers computing, storage, and even applications as a service across a network. T/F
179. In cloud computing, Users pay based on how much resources they user. T/F
180. In cloud computing, public cloud is used only by the company owning it. T/E
181. In cloud computing, SAAS provides one or more applications available via the internet. T/F
182. In cloud computing, IAAS provides servers or storage available over the internet. T/F
183. Real-Time embedded operating system provide limited features with little or no user interface. T/F
184. A real-time system has well-defined, fixed time constraints. T/F
185. In real-time system, processing must be done within the defined constraints, or the system will fail. T/F
186. User processes can execute I/O operations directly. T/E

187. The operating system should enable user processes to exchange information. T/F
188. The operating-system ensure correct computing by detecting errors in the CPU. T/F
189. When a user process executes a system call, the system traps to the operating system. T/F
190. A monolithic structure places all of the functionality of the kernel into a single, static binary file that runs in a single address space. T/F
191. In monolithic structure, communication within the kernel is fast thus there is very little overhead. T/F
192. In layered approach, changes in one component affect the others. T/E
193. In microkernel approach, new services can be added as system programs and do not require modification of the kernel. T/F
194. In microkernel approach, it is difficult to extend the operating-system. T/E
195. Microkernel approach provides more security and reliability. T/F
196. In both modules and layered approach, each kernel section has a defined and protected interface. T/F
197. In modules approach, any module can easily call any other module. T/F
198. In modules approach, the primary module has only core functions. T/F
199. In modules approach, modules need to use message passing to communicate. T/E
200. Multiprogramming is the technique of using multiple CPUs to run programs. T/F
201. Batch processing implies a high level of interaction between the user and the program.
202. Real time systems are _____.
A. primarily used on mainframe computers. B. used for monitoring events as they occur.
C. used for program development. D. used for real time interactive users.
203. Kernel is considered as the critical part of the operating system. T/F
204. Which of the following is not the function of Operating System?
A. Process Management B. Memory Management
C. Device Management D. Clock Management
205. _____ operating system pays more attention on the meeting of the time limits.
A. Distributed. B. Network. C. Real time. D. Online.
206. In the _____ method of data transfer, the participation of the processor is eliminated during data transfer.
A. buffering. B. caching. C. direct memory access. D. indirect memory access.
207. _____ runs on computer hardware and serve as platform for other software to run on.
A. Operating system. B. Application software.
C. System software. D. Compiler.
208. The Hardware mechanism that enables a device to notify the CPU is called _____.
A. polling. B. interrupt. C. system Call. D. system request.

209. The ability to withstand equipment failures in individual processors to continue operation is referred to as _____.
A. fault tolerance. B. data flow computer.
C. multiprocessor. D. array processor.
210. A kernel code that is executed in response to an interrupt is _____.
A. interrupt handler. B. interrupt vector. C. interval timer. D. interrupting clock.
211. In a monolithic kernel, operating system runs in
A User mode B Supervisor mode C User/supervisor mode D None of these
212. An operating system is :
A Collection of hardware components
B Collection of input-output devices
C Collection of software routines
D All the above
213. Loading operating system from secondary memory to primary memory is called _____.
A Compiling B Booting C Refreshing D Reassembling
214. Multiprogramming means
A Executing more than one program at a time
B Ability to accommodate multiple tasks in main memory
C Presence of multiple processors in one system
D All the above
215. To access the services of operating system, the interface is provided by the _____.
a) System calls b) API c) Library d) Assembly instructions
216. Kernel is made of various modules which can not be loaded in running operating system. T/F
217. Which one of the following error will be handle by the operating system?
a) power failure b) lack of paper in printer
c) connection failure in the network d) all of the mentioned
218. The systems which allow only one process execution at a time, are called _____.
a) uniprogramming systems
b) uniprocessing systems
c) unitasking systems
d) none of the mentioned
219. What is the degree of multiprogramming?
a) the number of processes executed per unit time
b) the number of processes in the ready queue
c) the number of processes in the I/O queue
d) the number of processes in memory
220. What is the objective of multiprogramming?
a) Have a process running at all time

b) Have multiple programs waiting in a queue ready to run

c) To increase CPU utilization

d) None of the mentioned

221. The memory resident portion of operating system is called the

A. Registry

B. API

C. CMOS

D. Kernel

222. Which of the following memory unit that processor can access more rapidly

A. Main Memory

B. Virtual Memory

C. Cache memory

D. Read Only Memory

223. The primary purpose of an operating system is to:

A. make computer easier to use

B. keep system programmers employed

C. make the most efficient use of the hardware

D. allow people to sue the computers

224. DMA is used for _____

a) High speed devices(disks and communications network)

b) Low speed devices

c) Utilizing CPU cycles

d) All of the mentioned

225. In an interrupt driven input/output the CPU receives an interrupt when the device is ready for the next byte. T/F

226. Which operation is performed by an interrupt handler?

a) Saving the current state of the system

b) Loading the interrupt handling code and executing it

c) Once done handling, bringing back the system to the original state it was before the interrupt occurred

d) All of the mentioned

227. CPU fetches the instruction from memory according to the value of _____

a) program counter

b) status register

c) instruction register

d) program status word

228. A memory buffer used to accommodate a speed differential is called _____

a) stack pointer

b) cache

c) accumulator

d) disk buffer

229. The main memory accommodates _____

a) operating system

b) CPU

c) user processes

d) all of the mentioned

230. A processor needs software interrupt to obtain system services which need execution of privileged instructions. T/F

231. A set of extended instructions providing an interface between the Operating System and the user programs, is called a _____

(A) Machine call

(B) System call

(C) Instruction call

(D) Service call

232. A ____ controls the execution of user programs to prevent errors and improper use of the computer.
(A) control program (B) contribute program (C) supplement program (D) supply program
233. The operating system provides special routines called ____ to support the specific behavior of individual device.
(A) Managers (B) Programs (C) Application (D) Device drivers
234. ____ is set of computer programs that run or control computer hardware and acts as an interface between application programs and users.
(A) The CPU (B) An operating system (C) Object code (D) A compiler
235. When a interrupt occurs, an operating system may change state of interrupted process to blocked and schedule another process. T/F
236. Symmetric multiprocessing architecture of the computer system uses shared
a. bus b. memory c. processors d. both a and b
237. In asymmetric clustering other machines perform operations while one machine is in
a. hot standby mode b. standby mode c. reset mode d. undefined mode
238. Secondary memory of the computer system is also called
a. non volatile b. volatile c. reserved d. small
239. Environment in which programs of the computer system are executed is:
a. operating system b. nodes c. clustered system d. both a and b
240. Clusters of the computer system can be used more efficiently using
a. serialization b. parallelization c. LAN d. WAN
241. A properly designed operating system must ensure that an incorrect (or malicious) program cannot cause other programs to execute
a. incorrectly b. Correctly c. both a and b d. None
242. Table of pointers for interrupt to be executed contains the
a. interrupts b. programs c. addresses d. compilers
243. The user view of the system depends upon the
a. CPU b. software c. hardware d. interface
244. Clustered computer systems are normally linked via
a. LAN b. WAN c. PAN d. TAN
245. Multi-processor systems of the computer system has advantage of
a. cost b. reliability c. uncertainty d. scalability
246. Each node in clustered system of the computer system monitors
a. itself b. One other node c. neighboring node d. One or more nodes
247. A bit that selects the mode of the operating system is called
a. kernel bit b. user bit c. mode bit d. system bit
248. More devices can be connected to computer system through

- a. buffers b. interrupt c. registers d. controllers

249. System resources of computer system can be utilized better in multi program environment T/F

250. Static programs of the computer system are stored in _____

- a. RAM b. ROM c. hard disk d. CD

251. Secondary memory of the computer system is able to store

- a. program b. data c. instructions d. both a and b

252. Multiprocessor environment of the computer system uses

- a. parallel resources b. dedicated resources c. shared resources d. both a and b

253. A software may triggers an interrupt executing a special operation it is called as?

- a. System Call b. Application Call c. software Call d. kernel call

254. All components of computer system are connected through _____

- a. cache b. registers c. path d. bus

255. Symmetric multiprocessing in the computer system does not use

- a. master relationship b. slave relationship
c. master slave relationship d. serial processing

256. System containing only one processor is called

- a. multiprocessor b. single processor
c. dual processor d. specific processor

257. Along with kernel, operating system also contains

- a. system application b. software application
c. hardware resources d. both a and b

258. Division by zero error are caused by

- a. user defined code b. OS code c. process d. interrupt

259. Jobs of the computer system for execution are loaded into

- a. device b. registers c. memory d. both a and b

260. In symmetric multiprocessing system N number of CPU can run

- a. N-1 processes b. N+1 processes c. N processes d. N-2 processes

261. For avoiding programs of the operating system to get stuck, system users use

- a. trap b. timers c. process d. programs

262. Multiprocessing provided by the computer system has a type of

- a. symmetric multiprocessor b. asymmetric multiprocessing
c. symmetric multiprocessing d. both b and c

263. More than one processors system is called _____

- a. multiprocessor b. single processor
c. dual processor d. specific processor

264. Device controller is the controller of the computer system that contains

- a. buffers b. registers c. cache d. both a and b

M.A.S