VIRTUAL UNIVERSITY OF PAKISTAN

03126968553

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LECTURE WISE NOTES:
Short Questions File & MCQ's File
03126968553

COURSE: CS101

MCQ's File For Midterm

Module # 01

What encompasses the physical components of a computer system?
A) Hardware
B) Software
C) Networks
D) Robotics

Which discipline involves designing and constructing executable computer programs for specific tasks?
A) Hardware
B) Software
C) Programming
D) Networks

What constitutes a set of instructions for a computer, directing it on how to perform a task?
A) Hardware
B) Software
C) Networks
D) Robotics

What is the primary purpose of a computer network?
A) Generating images
B) Sharing resources
C) Managing databases
D) Ensuring security
Answer: B) Sharing resources

Which field involves the generation of images with computer assistance?
A) Graphics
B) Robots
C) Database
D) Security

What defines a machine capable of automated actions, often programmable by a computer?
A) Graphics
B) Robots
C) Database
D) Security

What is a database primarily structured for?
A) Storing information
B) Generating images
C) Sharing resources
D) Ensuring security

Which term refers to controls ensuring confidentiality, integrity, and availability in computer systems?
A) Graphics
B) Robots
C) Database
D) Security

What comprises a set of instructions for performing a specific task?
A) Robot
B) Database
C) Algorithm
D) Information Processing

Which domain is NOT listed as an application of Computer Science?
A) Banks
B) Hospitals
C) Agriculture
D) Service Industry

According to the text, where do most job opportunities lie for Computer Science in Pakistan?
A) Hospitals
B) Telecom
C) Pak Army
D) Service Industry

Which area has been ranked as the Number 1 job in the US, according to Forbes?
A) Artificial Intelligence and Machine Learning
B) Data Science
C) Virtual Reality
D) IoT

Which role focuses on the visual elements of a software or application?
A) Back-End Developer
B) Front-End Developer
C) UI Designer

D) Full-Stack Engineer

According to the text, who might find this Computer Science course beneficial?
A) Only Computer Science students
B) Only Engineering students
C) All fields of study
D) Only Business students

Why is studying the basics of Computer Science essential, according to the text?
A) It's mandatory for business students.
B) It's essential for engineering students.
C) It's useful across various fields of study.
D) It's only required for Computer Science students.

Module # 02, 03

What is the primary objective of Breadth First Learning in Computer Science?
A) Detailed understanding of a single course
B) Introduction to numerous CS courses
C) Specialized programming skills
D) In-depth knowledge of networking concepts

Which module focuses on the historical evolution of computers?
A) Search Engine Usage Techniques
B) History of Computing
C) Data Storage
D) Data Manipulation

What is the primary topic covered in "Data Storage"?
A) Understanding data manipulation
B) Storing data in the hardware
C) Algorithms in data storage
D) Networking concepts

What does "Data Manipulation" primarily involve?
A) Storing data efficiently
B) Processing and manipulating data
C) Understanding data abstraction
D) Exploring AI concepts

What is the primary function of an Operating System?
A) Managing data storage
B) Networking communication
C) Overseeing the computer system
D) Developing algorithms

What is the focus of "Algorithms" in Computer Science?
A) Understanding programming languages
B) Studying software engineering
C) Fundamental steps to perform tasks
D) Exploring data abstraction

Which topic covers the basics of programming languages like C++?
A) Algorithms
B) Data Abstraction
C) Programming Languages
D) Software Engineering
Answer: C) Programming Languages

What aspect of software development does "Software Engineering" primarily cover?
A) Detailed programming techniques
B) Requirement gathering to testing
C) Data storage management
D) Advanced networking concepts

What purpose does "Data Abstraction" serve in complex system design?
A) Simplifying system comprehension
B) Enhancing networking protocols
C) Optimizing hardware components
D) Streamlining software implementation

What is the primary focus of "Database Systems" in Computer Science?
A) Networking protocols
B) Data storage in hardware
C) Storing and linking data systematically
D) Advanced programming techniques

What defines the field of "Artificial Intelligence"?
A) Advanced hardware development
B) Intelligent computer systems
C) Advanced database structures
D) Data storage and retrieval

What is the focus of understanding "CS impact on society"?
A) Technological advancements
B) Environmental impacts
C) Social and human effects
D) Economic consequences

What does the segment "Content Filtering, Spam, International laws" primarily cover?
A) Legal and ethical issues in computing
B) Advanced networking protocols
C) Database security measures
D) AI algorithms for spam detection

What is the primary function of a word processor like Microsoft Word?
A) Creating web pages
B) Generating presentations
C) Building editable word documents
D) Developing database systems

Which specialized tool focuses on designing and animating presentation slides?
A) Microsoft Word
B) Dreamweaver
C) Microsoft Excel
D) Microsoft PowerPoint

What is the primary purpose of software like Microsoft Excel?
A) Creating web pages
B) Developing presentations
C) Performing calculations on data
D) Managing database systems

How is the knowledge of "Database MS Access" applied?
A) Web Page Development
B) Spreadsheet calculations
C) Database implementation
D) Presentation design

What does "Web Page Development" involve?
A) Spreadsheet calculations
B) Presentation design
C) Creating web pages using tools like Dreamweaver
D) Developing database systems

What does the term "Query" refer to in the context of search engines?
A) A programming language
B) A set of words used for searching
C) A specialized networking protocol
D) A set of instructions for the computer

What is the primary focus of understanding "How Google Works"?
A) Google's functionalities
B) Techniques for query formulation
C) Utilizing the microphone option
D) Flipping a virtual coin

How is the microphone option in Google utilized?
A) Formulating queries using voice commands
B) Flipping a virtual coin
C) Capitalizing text in queries
D) Filtering spam content

What purpose does the double quotation mark serve in Google searches?
A) To differentiate between case-sensitive queries
B) To indicate specific search terms
C) To signify voice-based searches
D) To emphasize important keywords

How does Google treat capitalization in search queries?
A) It distinguishes between capital and small letters
B) It ignores case sensitivity in search
C) It prioritizes capitalized queries
D) It filters out queries in lowercase

What is the primary function of capitalization in Google searches?
A) To emphasize important keywords
B) To enhance search engine ranking
C) To differentiate between different languages
D) It serves no specific purpose in Google searches

What does the term "Case-insensitive" mean in the context of Google searches?
A) Google ignores certain case-sensitive queries
B) Google prioritizes capitalized queries
C) Google emphasizes specific search terms
D) Google treats capital and small letters equally

Module # 04, 05

What query format can be used to find the weather for a specific location on Google?
A) Location + Weather
B) Weather Location
C) Weather in Location
D) Location - Weather

How can calculations be performed on Google?
A) Using specific calculator commands
B) Typing equations directly
C) Accessing a dedicated calculator tool
D) Activating the math search mode

What query would perform the operation "80/100*200" on Google?
A) 80100/200
B) 80/100200
C) 80-100200
D) 80+100200

4. How can you search for the Pakistan Cricket team on Google?
A) Search: Pakistan Cricket team
B) Pakistan Cricket team @Google
C) Google Search: Pakistan Cricket team
D) Pakistan Cricket team

5. What type of query could help find information about Minar e Pakistan?
A) Pakistan - Minar
B) e Pakistan
C) Minar e Pakistan
D) Minar and Pakistan

Module 5: Search Operators (1)

6. How can you search for a specific topic on a particular social media platform using Google?
A) Prefix the query with "Social:"
B) Add the "@" symbol followed by the platform name
C) Use the "Hashtag:" command
D) Specify the platform name after the query

7. What's the method to search for a product within a specific price range on Google?
A) Product price range: 50000
B) Laptop pkr 50000
C) 50000 Laptop price
D) Product: 50000 pkr

What query format can help search for a particular hashtag on social media platforms?
A) "#education"
B) Education #
C) Hash: education
D) Education search: #

How can you exclude pages containing a specific word from a query?
A) Add the word in quotes
B) Use a minus sign (-)
C) Prefix the word with a hashtag
D) Add "Exclude:" before the word

What's the method to search for an exact phrase on Google?
A) Enclose the phrase in parentheses
B) Use the "Exact:" command
C) Enclose the phrase in double quotes
D) Use the "Precise:" command

What's the technique for wildcard-based searching on Google?
A) Using asterisks (*) around keywords
B) Including hyphens (-) between words
C) Using hash tags (#) for phrases
D) Enclosing phrases in brackets ([])

12. What's the technique to search within a specific numerical range on Google?
A) Using the "Range:" command
B) Including two dots (..) between numbers
C) Adding a percentage (%) to numerical values
D) Separating numbers with a slash (/)

13. What do Boolean operators "AND" and "OR" do in Google searches?
A) They specify exact matches
B) They exclude certain words from results
C) They refine the search based on price
D) They refine search results based on words' relationships

14. How can you limit a search to a specific website using Google?
A) Website: "site.com"
B) Site: "site.com"
C) "site.com" search
D) Site search: "site.com"

15. What's the command to find related websites to a specified domain?
A) "Related:" domain
B) Similar: domain
C) Relation: domain
D) Related: domain.com

What command would you use to view a cached version of a website on Google?
A) Cached: domain
B) Cache: domain
C) View: cache domain
D) Cache view: domain

How can you filter search results for a specific file type, like PDFs?
A) File: PDF
B) Type: PDF
C) Format: PDF
D) Filetype: PDF

Which operator would you utilize to explore pages containing the exact phrase "Virtual University"?
A) "Virtual University" exact
B) Phrase: "Virtual University"
C) Exact: "Virtual University"
D) "Virtual University" quotation

What's the operator to search for a specific file extension like PDF?
A) Ext: PDF
B) File: PDF
C) Type: PDF
D) Extension: PDF

20. How can you use the asterisk (*) in Google searches?
A) To highlight keywords
B) To denote plural forms
C) For wildcard-based searching
D) To indicate priority in search results

Module # 07 - 10

1. How would you search for stock trends for Apple using Google?
A) Stock Apple
B) $AAPL
C) stocks:aapl
D) Stock Market: Apple

2. Which operator would you utilize to view a map of Lahore on Google?
A) Map Lahore
B) Lahore Map
C) map:Lahore
D) Lahore: map

3. What operator helps find information about a specific movie on Google?
A) film:movie name
B) movie:movie name
C) search:movie name
D) movie - movie name

4. Where can you compare nutrient values for different foods?
A) https://www.nutritionfacts.com/
B) https://www.caloriecount.com/
C) https://www.myfooddata.com/
D) https://www.nutrientcompare.com/

5. How would you find the definition of "Computer" on Google?
A) Define:Computer
B) Computer Define
C) Term: Computer
D) Definition - Computer

6. Which link allows reverse image search on Google?
A) https://www.reverseimagesearch.com/
B) https://images.google.com/
C) https://www.searchbyimage.com/
D) https://www.reverseimage.com/

Module 8: Advanced Search Operators

7. What does the "Intitle" operator do in Google searches?
A) Finds pages with titles containing the exact phrase
B) Searches within the body of the document
C) Retrieves pages with similar titles
D) Finds titles of movie-related searches

8. How is "Allintitle" different from "Intitle" in Google searches?
A) It focuses on exact title matches
B) It searches titles and bodies of documents
C) It displays all titles regardless of relevance
D) It retrieves titles with any of the mentioned words

9. What does the "Inurl" operator do in Google searches?
A) Searches within the body of the document
B) Retrieves pages with URLs containing the exact phrase
C) Finds pages containing the mentioned query in the URL
D) Filters results based on location-specific URLs

10. How can "Proximity Search" be executed on Google?
A) Using parentheses ()
B) Using square brackets []
C) With quotation marks ""
D) With the AROUND() operator

11. What's the purpose of the "Tilt" operator on Google?
A) View tilted images
B) Tilt the search results page
C) Rotate the Google screen 360 degrees
D) Find tilted websites on Google

12. What might happen when searching sensitive terms repeatedly?
A) Enhanced search results
B) Customized advertisements
C) Law enforcement attention
D) Access to restricted sites

13. What should you avoid searching to prevent cyber-security threats?
A) "Free Music"
B) "Online Radio"
C) "Audio Downloads"
D) "Music Streaming"

14. Which searches could lead to unpleasant or distressing results?
A) "Smokers Lungs"
B) "Breathing Techniques"
C) "Respiratory Health"
D) "Healthy Lung Functions"

Module 10: Roots of Computing

15. What historical computing device had its roots in ancient China?
A) Gears
B) Abacus
C) Transistors
D) Punched Cards

16. Who applied the concept of representing information as holes in paper cards?
A) Charles Babbage
B) Blaise Pascal
C) Gottfried Wilhelm Leibniz
D) Herman Hollerith

17. Which technology involved the representation of data through gear positioning?
A) Transistors
B) Abacus
C) Technology of Gears
D) Punched Cards

18. What was used to speed up the tabulation process in the 1890 U.S. census?
A) Punched Cards
B) Mechanical relays
C) Abacus

D) Vacuum Tubes

19. Which term signifies machines that print results of computations on paper?
A) Electromechanical machines
B) Gears
C) Punched cards
D) Electronics-driven machines

20. What was the significant feature of the ENIAC computer?
A) Compact size
B) Vacuum tubes
C) Reduced electricity consumption
D) Use of capacitors for storage

Module # 11 - 15

1. What is the basic unit of storage in a computer?
A) Bytes
B) Bits
C) Words
D) Digits

2. How many patterns can two bits represent?
A) 2
B) 4
C) 6
D) 8

3. What is the bit pattern for decimal 8?
A) 00011000
B) 00001111
C) 00001000
D) 00100000

4. How many bits are in a byte?
A) 4
B) 6
C) 8
D) 10

5. What's the binary representation of decimal 7?
A) 1101
B) 0111
C) 1001
D) 1110

6. What does the "XOR" operation produce when both inputs are the same?
A) 0
B) 1
C) True
D) False

7. What is the result of the "OR" operation if one input is 1 and the other is 0?
A) 0
B) 1
C) True
D) False

8. What does the "Not" operation do with an input of 1?
A) Produces 0
B) Produces 1
C) Flips the bit
D) No change

9. If A=1010 and B=1100, what's the result of "AND" operation?
A) 1000
B) 1100
C) 1110
D) 1010

10. What's the result of the "XOR" operation between A=1111 and B=1010?
A) 0101
B) 1011
C) 1100
D) 1001

11. How many bits does a hexadecimal symbol represent?
A) 2 bits
B) 4 bits
C) 6 bits
D) 8 bits

12. What is the hexadecimal notation for the bit pattern 110111?
A) 6D
B) D6
C) 5D
D) D5

13. How many hexadecimal symbols represent 24 bits?
A) 3
B) 6
C) 8

D) 12

14. What is the hexadecimal equivalent of the binary 101010?
A) A2
B) 5A
C) AA
D) 2A

15. How many bits does a single hexadecimal symbol represent?
A) 2 bits
B) 4 bits
C) 6 bits
D) 8 bits

16. What is the function of a computer's main memory?
A) Storage of mass data
B) Temporary data storage
C) Permanent data storage
D) Cache memory

17. How is byte organization typically represented in computer science?
A) From right to left
B) From left to right
C) Bottom to top
D) Top to bottom

18. What does RAM stand for?
A) Read-Associated Memory
B) Random Access Memory
C) Readily Accessed Memory
D) Retention Addressed Memory

19. What is the primary characteristic of DRAM?
A) Low power consumption
B) High-speed access
C) Stores bits as tiny electric charges
D) Non-volatile memory

20. What distinguishes Synchronous DRAM from regular DRAM?
A) Increased storage capacity
B) Decreased time for data retrieval
C) Lower power consumption
D) Improved durability

What is the primary advantage of mass storage systems over main memory?
A) Volatility
B) Limited storage capacity
C) High cost

D) Large storage capacity

22. What is the average amount of time required for desired data to rotate around to the read/write head called?
A) Seek Time
B) Rotation Delay
C) Access Time
D) Transfer Rate

23. How does zoned-bit recording organize data on a disk?
A) Divides disk into equal-sized zones
B) Alternates data in and out of tracks
C) Writes data in concentric circles
D) Groups tracks based on data type

24. Which device utilizes thin spinning disks with magnetic coatings?
A) Solid-State Disk
B) Magnetic Tape
C) Flash Drive
D) Magnetic Disk

25. What does "RAM" stand for concerning a computer's mass storage system?
A) Random Access Method
B) Read-Associated Mechanism
C) Readily Accessed Memory
D) Random Access Memory

Module # 16 - 27

What is an example of a mass storage system that applies optical technology?
a) Hard Disk Drive
b) Compact Disk (CD)
c) USB Flash Drive
d) Magnetic Tape

What is the capacity of a sector in a Compact Disk (CD)?
a) 1 KB
b) 2 KB
c) 4 KB
d) 8 KB

Which optical system provides five times the capacity of DVDs?
a) CD
b) Blu-ray Disk (BD)
c) DVD
d) Flash Drive

What technology is used for data retrieval in optical systems like CDs and DVDs?
a) Magnetic field
b) Laser
c) Flash memory
d) Infrared

In terms of data retrieval speed, how does the optical system compare to magnetic systems with a single track?
a) Optical systems are faster
b) Magnetic systems are faster
c) They have the same speed
d) It depends on the specific technology

What type of technology is Flash Drive based on?
a) Magnetic
b) Optical
c) Electronic
d) Mechanical

What is the primary drawback of repeated erasing in Flash Drives?
a) Loss of data
b) Slow data access
c) Damage to the storage medium
d) Limited storage capacity
Answer: c) Damage to the storage medium

What is the main advantage of Solid State Disks (SSDs) over magnetic disks?
a) Larger capacity
b) Quiet operations and low access time
c) Lower cost
d) Compatibility with optical systems

Which memory card type is suitable for car navigation and cameras?
a) Compact Flash
b) Secure Digital (SD)
c) Memory Stick
d) XD-Picture Card

What is the capacity of an SDXC (Extendable Capacity) memory card?
a) 16 GB
b) 32 GB
c) 64 GB
d) Exceeds TB

How many bits are typically used to represent each textual symbol in ASCII?
a) 4 bits
b) 6 bits
c) 8 bits
d) 16 bits

What is the limitation of ASCII codes in terms of the number of characters?
a) 64 characters
b) 128 characters
c) 256 characters
d) 512 characters

Which organization introduced extensions to ASCII to support additional symbols?
a) ANSI
b) ISO
c) IEEE
d) Unicode

What is the unique feature of Unicode in comparison to ASCII?
a) Smaller character set
b) Larger character set
c) Limited language support
d) Only numeric representation

What is the purpose of UTF-8 in text encoding?
a) Reducing file size
b) Increasing processing speed
c) Supporting multiple languages
d) Enhancing graphical representation

How many bits are needed to store the numeric value 99 in binary notation?
a) 4 bits
b) 6 bits
c) 8 bits

d) 16 bits

What is binary notation used for representing numeric values?
a) Digits 0 to 9
b) Digits 0 and 1
c) Digits 0 to 7
d) Digits 0 to 15

How many numeric values can be represented with 16 bits in binary notation?
a) 64
b) 128
c) 256
d) 65536

What are the two representations of binary notation for numeric values mentioned in the upcoming modules?
a) Decimal and Octal
b) Two's complement and Floating point
c) Hexadecimal and Octal
d) Positive and Negative

In binary notation, what does having n bits allow us to represent?
a) n numbers
b) n/2 numbers
c) 2^n numbers
d) 2n numbers

What does a pixel represent in the context of images?
a) Lines and curves
b) Binary digits
c) Picture Element
d) Numeric values

How are shades of gray represented in black and white images using binary notation?
a) 1 bit per pixel
b) 4 bits per pixel
c) 8 bits per pixel
d) 16 bits per pixel

Which encoding method is used for colorful images, representing one byte for Red, one byte for Green, and one byte for Blue?
a) RGB encoding
b) Binary encoding
c) Hexadecimal encoding
d) Monochromatic encoding

What is the primary difference between Brightness Chrominance and RGB encoding?
a) Color representation
b) Pixel size
c) Storage capacity
d) Luminance and color components

Which technology is used for representing geometric structures in image scaling?
a) Pixel reproduction
b) Analytical Geometry
c) Digital Zoom
d) Bitmap encoding

What does sound amplitude represent?
a) Frequency
b) Volume
c) Pitch
d) Echo

How is sound encoded for data communication?
a) Using Morse code
b) Sampling amplitude at regular intervals
c) Digital modulation
d) Frequency modulation

How many samples per second are recorded in today's CDs for sound data?
a) 800 samples
b) 8000 samples
c) 44,100 samples
d) 1 million samples

What is an alternative method to represent sound data that focuses on encoding directions for producing music?
a) WAV
b) MP3
c) MIDI

d) FLAC

How does MIDI compare to other sound encoding methods in terms of data storage?
a) Larger file sizes
b) Smaller file sizes
c) Similar to WAV
d) No significant difference

In the binary system, what is the quantity associated with each position in relation to the position on its right?
a) The same quantity
b) Half the quantity
c) Twice the quantity
d) One-third the quantity

What is the representation of the number 375 in the decimal system?
a) 375
b) 300 + 70 + 5
c) 3 * 100 + 7 * 10 + 5 * 1
d) All of the above

How is the number 32 represented in binary notation using 5 bits?
a) 01000
b) 10000
c) 00100
d) 11111

What is the purpose of the algorithm for converting a positive decimal to binary?
a) To find the square root
b) To convert binary to decimal
c) To convert decimal to binary
d) To perform addition

If we want to represent the decimal number 13 in binary, what binary representation will be obtained following the algorithm?
a) 1001
b) 1101
c) 1010
d) 1110

How many possibilities are there when adding two bits in binary?
a) 2
b) 3
c) 4

d) 5

What is the role of the carry in binary addition?
a) Represents the sum
b) Adds 1 to the result
c) Indicates overflow
d) Facilitates multi-bit addition

In binary addition, when encountering "10," what action is taken?
a) Carry 1 to the next position
b) Replace with 0 and carry 1
c) Replace with 1 and carry 0
d) Discard and continue

How is binary addition performed, from left to right or right to left?
a) Left to right
b) Right to left
c) Random order
d) Center outwards

What does the Figure 28 illustrate in binary addition?
a) Carry operation
b) Subtraction rules
c) Binary multiplication
d) Binary addition examples

What does the radix point represent in binary fractions?
a) Decimal point
b) Binary point
c) Whole number separator
d) Exponent symbol

How is addition performed in binary fractions compared to binary or decimal addition?
a) Radix point alignment
b) Ignoring the radix point
c) Random positioning
d) Right to left addition

What is the binary representation of 1/4 in radix point notation?
a) 0.01
b) 0.1
c) 0.001
d) 0.11

How many bits are commonly used for two's complement notation in today's computers?
a) 8 bits
b) 16 bits
c) 32 bits
d) 64 bits

What is the leftmost bit in two's complement notation used for?
a) Decimal point
b) Radix point
c) Sign bit
d) Carry flag

What is the main characteristic of Excess Notation for representing integer values?
a) Variable-length codes
b) Fixed-length codes
c) Run-length encoding
d) Inverse relationship with frequency

What does "Excess 8" notation represent in terms of binary values?
a) Positive 8
b) Excess of 8
c) Binary value 8
d) Binary value 0

What is the key difference between lossless and lossy data compression?
a) Compression ratio
b) Information loss
c) Encoding speed
d) Dictionary size

Which technique is used in run-length encoding?
a) Variable-length codes
b) Fixed-length codes
c) Frequency-dependent encoding
d) Encoding differences

Module # 28 - 29

What is a truncation error in floating-point notation?
a) Encoding error

b) Decoding mistake
c) Loss of information due to insufficient bits
d) Floating-point overflow

How can truncation errors be reduced in floating-point notation?
a) Use longer exponent fields
b) Increase the size of the mantissa field
c) Switch to lossy compression
d) Decrease the dictionary size

What does lossy compression sacrifice to achieve higher compression?
a) Encoding speed
b) Dictionary size
c) Information accuracy
d) Variable-length codes

What is run-length encoding used for in data compression?
a) Encoding text documents
b) Encoding consecutive frames of a motion picture
c) Encoding dictionary entries
d) Encoding frequency-dependent codes

Who is credited with the algorithm commonly used for frequency-dependent codes?
a) Abraham Lempel
b) Jacob Ziv
c) Terry Welsh
d) David Huffman

In adaptive dictionary encoding, when does the dictionary change?
a) Only during encoding
b) Only during decoding
c) Never changes
d) During both encoding and decoding

Module # 30 - 33

What does GIF stand for?
A) Graphic Interface Format

B) Graphic Image Format
C) Graphic Interchange Format
D) Graphics Interpolation Format

How many colors can GIF represent in a pixel?
A) 16
B) 256
C) 512
D) 1024

Which compression technique does GIF use to achieve additional compression?
A) Run-Length Encoding
B) Lossless Compression
C) Adaptive Dictionary System with LZW Techniques
D) Variable-Length Encoding

What makes GIF suitable for simple animations but unsuitable for high-precision applications like photography?
A) Lossless compression
B) Adaptive dictionary system
C) Limited color palette (256 colors)
D) Run-Length Encoding

Which compression system is widely used in the photography industry for color photographs?
A) GIF
B) JPEG
C) TIFF
D) BMP

What is the purpose of the discrete cosine transform in JPEG compression?
A) Lossless compression
B) Color palette creation
C) Compression of image blocks
D) Run-Length Encoding

What is the factor by which JPEG's baseline standard can compress color images?
A) At least 5
B) At least 10
C) At least 15
D) At least 20

Which compression system is primarily used as a standardized format for storing photographs with related information like date and time?
A) GIF
B) JPEG
C) TIFF

D) PNG

What is MP3 short for?
A) Music Player 3
B) Motion Picture 3
C) Moving Picture Expert Group Layer 3
D) Multimedia Player 3

What property of the human ear does MP3 take advantage of for compression?
A) Color masking
B) Frequency masking
C) Brightness sensitivity
D) Pixel discrimination

What is the goal of compressing audio and video in the context of communication systems?
A) Save storage space
B) Achieve near CD quality sound
C) Allow timely data communication
D) Ensure high-resolution playback

How are transmission speeds for audio and video compression systems measured?
A) Frames per second (fps)
B) Kilobits per second (Kbps)
C) Megabytes per second (MBps)
D) Gigabits per second (Gbps)

What are the three main parts of a CPU?
A) Arithmetic/Logic Unit, Control Unit, Register Unit
B) Memory Unit, Control Unit, Register Unit
C) Arithmetic/Logic Unit, Memory Unit, Register Unit
D) Arithmetic/Logic Unit, Control Unit, Hard Drive Unit

Which unit contains data storage cells called registers used for temporary storage of information within the CPU?
A) Arithmetic/Logic Unit
B) Control Unit
C) Register Unit
D) Memory Unit

What is the purpose of general-purpose registers in a CPU?
A) Permanent storage of data
B) Temporary holding places for manipulated data

C) Execution of arithmetic operations
D) Long-term storage of program instructions

How is data transferred between a CPU and main memory?
A) Through a cable
B) Through a bus
C) Through wireless communication
D) Through fiber optics

What is the role of the bus in a CPU's communication with main memory?
A) Arithmetic operations
B) Execution of instructions
C) Data transfer
D) Control unit coordination

What was the early approach to gain flexibility in computers before the stored-program concept?
A) Rewiring the CPU
B) Increasing clock speed
C) Adding more memory
D) Improving arithmetic/logic unit efficiency

Who is credited with the realization of the stored-program concept?
A) Alan Turing
B) Charles Babbage
C) John von Neumann
D) Ada Lovelace

What does the stored-program concept involve?
A) Rewiring the CPU
B) Encoding and storing programs in main memory
C) Using pegboards for programming
D) Increasing clock speed

What is the advantage of the stored-program concept in terms of flexibility?
A) Faster execution speed
B) Easier rewiring
C) Changing programs without rewiring the CPU
D) Improved memory capacity

What is the standard approach used today for computer architecture?
A) Rewiring the CPU
B) Stored-program concept
C) Pegboard programming
D) Fixed-program concept

Module # 34 - 39

What is the term used to describe the list of machine instructions recognized by a CPU?
A) Data transfer group
B) Machine language
C) Arithmetic/logic group
D) Control group

Which philosophy of CPU architecture favors a minimal set of machine instructions for efficiency and speed?
A) RISC
B) CISC
C) ARM
D) CPU

What is the primary argument in favor of CISC architecture?
A) Energy efficiency
B) Cost-effectiveness
C) Handling complex software
D) Faster execution

Which processors are examples of CISC architecture used in PCs?
A) ARM
B) PowerPC
C) Intel
D) Qualcomm

What does ARM stand for in the context of CPU architecture?
A) Advanced RISC Machine
B) Complex Instruction Set Computer
C) Central Processing Unit
D) Reduced Instruction Set Computer

In which category do instructions for communication with external devices, such as printers and keyboards, fall?

A) Arithmetic/logic group

B) Control group
C) I/O instructions
D) Data transfer group

What is the purpose of a LOAD instruction in the data transfer group?
A) Transfer data from CPU to memory
B) Duplicate data within a register
C) Communicate with external devices
D) Transfer data from memory to a register

Which special purpose register contains the address of the next instruction to be executed?
A) Instruction Register
B) Program Counter
C) Arithmetic/Logic Unit
D) Machine Register

What is the primary function of the arithmetic/logic group of instructions?
A) Transfer data between registers
B) Control program execution
C) Perform mathematical and logical operations
D) Communicate with external devices

Which group of instructions directs the execution of the program rather than data manipulation?
A) Arithmetic/logic group
B) Control group
C) Data transfer group
D) I/O instructions

What is the sequence of steps in a machine cycle, as illustrated in Figure 44?
A) Fetch, Decode, Execute
B) Decode, Execute, Fetch
C) Execute, Fetch, Decode
D) Decode, Fetch, Execute

Which company developed the PowerPC processors used in RISC architecture?
A) Intel
B) AMD (Advanced Micro Devices)
C) IBM
D) Motorola

In the context of logic operators, what does the XOR operation do to a bit string?
A) Forms the complement
B) Circular shift
C) Discards bits
D) Fills holes with zeros

What is the term used for the operations that provide a means for moving bits within a register, often used in solving alignment problems?
A) I/O operations
B) Data transfer operations
C) Rotation and shift operations
D) Logic operations

Which type of shift operation is used for multiplying two's complement representations by two?
A) Circular shift
B) Logical shift
C) Arithmetic shift
D) Right shift

What is the distinguishing feature of a circular shift operation?
A) Bits are discarded
B) Holes are filled with zeros
C) Bits fall off the edge and reappear at the other end
D) The sign bit is unchanged

How can shifts to the left be used for multiplying two's complement representations by two?
A) Circular shift
B) Logical shift
C) Arithmetic shift
D) Right shift

What is the term used for shifts that always fill the hole with its original value?
A) Logical shifts
B) Circular shifts
C) Arithmetic shifts
D) Right shifts

Which bitwise operation is often used for masking in order to duplicate a part of a bit string?
A) AND operation
B) OR operation
C) XOR operation
D) NOT operation

How can XOR operation be used in the context of RGB bitmap images?
A) Forming complements
B) Duplicating bit patterns
C) Inverting all bits
D) Circular shifting

Module # 40 - 45

What is the simulation method for subtraction using 2's complement notation?
a) Division
b) Multiplication
c) Addition and Negation
d) Bitwise XOR

In 2's complement notation, how is the subtraction 7 - 5 represented?
a) 7 - 5
b) 7 + (-5)
c) 5 - 7
d) (-7) + 5

How is multiplication performed in binary arithmetic?
a) Division
b) Subtraction
c) Repetitive Addition
d) Exponentiation

In floating-point notation, what components are used to represent a number?
a) Mantissa, Exponent, and Sign Bit
b) Binary, Octal, and Hexadecimal
c) Integer, Fraction, and Decimal
d) Real, Imaginary, and Complex

What handles communication between a computer and other devices?
a) Multiplexer

b) Modem
c) Controller
d) Router

What is a significant advantage of using standards like USB and FireWire?
a) Increased Processor Speed
b) Reduced Controller Complexity
c) Enhanced Memory Capacity
d) Improved Graphics Performance

How do modern controllers communicate with a computer?
a) Through separate data lines
b) Via a dedicated wireless network
c) Connected to the same bus as CPU and main memory
d) Using infrared signals

What is a potential drawback of the von Neumann architecture in controller communication?
a) Increased Controller Speed
b) Improved Bus Access
c) Von Neumann Bottleneck
d) Simultaneous Data Transfer

What does DMA stand for in the context of controller communication?
a) Digital Memory Access
b) Direct Memory Access
c) Data Manipulation Algorithm
d) Dynamic Memory Allocation

How does DMA contribute to a computer's performance?
a) Slows down data transfer
b) Simplifies bus communication
c) Increases CPU resource usage
d) Causes controller malfunctions

What is the von Neumann bottleneck a consequence of?
a) Parallel Processing
b) DMA Implementation
c) Controller Design
d) von Neumann Architecture

What are the two types of communication paths between computing devices mentioned?

a) Analog and Digital

b) Serial and Parallel
c) Wireless and Wired
d) Optical and Copper

What characterizes parallel communication?
a) Simple data path
b) Data transfer rate slower than serial
c) Transfers signals one after the other
d) Transfers several signals simultaneously

Which of the following is an example of high-speed serial communication?
a) USB
b) Ethernet
c) FireWire
d) Both a and c

What is the unit for measuring the rate of data transfer between computing components?
a) KHz (Kilohertz)
b) MHz (Megahertz)
c) Gbps (Gigabits per second)
d) Mbps (Megabits per second)

How does pipelining contribute to a computer's throughput?
a) By increasing execution speed
b) By allowing steps to overlap
c) By reducing CPU resource usage
d) By eliminating the need for buses

In the context of pipelining, what is the total amount of work a machine can accomplish in a given time called?
a) Latency
b) Throughput
c) Bandwidth
d) Efficiency

What does pipelining allow to overlap in the machine cycle?
a) Memory access and storage
b) Execution of multiple instructions
c) Input and output operations
d) Controller communication and data transfer

How were computers of the 1940s and 1950s described in terms of flexibility and efficiency?
a) Large and efficient

b) Flexible and efficient
c) Large and inflexible
d) Small and inefficient

What was the initial setup required for program execution on early computers?
a) Inserting floppy disks
b) Mounting magnetic tapes
c) Connecting to the internet
d) Installing software packages

What is the primary goal of operating systems in early batch processing systems?
a) Increase program execution speed
b) Simplify program setup
c) Enhance computer security
d) Minimize CPU resource usage

What does FIFO stand for in the context of job queues?
a) Fast In, Fast Out
b) First In, First Out
c) Final In, Final Out
d) Full Input, Full Output

What was used as a communication medium between the operating system and the computer operator in early batch processing systems?
a) Graphical User Interface
b) Job Control Language (JCL)
c) Command Line Interface
d) Assembly Language

What is the major drawback of using a computer operator as an intermediary between a computer and its users?
a) Increased User Interaction
b) Improved Program Execution
c) Lack of User Interaction during Execution
d) Enhanced Security

What term is used to describe a feature that allows a program being executed to interact with the user through remote terminals?
a) Batch Processing
b) Interactive Processing
c) Multitasking
d) Parallel Processing

What modern devices have evolved from the traditional electronic typewriter terminals?
a) Mainframes

b) Supercomputers
c) Workstations and PCs
d) Servers and Routers

What is the current equivalent of early terminals for user interaction with computers?
a) Command Line Interface
b) Graphical User Interface
c) Virtual Reality Headsets
d) Workstations and PCs

In early batch processing systems, how were job instructions encoded and stored?
a) Using Assembly Language
b) Using Job Control Language (JCL)
c) Using Graphical User Interface
d) Using Binary Code

What is the commonality between early batch processing systems and modern PC operating systems in terms of reporting errors to users?
a) Both use Job Control Language (JCL)
b) Both utilize Assembly Language
c) Both involve communication with a computer operator
d) Both lack error reporting mechanisms

Module # 46 - 50

What is the primary goal of interactive processing?
A. Efficiently responding to users
B. Executing tasks in the background
C. Printing records of all students
D. Processing tasks with no time constraints

In real-time processing, when does a computer perform tasks?
A. Based on user input
B. According to deadlines in the external environment
C. Only during specific hours of the day
D. Randomly throughout the day

Why was real-time processing relatively easier in systems servicing only one user in the 60s and 70s?
A. Computers were less expensive
B. Each machine had to serve multiple users

C. Systems were more advanced
D. Users were more technologically literate

What concept was developed to service multiple users at the same time?
A. Real-time processing
B. Time sharing
C. Multi-programming
D. Multitasking

How was time-sharing implemented in early systems?
A. Large time intervals for each job
B. Small time intervals for each job
C. One job at a time
D. No time intervals were used

What does multitasking involve?
A. Executing one task at a time
B. Each machine serving only one user
C. One user executing several tasks simultaneously
D. Servicing multiple users sequentially

What configuration was common in the development of multiuser, time-sharing operating systems?
A. Central computer connected to one workstation
B. Central computer connected to numerous workstations
C. Each user with a dedicated computer
D. Workstations not connected to a central computer

What role has essentially disappeared with the advent of personal computers?
A. System Administrator
B. Computer Operator
C. Software Developer
D. Network Administrator

What is a focus of research in operating systems for embedded systems?
A. Load balancing
B. Time-sharing
C. Multiprocessing
D. Real-time deadlines

Which operating system is used in the Mars Exploration Rovers?

A. Windows CE
B. VxWORKS
C. Palm OS
D. Linux

What is the primary function of application software?
A. Execute common tasks for computer systems
B. Provide infrastructure for computer installations
C. Perform tasks specific to the machine's utilization
D. Manage mass storage facilities

What is the main distinction between application software and system software?
A. Application software executes programs
B. System software performs machine-specific tasks
C. System software includes spreadsheets
D. Application software manages computer infrastructure

What is an example of utility software?
A. Spreadsheet
B. Database system
C. Program development software
D. Data compression software

What does utility software do in an operating system?
A. Executes application programs
B. Provides infrastructure
C. Extends or customizes the capabilities of the operating system
D. Manages mass storage facilities

What term is used to describe the portion of an operating system that communicates with users?
A. Kernel
B. Interface
C. Shell
D. GUI

How do modern systems typically handle user interfaces?
A. Textual messages using a keyboard and monitor screen
B. Through a graphical user interface (GUI)
C. Both A and B
D. No user interface is used

What is the purpose of a window manager in a graphical user interface?
A. Coordinate mass storage facilities
B. Allocate memory space
C. Manage user interfaces
D. Manage windows on the screen

How do users of the UNIX operating system select different interfaces?
A. Through the window manager
B. By choosing a GUI
C. By selecting among different shells
D. By using a mouse

What distinguishes the user interface from the internal parts of the operating system?
A. User interfaces are not essential
B. Internal parts are more complex
C. Internal parts form the kernel
D. User interfaces are intermediaries

What is the internal part of an operating system called?
A. GUI
B. Interface
C. Kernel
D. Dispatcher

What does the file manager in the kernel coordinate?

A. User interfaces
B. Mass storage facilities
C. Device drivers
D. Memory space

How does a file manager organize files for the convenience of users?
A. By assigning them to specific users
B. By placing related files in directories or folders
C. By compressing files
D. By encrypting files

What is a chain of directories within directories called?
A. File path

B. Directory path
C. File directory
D. Folder path

What is the role of device drivers in an operating system?
A. Manage memory space
B. Coordinate user interfaces
C. Communicate with peripheral devices
D. Manage files and folders

What does the memory manager in the kernel coordinate?
A. Use of main memory
B. Use of mass storage facilities
C. Allocation of time to activities
D. Execution of tasks under a deadline

What is the term for creating the illusion of additional memory space by rotating programs between main memory and mass storage?
A. Paging
B. Virtual memory
C. Memory allocation
D. Load balancing

What are the two components within the kernel responsible for scheduling and controlling the allocation of time to activities?
A. File manager and dispatcher
B. Scheduler and dispatcher
C. Device drivers and memory manager
D. User interface and window manager

In a multiprogramming system, what does the scheduler determine?
A. Allocation of time to activities
B. Location of files in mass storage
C. Coordination of device drivers
D. Execution of specific tasks

What is the term for the external part of an operating system that communicates with users?
A. Kernel
B. Interface
C. Shell
D. GUI

Module # 51 - 55

What is the procedure known as that transfers the operating system from mass storage to main memory when a computer is turned on?

A. Bootstrapping
B. Memory allocation
C. Process switching
D. Interrupt handling

Why is read-only memory (ROM) used in the bootstrapping process?
A. It is cheap
B. Its contents can be altered
C. It retains data when the computer is turned off
D. The CPU expects to find its initial program there

What program is permanently stored in the machine's ROM and initially executed when the computer is turned on?
A. Memory manager
B. Kernel
C. Boot loader
D. Scheduler

In a multiprogramming system, what does the boot loader direct the CPU to do after transferring the operating system into main memory?
A. Execute an interrupt handler
B. Initiate a timer circuit
C. Copy an operating system from a network
D. Execute a jump instruction to the area of memory where the operating system is located

Why aren't desktop computers provided with enough ROM to hold the entire operating system?
A. ROM is too expensive
B. Desktop computers are not capable of using ROM
C. ROM cannot be updated
D. Large blocks of main memory in general-purpose computers are not efficient

How does the operating system coordinate the execution of application software, utility software, or the OS itself?
A. Through static activity
B. By using a dispatcher
C. By allocating time slices

D. Through dynamic activity

What is the fundamental distinction between a program and the activity of executing a program?
A. Process state
B. Scheduler
C. Memory manager
D. File manager

What is the term for the activity of executing a program under the control of the operating system?
A. Process switching
B. Program execution
C. Process
D. Kernel operation

What does the process state include?
A. Allocation of time slices
B. Memory manager details
C. Program counter value and other CPU registers
D. File access permissions

What tasks are handled by the scheduler and dispatcher within the operating system's kernel?
A. Allocating memory space
B. Managing user interfaces
C. Coordinating the execution of processes
D. Allocating mass storage space

What does the process table contain?
A. File access permissions
B. Details of the memory manager
C. Information about the processes present in the computer system
D. Allocation of time slices

When is a process considered "waiting"?
A. When it is in a state where its progress can continue
B. When its progress is currently delayed until some external event occurs
C. When it is waiting for user input
D. When it is in a critical region

What is the primary task of an operating system in terms of resource allocation?
A. Allocating user interfaces

B. Allocating time slices
C. Allocating the machine's resources to processes
D. Allocating access to files

Why can resource allocation be more complex than it seems?
A. Because the machine thinks for itself
B. Because algorithms don't cover every possible contingency
C. Because processes may demand the same resource simultaneously
D. Because processes never demand the same resource

In the context of controlling access to a printer, what is used to keep track of whether the printer has been allocated?
A. Flag
B. Semaphore
C. Interrupt handler
D. Program counter

What is mutual exclusion concerning semaphores?
A. Allowing multiple processes simultaneous access to a critical region
B. Restricting access to a critical region to only one process at a time
C. Allowing processes to share resources freely
D. Granting access to a critical region based on priority

What is the term for a sequence of instructions that should be executed by only one process at a time?
A. Interrupt handler
B. Semaphore
C. Critical region
D. Scheduler

Module # 56 - 61

What is deadlock in the context of operating systems?
a. A condition where a process is waiting for a resource allocated to another process
b. A condition where a process has access to all resources
c. A situation where a process finishes its task successfully
d. A state where a process has unlimited resources

In the context of deadlock, what are the three conditions that must be satisfied for deadlock to occur?

a. Competition for sharable resources, one-time resource requests, and forced resource retrieval
b. Competition for non-sharable resources, partial resource requests, and non-retrievable resource allocation
c. Competition for sharable resources, partial resource requests, and forced resource retrieval
d. Competition for non-sharable resources, partial resource requests, and non-retrievable resource allocation

How can deadlock be addressed in the category known as deadlock detection and correction schemes?
a. By avoiding the problem
b. By attacking any one of the three deadlock conditions
c. By forcing all processes to wait
d. By increasing the process table size

What is the term for holding data for output at a later, more convenient time?
a. Spooling
b. Deadlock
c. Forking
d. Multitasking

In operating systems, what is a super user or administrator responsible for?
a. Managing user accounts
b. Monitoring computer activities
c. Allocating resources
d. All of the above

What is the purpose of auditing software in the context of computer security?
a. Managing user accounts
b. Recording and analyzing computer activities
c. Allocating resources
d. Creating new processes

What is one major obstacle to the security of computer systems mentioned in the text?
a. Lack of auditing software
b. Presence of sniffing software
c. Carelessness of users
d. Inadequate hardware

What is the primary tool available to operating systems for maintaining security?
a. Spooling
b. Privileged instructions and control of privilege levels
c. Auditing software
d. Deadlock detection

What is the purpose of the CPU operating in non-privileged mode in a multiprogramming system?
a. To execute all instructions in its machine language
b. To limit the instructions available to a subset
c. To prevent access to peripheral devices
d. To prevent access to memory cells outside allotted areas

How does CSMA/CD (Carrier Sense, Multiple Access with Collision Detection) protocol work in a bus network?
a. All machines transmit messages simultaneously
b. Each machine waits for a random period before transmitting
c. The machine with the highest priority always transmits first
d. Messages are transmitted only after obtaining permission from the central server

Why is CSMA/CD not compatible with wireless star networks?
a. Wireless star networks do not use protocols
b. Signals in wireless networks can interfere with each other
c. Wireless networks do not experience collisions
d. Wireless networks always have a central server

What is the purpose of a switch in networking?
a. To amplify signals between networks
b. To forward messages only to the appropriate spoke
c. To connect only two buses
d. To avoid collisions in a bus network

How does a bridge differ from a repeater in networking?
a. A bridge passes all messages between two buses
b. A bridge forwards messages based on destination addresses
c. A bridge amplifies signals between networks
d. A bridge avoids collisions in a bus network

What is the term for connecting existing networks to form an extended communication system?
a. Routing

b. Bridging
c. Switching
d. Combining

What is the main function of routers in networking?
a. To amplify signals between networks
b. To forward messages between networks
c. To connect only two buses
d. To avoid collisions in a bus network

What is the term for the point at which one network is linked to an internet?
a. Repeater
b. Gateway
c. Bridge
d. Switch

What is the primary purpose of routers in an internet?
a. To forward messages based on destination addresses
b. To amplify signals between networks
c. To avoid collisions in a bus network
d. To pass signals back and forth between two original buses

How are devices in an internet assigned unique addresses?
a. By their local network address
b. By the network they are connected to
c. By their internet-wide address
d. By the central server's address

What distinguishes an internet from a single large network?
a. The presence of repeaters
b. The use of routers
c. The number of devices connected
d. The type of topology used

In the context of networking, what is the Internet (with an uppercase I) defined as?
a. A closed network
b. A worldwide internet based on TCP/IP
c. A network of routers
d. An internet with proprietary designs

Module # 62 - 63

What is inter-process communication?
A. Communication between computers in a network
B. Communication between processes within or across machines
C. Communication between servers and clients
D. Communication using the client/server model

In the client/server model, what is the role of the server?
A. It requests services from other processes.
B. It executes on a temporary basis.
C. It satisfies requests made by clients.
D. It communicates with peers in a network.

How was the client/server model applied in connecting computers in a cluster of offices?
A. Through instant messaging systems
B. By sharing music recordings
C. By using a high-quality shared printer
D. By creating a peer-to-peer network

What is the primary distinction between the client/server model and peer-to-peer model?
A. Server execution duration
B. Network connectivity
C. Communication protocols
D. Number of processes involved in communication

How does the peer-to-peer model distribute files?
A. Through a centralized server
B. Via a single peer's storage
C. Across multiple peers in a swarm
D. Using temporary file repositories

Why is the P2P model replacing the client/server model for file sharing?
A. Due to centralized operation
B. For enhanced security
C. It distributes service tasks efficiently

D. To simplify copyright enforcement

What challenge does the lack of a centralized server pose in P2P file sharing systems?
A. Legal enforcement of copyright laws
B. Difficulty in accessing files
C. Improved efficiency
D. Increased liabilities for users

What does "peer-to-peer network" often inaccurately refer to?
A. A network with multiple servers
B. Direct communication between two processes
C. A network devoid of servers
D. A network without internet connectivity

What characterizes distributed systems in computing?
A. Processes that execute on a single computer
B. Software units executing on different computers
C. Execution limited to one network
D. Exclusive use of the client/server model

What defines cluster computing in a distributed system?
A. Tight coupling between computers
B. High reliance on individual machines
C. Low-speed network connections
D. Specialized software for data distribution

Which term describes a more loosely coupled distributed system?
A. Cluster computing
B. Peer-to-peer network
C. Grid computing
D. Cloud computing

What is an example of a grid computing system?
A. Amazon's Elastic Compute Cloud
B. University of Wisconsin's Condor system
C. Google Drive
D. Instant messaging applications

What distinguishes cloud computing from other distributed systems?

A. Reliability and scalability concerns
B. Use of high-speed networks
C. Allocation of shared computers on the network
D. Dependency on local computer resources

How do cloud computing services differ from traditional computing setups?
A. They guarantee privacy and security.
B. They eliminate concerns about data location.
C. They allow renting of virtual computers.
D. They reduce the need for high-speed networks.

What concern arises with cloud computing regarding data ownership?
A. Scalability issues
B. Privacy and security
C. Reliability of the network
D. Dependency on local machines

What is the primary benefit of a client in the client/server model?
A. It provides services to other processes.
B. It requests services from the server.
C. It executes continuously.
D. It coordinates communication.

In the peer-to-peer model, what do processes do?
A. They execute continuously.
B. They serve other processes.
C. They communicate temporarily.
D. They depend on a central server.

Which model distributes service tasks among numerous peers?
A. Client/server model
B. Peer-to-peer model
C. Grid computing model
D. Cloud computing model

What is a characteristic of grid computing?

A. High reliance on a central server
B. Loosely coupled distributed systems
C. Specialized software for client-server communication
D. Utilizes a single, high-speed network

What defines cloud computing's advantage in resource allocation?
A. Dependency on individual machines
B. Elimination of network connectivity issues
C. Renting shared computers as needed
D. Lack of concerns about data storage

How does cloud computing affect the need for local hardware maintenance?
A. Increases maintenance costs
B. Reduces maintenance costs
C. Eliminates hardware maintenance
D. Shifts maintenance to software issues

What challenge arises with cloud computing regarding user awareness?
A. Privacy concerns
B. Reliability issues
C. Data accessibility
D. Uncertainty about hardware location

What problem arises with enforcing copyright laws in P2P file sharing?
A. Increased liabilities for users
B. Difficulty in accessing files
C. Lack of a central server
D. Legal challenges due to decentralization

What differentiates cluster computing from grid computing?
A. Tight coupling between machines
B. Reliance on specialized software
C. Looser coupling between computers
D. Use of high-speed networks

How do peer-to-peer systems differ from client/server models in terms of execution?
A. Peers execute continuously, servers do not.
B. Servers execute temporarily, peers do not.
C. Both peers and servers execute continuously.
D. Both peers and servers execute temporarily.

Module # 64 - 66

What primarily constructs and maintains the networks within the Internet?
A. Network Users
B. Internet Backbone
C. Internet Service Providers (ISPs)
D. Government Authorities

What are tier-1 ISPs primarily recognized as in the Internet structure?
A. Regional Networks
B. Communication Companies
C. Access Points
D. End Systems

Which type of ISP is often considered the intermediary between the core Internet and individual users or businesses?
A. Tier-1 ISP
B. Tier-2 ISP
C. Tier-3 ISP
D. Access ISP

What are the devices individual users connect to the access ISPs known as?
A. Routers
B. Servers
C. End Systems or Hosts
D. Core Systems

What technology is experiencing rapid growth for connecting end systems to larger networks?
A. Fiber Optic Cables
B. Ethernet Connections
C. Wireless Connections based on WiFi
D. Satellite Links

What term is often used for publicly available or free network access points within a limited range?
A. ISP Connectors
B. Broadcast Networks
C. Hot Spots
D. WANs

In the cellular telephone industry, what are hot spots referred to as?

A. APs
B. WANs
C. Cells
D. Broadcast Points

What are the unique identifying addresses for computers in the Internet known as?
A. MAC Addresses
B. Domain Names
C. IP Addresses
D. Network Identifiers

What is the main role of ICANN in the Internet's operation?
A. Allocating IP addresses to end systems
B. Managing domain names and IP address blocks
C. Providing Internet infrastructure
D. Developing network protocols

How are IP addresses traditionally represented in notation?
A. Binary form
B. Hexadecimal form
C. Dotted Decimal notation
D. Octal form

What system provides address translation services for mnemonic names used on the Internet?
A. IP Addressing System
B. Domain Extension System
C. Internet-wide Directory System (DNS)
D. IP Name Server System

What is the role of name servers in the Internet domain system?
A. Directory of IP addresses
B. Allocation of domain names
C. Translation of IP addresses to mnemonic names
D. Providing internet access

How are messages transferred over the Internet despite using mnemonic addresses?
A. Via IP addresses
B. Through MAC addresses
C. Via TLDs
D. Through name servers

What do registrars do in the domain registration process?
A. Assign TLDs
B. Manage IP address blocks
C. Allocate domain names
D. Handle domain registrations on behalf of ICANN

What characterizes subdomains within the domain system?
A. They are part of the TLDs
B. They represent physical areas of the Internet
C. They organize names within a domain
D. They are exclusively used by ISPs

What does VoIP primarily utilize the Internet infrastructure for?
A. Sending messages
B. Voice communication
C. Data sharing
D. Video streaming

What role do webservers and browsers play in modern Internet applications?
A. They are used for secure communication.
B. They handle traditional network applications.
C. They facilitate communication via HTTP.
D. They regulate domain name registrations.

Which application is an enduring use of the Internet and involves message exchange between end users?
A. Web Browsing
B. Instant Messaging
C. Email System
D. Online Chats

What protocol does a newsreader application typically use for communication?
A. NNTP
B. FTP
C. Telnet
D. SSH

What is the predominant purpose of streaming services like Netflix and YouTube on the Internet?
A. File Sharing
B. Real-time Audio and Video Transport
C. Email Communication
D. Social Media Interaction

What major concern do governments often have regarding VoIP usage?
A. High bandwidth consumption
B. Interference with traditional telephone systems
C. Privacy issues
D. Copyright infringement

What specific system facilitates real-time audio and video transportation over the Internet?
A. Web Browsing
B. Instant Messaging
C. VoIP
D. Email System

What does HTTP primarily cater to in modern Internet usage?
A. Secure data transfers
B. File downloads
C. Voice communication
D. Webpage communication

Which system regulates the allocation of IP addresses to individual machines within the Internet?
A. ICANN
B. ISPs
C. DNS
D. Domain Servers

What does DNS primarily function as within the Internet infrastructure?
A. IP address manager
B. Domain name translator
C. Router directory
D. Network infrastructure provider

What method does the Internet primarily use to transmit messages despite using mnemonic addresses?
A. DNS servers
B. IP addresses
C. TLDs
D. Name servers

What is the primary task of access ISPs within the Internet architecture?
A. Provide backbone infrastructure
B. Regulate TLDs
C. Supply Internet access to homes and businesses
D. Manage domain names

What do end systems represent within the context of the Internet?
A. Core network components
B. Servers for individual users
C. Individual devices connecting to access ISPs
D. DNS translation servers

What primarily characterizes wireless connections based on WiFi in the Internet context?
A. Rapidly declining usage
B. Limited range of transmission
C. Slow data transmission speeds
D. Growing adoption for connecting end systems

What are mnemonics primarily used for within the Internet addressing system?
A. Representing IP addresses
B. Allocating domain names
C. Providing secure connections
D. Simplifying human-friendly address representation

Module # 67 - 72

What is one of the oldest forms of Internet communication?
A. Twitter-based tweets
B. Browser-based chatting
C. Instant Messaging
D. Electronic mail (Email)

Which protocol is primarily used for transferring text messages in Email?
A. MIME
B. SMTP
C. POP3
D. IMAP

What does MIME stand for in the context of Email communication?
A. Mail Internet Message Extension
B. Multipurpose Internet Mail Extensions
C. Mail Internet Messaging Entity

D. Multiplexed Internet Mail Exchange

What does POP3 help users with in terms of managing email messages?
A. Store messages on local machine
B. Convert non-ASCII to SMTP compatible form
C. Organize messages into folders
D. Store messages on mail server machine

What does IMAP assist users in doing concerning email messages?
A. Store messages on local machine
B. Convert non-ASCII to SMTP compatible form
C. Organize messages into folders
D. Store messages on mail server machine

What does VoIP primarily aim to achieve using the Internet infrastructure?
A. Text communication
B. Voice communication
C. Video communication
D. File sharing

Why do some governments perceive VoIP as a threat to traditional telephone systems?
A. Heavy usage of bandwidth
B. Integration issues with TCP/IP
C. Taxation difficulties
D. Potential competition and control challenges

Which VoIP form uses P2P software and minimal hardware for calls between PCs?
A. Analog Telephone Adapters
B. Embedded VoIP Phones
C. VoIP Soft Phones
D. Wireless VoIP Phones

What is a drawback associated with the proprietary system like Skype?
A. High cost for usage
B. Limited availability
C. Lack of third-party verification
D. Unreliable call quality

What is the function of analog telephone adapters in VoIP?
A. Connects traditional telephone to phone service
B. Connects PC directly to the Internet

C. Replaces traditional phones with Ethernet phones
D. Allows wireless calls using VoIP

What characterizes embedded VoIP phones in large organizations?
A. Use of wireless technology
B. Connection directly to the Internet
C. Replacement of traditional telephone systems
D. Inclusion of P2P software

What distinguishes 4G phones from earlier wireless phones in terms of Internet access?
A. They have slower data transfer rates
B. They only use company-specific protocols
C. They use gateways to access the Internet
D. They are IP-based hosts on the global Internet

What primarily constitutes a significant portion of Internet traffic?
A. Email communication
B. Social media interaction
C. Webpage communication
D. Internet multimedia streaming

What does the World Wide Web mainly consist of?
A. Email services
B. Social media platforms
C. Internet browsers
D. Webpages interconnected via hyperlinks

What does HTML stand for in the context of Internet usage?
A. Hyper Text Markup Language
B. High-speed Text Management Language
C. Host Transmission Markup Language
D. Hyperlink Text Mode Language

What primarily is the function of HTML in the Internet domain?
A. Provides voice communication
B. Creates visual representations of data
C. Defines the structure of webpages
D. Encodes non-ASCII text

What does a typical URL signify in the context of the Internet?
A. Universal Resource Locator
B. Unique Resource Link

C. User Recognition Link
D. Universal Registration Label

What is the primary purpose of the browser-based chatting application in Internet usage?
A. Instant messaging
B. Webpage creation
C. Real-time voice communication
D. Online chatting via web browsers

What primarily characterizes the process of Email messaging using the Simple Mail Transfer Protocol?
A. Real-time voice communication
B. Text message transfer
C. File sharing through email
D. Instant messaging within emails
Answer: B. Text message transfer

What does the scenario involving mafzal and hmaurer primarily showcase in Figure 66?
A. Email encryption process
B. Email routing from different domains
C. Email delivery confirmation
D. Email attachment handling

What does the protocol POP3 primarily aid users in doing regarding email messages?
A. Sending messages to multiple recipients
B. Storing messages on local machines
C. Converting ASCII to non-ASCII text
D. Downloading messages from mail server machines

What is the main function of IMAP concerning email messages?
A. Sending messages to multiple recipients
B. Storing messages on local machines
C. Converting ASCII to non-ASCII text
D. Managing messages on mail server machines

What primarily distinguishes embedded VoIP phones from other VoIP forms?
A. Connection method to Internet
B. Replacing traditional telephone systems
C. Usage of wireless technology
D. Direct connectivity to PCs

What defines the Internet multimedia streaming significantly in terms of Internet usage
A. Email communication
B. Social media interaction
C. Audio and video transport in real-time
D. Webpage communication

What is the primary objective of HTML within the context of the World Wide Web?
A. Text message transfer
B. Creating hyperlinks
C. Defining webpage structure
D. Audio and video streaming

Module # 73 - 80

What does the "href" parameter indicate within the anchor tag in HTML?
A. Hypertext reference
B. Highlighted reference
C. Header reference
D. Hyperlink reference

Which tag in HTML is primarily responsible for linking web pages?
A. <link>
B. <a>
C. <href>
D. <anchor>

What does the "src" attribute signify in HTML?
A. Source
B. Subresource
C. Sequence
D. Segmentation

What does the transport layer primarily do in the context of Internet communication?
A. Divide messages into small segments
B. Translate mnemonic addresses to IP addresses
C. Format messages for transmission over the Internet
D. Forward packets to their final destination

What analogy is made regarding the flow of messages in the transport layer?

A. Flow of water in pipes
B. Traffic flow at a railroad crossing
C. Movement of cars on highways
D. Sorting mail at a post office

Which layer adds sequence numbers to segments for reassembly at the message's destination?
A. Application layer
B. Network layer
C. Transport layer
D. Link layer

What determines the direction a packet should be sent at each step along its path through the Internet?
A. Transport layer
B. Link layer
C. Network layer
D. Application layer

What task does the link layer perform in the context of Internet routers?
A. Forwarding packets
B. Creating segments
C. Transmitting messages
D. Updating forwarding tables

Which protocol does the link layer apply in an Ethernet network?
A. HTTP
B. CSMA/CD
C. UDP
D. CSMA/CA

What is the primary responsibility of the network layer within a router?
A. Forwarding packets
B. Transmitting messages
C. Creating segments
D. Updating forwarding tables

What term is used to limit the number of times a packet is forwarded in the Internet?
A. Segment count
B. Hop count
C. Router limit
D. Time-to-live

What is the primary role of IP in the context of the Internet?
A. Forwarding packets
B. Routing traffic
C. Handling segments
D. Transmitting messages

Which transport layer protocol is known for being more streamlined than TCP?
A. TCP
B. HTTP
C. SMTP
D. UDP

Which application is known to favor UDP due to its efficiency?
A. Email servers
B. Web browsers
C. DNS lookups
D. VoIP

What is the standard protocol for implementing tasks assigned to the network layer?
A. TCP
B. SMTP
C. IP
D. UDP

What happens if the hop count reaches zero in a packet being forwarded?
A. Packet is reassembled
B. Packet is dropped
C. Packet is duplicated
D. Packet is redirected

What is the primary role of the link and network layers at intermediate stops during a packet's journey?A. Formatting packets
B. Forwarding packets
C. Handling segments
D. Reassembling messages

What is the time delay experienced in Internet transactions measured in?
A. Milliseconds
B. Microseconds
C. Seconds
D. Nanoseconds

What does the transport layer do with incoming messages at the destination?
A. Forwards them
B. Extracts segments
C. Reconstructs messages
D. Drops them

What does the transport layer use to assign incoming messages to specific units within the application layer?
A. IP addresses
B. Sequence numbers
C. Hop counts
D. Port numbers

Which layer assigns universally accepted port numbers to common applications?
A. Application layer
B. Transport layer
C. Network layer
D. Link layer

What do users of the Internet generally not need to be concerned with regarding communication?
A. IP addresses
B. Port numbers
C. Sequence numbers
D. Hop counts

How many layers of software are involved in communication over the Internet?
A. Two
B. Three
C. Four
D. Five

What does the transport layer convert messages into before delivering them to the application?
A. Packets
B. Segments
C. Sequences
D. Addresses

What does the link layer handle at the other end of a packet's connection?
A. Forwarding packets
B. Creating segments
C. Updating forwarding tables
D. Transmitting messages

What protocols are used for communication among neighboring network layers in the IP standard?
A. DNS and HTTP
B. TCP and UDP
C. SMTP and POP3
D. Protocols for routing information

What value is appended to a packet to limit its forwarding in the Internet?
A. Hop count
B. Sequence number
C. Packet count
D. Router value

What does IP use to protect the Internet from endlessly circling packets?
A. Hop counts
B. Forwarding tables
C. Segment counts
D. Time-to-live

What is the significance of an initial hop count of 64 in packet transmission?
A. It prevents packet duplication
B. It ensures faster transmission
C. It allows packets to find their way through the Internet
D. It limits the number of routers a packet can pass through

In which layer is the response time of the Internet measured?
A. Application layer
B. Transport layer
C. Network layer
D. Link layer

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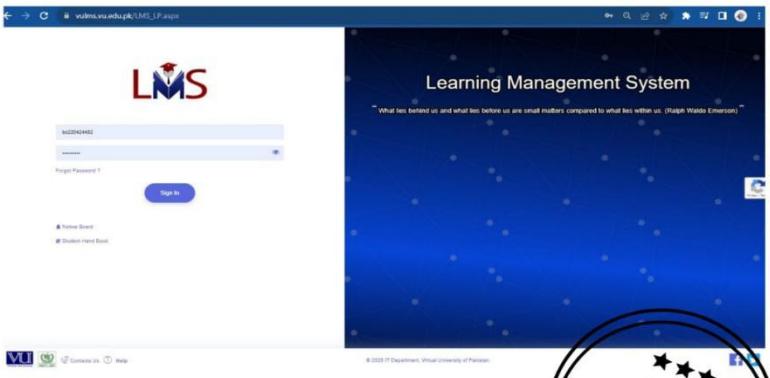

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