

CS406 (Weeks 1 to 6) based on the syllabus content:

Week 1: Course Introduction

1. What is the primary goal of this course?

- A) To understand programming languages
- B) To create traditional websites
- C) To develop and manage database-driven web applications
- D) To master SEO techniques

Answer: C

2. Which of the following is a primary text for this course?

- A) "Database-Driven Web Sites" by Jesse Feiler
- B) "Learn Python the Hard Way" by Zed Shaw
- C) "SQL for Beginners" by Matt Doyle
- D) "Modern Database Systems" by Loren Baker

Answer: A

3. Which layer is NOT part of a database-driven web application?

- A) Application logic layer
- B) Database layer
- C) Network infrastructure layer
- D) Browser layer

Answer: C

4. What is the role of a database schema?

- A) Defines database structure and relationships
- B) Stores the physical data of the database
- C) Optimizes database performance
- D) Establishes user authentication

Answer: A

5. What is the primary difference between a traditional and database-driven website?

- A) Database-driven websites interact dynamically with user data
- B) Traditional websites require databases for static data
- C) Traditional websites are built using JavaScript only
- D) Database-driven websites have no user interaction

Answer: A

6. **Who is considered the inventor of the World Wide Web?**

- A) Alan Turing
- B) Tim Berners-Lee
- C) John von Neumann
- D) Steve Jobs

Answer: B

7. **Which protocol does the World Wide Web primarily use?**

- A) FTP
- B) HTTP
- C) SMTP
- D) POP3

Answer: B

8. **What is the main advantage of database-driven websites?**

- A) Low development cost
- B) Easy scalability and maintenance
- C) Static content delivery
- D) High SEO ranking

Answer: B

9. **What is the external level in data abstraction?**

- A) Physical data storage
- B) User-specific views of the database
- C) Entire database structure
- D) Database connection logic

Answer: B

10. **What type of software is a DBMS?**

- A) Operating system
- B) Database optimization tool
- C) Software for managing databases
- D) Web server application

Answer: C

Week 2: Web Application vs. Website

1. **What is a characteristic of a website?**

- A) Focus on static content delivery
- B) Requires user authentication
- C) Allows dynamic data manipulation
- D) Performs high-level processing

Answer: A

2. How does a web application differ from a website?

- A) Websites perform automated tasks
- B) Web applications allow user interactions with data
- C) Websites require complex processing
- D) Web applications are marketing-focused

Answer: B

3. Which of the following is NOT a feature of a website?

- A) Data presentation
- B) User authentication
- C) Simplified navigation
- D) Brand communication

Answer: B

4. Web applications are also referred to as:

- A) Static websites
- B) Web portals
- C) Offline tools
- D) Presentation layers

Answer: B

5. What is a key feature of websites compared to web applications?

- A) Marketing-focused design
- B) High server load
- C) Task automation
- D) Data analytics

Answer: A

6. Which of the following statements about web applications is true?

- A) They are primarily used for branding
- B) They generally require authentication
- C) They lack data manipulation capabilities

- D) They are simpler to code than websites

Answer: B

7. What is a disadvantage of websites compared to web applications?

- A) Require less server processing power
- B) Cannot manipulate data dynamically
- C) Are not accessible via browsers
- D) Need complex authentication systems

Answer: B

8. Web applications are more resource-intensive because:

- A) They handle complex tasks
- B) They lack data processing capabilities
- C) They are static in nature
- D) They do not use databases

Answer: A

9. Which of the following is true for a web application?

- A) No authentication required
- B) Less focused on marketing
- C) Easier to build than a website
- D) Requires no user interaction

Answer: B

10. Which element is specific to web applications but not websites?

- A) Static navigation
- B) User data validation
- C) Branding strategies
- D) Content marketing

Answer: B

Week 3: Building E-Commerce SMB

1. What is the first step in launching an online presence?

- A) Register a domain name
- B) Optimize for SEO
- C) Select a hosting provider

- D) Design the website

Answer: A

2. Which of the following is NOT a benefit of being online?

- A) Building credibility
- B) Generating leads
- C) Simplifying offline customer service
- D) Connecting with customers

Answer: C

3. What does SEO stand for?

- A) Simplified E-commerce Operations
- B) Search Engine Optimization
- C) Social Engagement Opportunities
- D) Scalable Enterprise Online

Answer: B

4. Which is NOT a characteristic of a perfect domain name?

- A) Short and memorable
- B) Contains special characters
- C) Easy to spell
- D) Relevant to the business

Answer: B

5. Why is mobile-readiness important for websites?

- A) Mobile devices dominate web traffic
- B) It reduces server load
- C) Mobile sites are cheaper to maintain
- D) Mobile users avoid online shopping

Answer: A

6. Which of the following is NOT an SEO best practice?

- A) Use of keywords
- B) Optimizing page load time
- C) Hiding metadata
- D) Building backlinks

Answer: C

7. What is the purpose of an "About Us" page?

- A) To display product pricing
- B) To introduce the brand and its values
- C) To collect customer feedback
- D) To handle user authentication

Answer: B

8. Which social media platform is best for business networking?

- A) Instagram
- B) Facebook
- C) LinkedIn
- D) Twitter

Answer: C

9. What is the main goal of content marketing?

- A) Reducing website costs
- B) Increasing lead generation
- C) Simplifying navigation
- D) Automating customer responses

Answer: B

10. What is the purpose of image optimization in SEO?

- A) Increase image resolution
- B) Improve page load speed
- C) Enhance browser compatibility
- D) Display larger image sizes

Answer: B

Let me know if you'd like Weeks 4 to 6 now or later!

Week 4: How Databases Work on the Web

1. Which of the following is NOT a feature of the World Wide Web (WWW)?

- A) Manages large amounts of data
- B) Allows for dynamic data manipulation
- C) Requires manual updates for all data changes

- D) Supports tools for data selection and display

Answer: C

2. **What protocol is primarily used to transfer resources on the web?**

- A) FTP
- **B) HTTP**
- C) SMTP
- D) POP3

Answer: B

3. **Which component is NOT part of a web database gateway?**

- A) Application logic layer
- B) Database connection layer
- C) Browser layer
- **D) Network infrastructure layer**

Answer: D

4. **What is a stateless protocol in the context of web databases?**

- A) A protocol that maintains continuous connection with the server
- **B) A protocol that closes the connection after each transaction**
- C) A protocol used exclusively for security purposes
- D) A protocol that encrypts all web traffic

Answer: B

5. **Which of the following technologies connects databases to web servers?**

- A) TCP/IP
- **B) Database API libraries**
- C) Content Delivery Network
- D) Proxy servers

Answer: B

6. **What is a benefit of using CGI for web database programming?**

- A) Supports dynamic data changes
- **B) Independent of programming language and web server**
- C) Requires no middle-layer processing
- D) Provides the highest performance

Answer: B

7. **Why are proxy servers used in web applications?**

- A) To encrypt all web traffic
- B) To store and retrieve user credentials
- C) To act as intermediaries between browsers and servers
- D) To improve database performance

Answer: C

8. Which of the following best describes "firewalls" in web applications?

- A) They prevent unauthorized access to a private network
- B) They enable faster network speeds
- C) They convert HTTP traffic into HTTPS
- D) They store database connection credentials

Answer: A

9. What is a significant difference between HTTP and HTTPS?

- A) HTTPS operates without encryption
- B) HTTPS uses SSL/TLS for secure communication
- C) HTTP supports only static websites
- D) HTTP is faster than HTTPS for secure transactions

Answer: B

10. What is the primary disadvantage of using database API libraries?

- A) They are language-dependent
- B) They reduce server efficiency
- C) They require high programming complexity
- D) They limit the number of database connections

Answer: C

Week 5: Database-Driven Websites

1. What is the key function of the database connection layer in a web application?

- A) To display dynamic content
- B) To process user input
- C) To facilitate communication between the application and the database
- D) To optimize SEO performance

Answer: C

2. What is the main characteristic of a 3-tier client-server architecture?

- A) All processes are handled by a single server

- B) It separates presentation, logic, and data layers
- C) The application runs without a database
- D) It requires no user interaction

Answer: B

3. Which of the following is NOT a layer in a database-driven web application?

- A) Browser layer
- B) Database layer
- C) Content optimization layer
- D) Application logic layer

Answer: C

4. What is an advantage of using web database applications?

- A) They reduce server load
- B) They allow global access to data
- C) They eliminate the need for browsers
- D) They operate without database gateways

Answer: B

5. Which of these is NOT true for web database gateways?

- A) They link stateful databases with stateless HTTP
- B) They act as intermediaries between the web and DBMS
- C) They ensure encryption of all data
- D) They can be implemented client-side or server-side

Answer: C

6. What is one drawback of stateless HTTP protocols in web databases?

- A) They require continuous server connections
- B) They maintain previous transaction details
- C) They incur overhead with each database request
- D) They do not support secure transactions

Answer: C

7. What is the primary role of a digital certificate in web security?

- A) To encrypt data transmission
- B) To verify the authenticity of the sender
- C) To store user passwords securely

- D) To act as a proxy server

Answer: B

8. What is a common feature of 2-tier client-server architecture?

- A) User interface and database reside on the same machine
- B) It separates the browser and server layers
- C) It uses a middleware layer for communication
- D) It eliminates the need for client-side scripting

Answer: A

9. What is the primary benefit of using encryption protocols like SSL in web applications?

- A) Increased database query speed
- B) Secure data transmission between client and server
- C) Reduction in server load
- D) Simplified database integration

Answer: B

10. What is the key difference between server-side and client-side solutions for database connectivity?

- A) Server-side solutions offer faster processing
- B) Client-side solutions are more secure
- C) Server-side solutions support multiple transactions per connection
- D) Client-side solutions eliminate the need for HTTP

Answer: C

Week 6: Understanding Database Schemas

1. What is a database schema?

- A) A set of rules for coding a database application
- B) A visual or logical representation of database structure
- C) A method for optimizing query performance
- D) A layer for encrypting database connections

Answer: B

2. What is the main focus of conceptual schemas in database design?

- A) Physical data storage
- B) Application-specific views
- C) Organization's informational needs

- D) User authentication

Answer: C

3. **Which of the following is NOT a level of data abstraction in a database?**

- A) External
- B) Internal
- C) Logical

- **D) Procedural**

Answer: D

4. **What type of attributes represent properties derived from other attributes?**

- A) Simple attributes
- B) Composite attributes
- **C) Derived attributes**
- D) Multi-valued attributes

Answer: C

5. **Which of the following is NOT a characteristic of relational databases?**

- A) Use of tables for data storage
- **B) Support for hierarchical structures**
- C) Defined relationships between tables
- D) Enforcement of integrity constraints

Answer: B

6. **What is the purpose of data abstraction in databases?**

- A) To improve query performance
- **B) To hide complex storage details from users**
- C) To ensure schema consistency
- D) To encrypt sensitive data

Answer: B

7. **What does the external level of data abstraction focus on?**

- A) Database indexing and storage
- **B) User-specific views of the database**
- C) Logical structure of the database
- D) Application server connections

Answer: B

8. **Which of the following represents a single occurrence of an entity in a database?**

- A) Attribute
- B) Record
- C) Field
- D) View

Answer: B

9. Which type of attribute cannot be broken down further?

- A) Composite attribute
- B) Simple attribute
- C) Multi-valued attribute
- D) Derived attribute

Answer: B

10. What is an example of a multi-valued attribute?

- A) A person's name
- B) A person's multiple phone numbers
- C) A single unique identifier
- D) A derived value like age

Answer: B

Let me know if you need further assistance!