CS410 Visual Programming

Important mcqs

Lec 23 - Common Controls

Question 1: Which Common Control is used to display a list of selectable items vertically?
A) ComboBox
B) ListBox
C) CheckBox
D) RadioButton
Solution: B) ListBox
Question 2: Which Common Control provides a binary on/off choice for users?
A) ComboBox
B) ListBox
C) CheckBox
D) RadioButton
Solution: C) CheckBox
Question 3: The Common Control used to display a single-line text input field is:
A) TextBox
B) ComboBox

C) Label
D) Button
Solution: A) TextBox
Question 4: What does the Button Common Control typically represent in a graphical user interface?
A) Images
B) Text
C) Lists
D) Colors
Solution: B) Text
Question 5: Which Common Control is used for selecting a single option from a group of choices?
A) ComboBox
B) ListBox
C) CheckBox
D) RadioButton
Solution: D) RadioButton
Question 6: The Common Control that allows users to choose from a dropdown list of items is called:
A) ComboBox
B) ListBox
C) CheckBox

D) RadioButton
Solution: A) ComboBox
Question 7: Which Common Control is commonly used to display static text or information?
A) TextBox
B) ComboBox
C) Label
D) Button
Solution: C) Label
Question 8: Which Common Control is used to display images in a graphical user interface?
A) TextBox
B) PictureBox
C) Label
D) Button
Solution: B) PictureBox
Question 9: The Common Control used for selecting files or specifying file paths is called:
A) OpenFileDialog
B) SaveFileDialog
C) PrintDialog
D) ColorDialog

Solution: A) OpenFileDialog
Question 10: Which Common Control is utilized to choose colors in an application?
A) OpenFileDialog
B) SaveFileDialog
C) PrintDialog
D) ColorDialog

Solution: D) ColorDialog

Lec 24 - Dynamic Link Libraries
Question 1: What does DLL stand for?
a) Dynamic Load Library
b) Dynamic Link Loader
c) Dynamic Link Library
d) Dynamic Language Locator
Solution: c) Dynamic Link Library
Question 2: Which of the following statements about DLLs is true?
a) DLLs are only used in Windows operating systems.
b) DLLs contain only executable code and no data.
c) DLLs cannot be loaded or unloaded dynamically.
d) DLLs promote code reusability by allowing multiple programs to share the same code.
Solution: d) DLLs promote code reusability by allowing multiple programs to share the same code.
Question 3: Which programming language is commonly used to create DLLs?
a) Java
b) Python
c) C++
d) HTML
Solution: c) C++

Question 4: What is the primary advantage of using DLLs?

- a) They make the executable files larger.
- b) They make the software less modular.

c) They enable code sharing and reduce redundancy.
d) They are platform-independent.
Solution: c) They enable code sharing and reduce redundancy.
Question 5: How are functions from a DLL accessed by a program?
a) By embedding the DLL code directly into the program.
b) By using a static link to the DLL.
c) By dynamically loading the DLL and calling its functions.
d) By creating a separate copy of the DLL for each program.
Solution: c) By dynamically loading the DLL and calling its functions.
Question 6: What is the purpose of the "GetProcAddress" function in Windows API?
a) To load the entire DLL into memory.
b) To retrieve the address of a function within a loaded DLL.
c) To compile the DLL source code.
d) To link the DLL statically.
Solution: b) To retrieve the address of a function within a loaded DLL.
Question 7: Which library is commonly used for dynamic loading of DLLs in C++?
a) libDLL
b) dlfcn
c) loadlib
d) dynamiclink
Solution: b) dlfcn

Question 8: In which memory space are DLLs loaded?
a) Separate memory space for each program
b) Shared memory space for all programs
c) Virtual memory space only
d) ROM memory space
Solution: b) Shared memory space for all programs
Question 9: What can be a potential drawback of using DLLs?
a) Increased memory usage for each program using the DLL
b) Reduced code reusability
c) Slower program execution due to dynamic loading
d) Incompatibility with modern operating systems
Solution: a) Increased memory usage for each program using the DLL
Question 10: Which utility can be used to view the functions and symbols within a DLL?
a) regedit
b) Dependency Walker
c) Disk Cleanup
d) Device Manager
Solution: b) Dependency Walker

Lec 25 - Threads and DLL's

Question 1:	What is a	thread in	the context of	of computer	programming?
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- a) A type of data storage
- b) A unit of execution within a process
- c) A graphical user interface element
- d) An external device connected to the computer

Solution: b) A unit of execution within a process

Question 2: What is the primary benefit of using multiple threads in a program?

- a) Decreased program complexity
- b) Reduced memory usage
- c) Improved program modularity
- d) Enhanced multitasking and concurrency

Solution: d) Enhanced multitasking and concurrency

Question 3: Which of the following statements is true about threads?

- a) Threads cannot run in parallel.
- b) Threads within the same process share the same memory space.
- c) Threads always execute in separate processes.
- d) Threads are only used in single-threaded applications.

**Solution: ** b) Threads within the same process share the same memory space.

Question 4: What is thread synchronization used for?
a) To prevent threads from running in parallel
b) To improve memory efficiency
c) To ensure proper order of execution among threads
d) To create separate memory spaces for threads
Solution: c) To ensure proper order of execution among threads
Question 5: Which of the following is NOT a thread scheduling algorithm?
a) First-Come, First-Served (FCFS)
b) Round Robin
c) Last-In, First-Out (LIFO)
d) Binary Search Tree (BST)
Solution: d) Binary Search Tree (BST)
DLLs:
Question 6: What does DLL stand for?
a) Dynamic Load Library
b) Dynamic Link Loader
e) Dynamic Link Library
d) Dynamic Language Locator
Solution: c) Dynamic Link Library

Question 7: How do DLLs promote code reusability?
a) By embedding code directly into the program
b) By creating duplicate copies of code
c) By allowing multiple programs to share the same code
d) By using different programming languages
Solution: c) By allowing multiple programs to share the same code
Question 8: What is the purpose of dynamically linking to a DLL?
a) To increase the size of the executable file
b) To embed the entire DLL code into the program
c) To reduce code modularity
d) To load and use code from an external DLL at runtime
Solution: d) To load and use code from an external DLL at runtime
Question 9: Which utility can be used to view the functions and symbols within a DLL?
a) regedit
b) Dependency Walker
c) Disk Cleanup
d) Device Manager
Solution: b) Dependency Walker **Question 10:** In which memory space are DLLs loaded?

- a) Separate memory space for each program
- b) Shared memory space for all programs
- c) Virtual memory space only
- d) ROM memory space

Solution: b) Shared memory space for all programs

Lec 26 - Threads and Synchronization

Question 1: What is a thread in the context of programming?

- a) A function call
- b) A sequence of instructions
- c) A graphical user interface element
- d) An input/output operation

Solution: b) A sequence of instructions

Question 2: What is the purpose of thread synchronization?

- a) To increase the number of threads
- b) To reduce the number of threads
- c) To coordinate thread execution and data access
- d) To stop all threads simultaneously

Solution: c) To coordinate thread execution and data access

Question 3: What is a race condition in multithreading?

- a) A competition between threads for system resources
- b) A condition where two or more threads access shared data concurrently, leading to unexpected results
- c) A condition where a thread fails to start
- d) A synchronization mechanism

Solution: b) A condition where two or more threads access shared data concurrently, leading to unexpected results

Question 4: Which of the following is a thread synchronization primitive?

- a) Thread.sleep()
- b) Thread.start()

c) Thread.join()
d) Thread.run()
Solution: c) Thread.join()
Question 5: What is the purpose of the "synchronized" keyword in Java?
a) It creates a new thread
b) It marks a method as deprecated
c) It prevents a method from being overridden
d) It ensures exclusive access to a block of code by only one thread at a time
Solution: d) It ensures exclusive access to a block of code by only one thread at a time
Question 6: What can be used to prevent deadlock in multithreaded programs?
a) Increasing the number of threads
b) Decreasing the number of threads
c) Using thread.sleep()
d) Implementing a proper order for acquiring locks
Solution: d) Implementing a proper order for acquiring locks
Question 7: Which synchronization primitive allows multiple threads to read a shared resource simultaneously, but only one thread to write?
a) Semaphore
b) Mutex
c) ReadWriteLock
d) CountDownLatch
Solution: c) ReadWriteLock

Question 8: What is a critical section in the context of synchronization?
a) A section of code that only runs on a single thread
b) A section of code that must be executed by multiple threads concurrently
c) A section of code that is ignored by all threads
d) A section of code where errors are expected
Solution: b) A section of code that must be executed by multiple threads concurrently
Question 9: Which of the following is a potential drawback of excessive thread synchronization?
a) Deadlocks
b) Race conditions
c) Improved performance
d) Concurrent execution
Solution: a) Deadlocks
Question 10: What is a mutex?
a) A type of thread
b) A synchronization primitive that allows multiple threads to access a resource simultaneously
c) A synchronization primitive that ensures only one thread can access a resource at a time
d) A thread scheduler

Solution: c) A synchronization primitive that ensures only one thread can access a resource at a time

Lec 27 - Network Programming Part I

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Question 1:
Which protocol is connection-oriented and provides reliable data transfer?
a) TCP
b) UDP
c) HTTP
d) IP
Solution: a) TCP
Question 2:
In network programming, what is a socket?
a) A physical connector for cables
b) A software endpoint for sending or receiving data across a computer network
c) A type of router
d) A type of firewall
**Solution: b) A software endpoint for sending or receiving data across a computer network*
Question 3:
Which function is used to create a socket in Python?
a) socket.socket()
b) create_socket()
c) new_socket()
d) socket.create()
Solution: a) socket.socket()

Question 4:

What is the default port number for HTTP?

a) 80

b) 443
c) 8080
d) 21
Solution: a) 80
Question 5:
Which networking protocol is connectionless and does not guarantee reliable data delivery?
a) TCP
b) UDP
c) FTP
d) SMTP
Solution: b) UDP
Question 6:
Which command is used to bind a socket to a specific address and port?
a) socket.connect()
b) socket.bind()
c) socket.listen()
d) socket.accept()
Solution: b) socket.bind()
Question 7:
What does DNS stand for in networking?
a) Domain Network Server
b) Data Naming System
c) Distributed Network Service
d) Domain Name System
Solution: d) Domain Name System

Question 8:
Which Python library is commonly used for network programming?
a) netlib
b) socketlib
c) networkpy
d) socket
Solution: d) socket
Question 9:
What does IP address uniquely identify in a network?
a) Domain name
b) MAC address
c) Port number
d) Device
Solution: d) Device
Question 10:
Which method is used to establish a connection in a TCP client socket in Python?
a) connect()
b) send()
c) accept()
d) bind()
Solution: a) connect()

Lec 28 - Network Programming Part II **Ouestion 1:** Which protocol is commonly used for retrieving email from a mail server? a) HTTP b) SMTP c) POP3 d) UDP **Solution: c) POP3** **Question 2:** What does API stand for in the context of network programming? a) Application Protocol Interface b) Application Program Interface c) Automated Programming Interface d) Active Protocol Interface **Solution: b) Application Program Interface** **Question 3:** In network programming, what does the term "asynchronous" refer to? a) Data sent over a network using UDP b) Data sent over a network using TCP c) Simultaneous execution of multiple tasks without waiting for each to complete d) Sequential execution of tasks in a network application **Solution: c) Simultaneous execution of multiple tasks without waiting for each to complete**

Question 4:

Which encryption protocol ensures secure communication over a network?

a) HTTP

b) TCP
c) SSL/TLS
d) FTP
Solution: c) SSL/TLS
Question 5:
What is a RESTful API?
a) A protocol for sending emails
b) A standardized approach for creating and interacting with web services
c) A method for securing network connections
d) A type of network topology
Solution: b) A standardized approach for creating and interacting with web services
Question 6:
Which Python library is commonly used for making HTTP requests and interacting with APIs?
a) os
b) requests
c) socket
d) urllib
Solution: b) requests
Question 7:
What does OAuth stand for in the context of network security?
a) Open Authorization
a) Open Authorizationb) Online Authentication
b) Online Authentication

Question 8:
Which protocol is used for secure file transfer over a network?
a) HTTP
b) FTP
c) SMTP
d) UDP
Solution: b) FTP
Question 9:
What is a distributed application in network programming?
a) An application that only works on one computer
b) An application that is split into separate components that run on different machines
c) An application that uses UDP exclusively
d) An application that uses only synchronous programming
Solution: b) An application that is split into separate components that run on different machines
Question 10:
Which protocol is used for real-time communication over the Internet, often used in instant messaging and video conferencing?
a) SMTP
b) HTTP
c) UDP
d) XMPP
Solution: d) XMPP

Lec 29 - Network Programming Part III **Ouestion 1:** Which protocol is commonly used for sending emails from a client to a server? a) HTTP b) SMTP c) POP3 d) FTP **Solution: b) SMTP** **Question 2:** What is the purpose of analyzing network protocols? a) To create new protocols b) To ensure backward compatibility c) To improve network security and performance d) To eliminate the need for firewalls **Solution: c) To improve network security and performance** **Question 3:** Which technology enables devices to communicate and exchange data over the internet without human intervention? a) Web services b) IoT (Internet of Things) c) HTTP d) FTP **Solution: b) IoT (Internet of Things)**

Question 4:

What does REST stand for in the context of network programming?

a) Reliable Execution State Transfer

b) Remote Execution Services and Tools c) Representational State Transfer d) Responsive Endpoint Services Technology **Solution: c) Representational State Transfer** **Ouestion 5:** Which cloud service model provides virtualized hardware resources over the internet? a) SaaS (Software as a Service) b) IaaS (Infrastructure as a Service) c) PaaS (Platform as a Service) d) DaaS (Data as a Service) **Solution: b) IaaS (Infrastructure as a Service)** **Question 6:** What is a microservice architecture? a) A single monolithic application b) A network protocol c) A design pattern where an application is composed of small, independent services d) A method for transferring large files over the internet **Solution: c) A design pattern where an application is composed of small, independent services** **Question 7:** Which encryption protocol is commonly used to secure data transmitted over the internet? a) SSL b) TLS c) HTTP d) FTP **Solution: b) TLS**

Question 8: What does MQTT stand for in IoT communication?

- a) Message Queuing Transport Telemetry
- b) Message Queuing Telemetry Transport
- c) Mobile Query Transfer Technique
- d) Mobile Quota and Traffic Test
- **Solution: b) Message Queuing Telemetry Transport**

Question 9:

Which HTTP method is used to retrieve data from a web server?

- a) GET
- b) POST
- c) PUT
- d) DELETE
- **Solution: a) GET**

Question 10:

What is the purpose of load balancing in a networked system?

- a) To increase network latency
- b) To concentrate all traffic on a single server
- c) To evenly distribute traffic across multiple servers for improved performance and redundancy
- d) To decrease network security

Solution: c) To evenly distribute traffic across multiple servers for improved performance and redundancy

Lec 30 - Network Programming Part IV

Question 1:

What does SDN stand for in the context of network programming?

- a) Secure Data Network
- b) Software Defined Network
- c) Systematic Data Node
- d) Synchronous Data Network

Solution: b) Software Defined Network

Question 2:

Which technology allows for the creation of isolated network environments within a physical network?

- a) Software Defined Networking (SDN)
- b) Network Virtualization
- c) Cloud Integration
- d) Microservices Architecture

Solution: b) Network Virtualization

Question 3:

What is a container in the context of network programming?

- a) A physical device used for data transmission
- b) A software package that includes all dependencies to run an application
- c) A protocol for secure data transfer
- d) A specialized router

Solution: b) A software package that includes all dependencies to run an application

Question 4:

Which technology enables dynamic allocation of network resources to applications in real-time?

a) Network Virtualization

b) Cloud Integration c) Containerization d) Software Defined Networking (SDN) **Solution: d) Software Defined Networking (SDN)** **Ouestion 5:** What is the primary goal of AI-driven networking? a) To eliminate the need for network administrators b) To increase network latency c) To automate network management and optimization using AI algorithms d) To replace traditional networking protocols **Solution: c) To automate network management and optimization using AI algorithms** **Question 6:** Which containerization platform is widely used for deploying and managing containerized applications? a) Docker b) Kubernetes c) VirtualBox d) Vagrant **Solution: a) Docker** **Question 7:** What does SD-WAN stand for in network programming? a) Software-Defined Wide Area Network b) Secure Data Web Access Network c) Standard Digital Wireless Area Network

d) Systematic Data Web Application Network

Solution: a) Software-Defined Wide Area Network

Question 8:

Which technology abstracts network hardware, allowing for more flexible and programmable network management?

- a) Virtual Reality (VR)
- b) Network Virtualization
- c) Quantum Computing
- d) Cloud Integration

Solution: b) Network Virtualization

Question 9:

What role does REST API play in network programming?

- a) Secure network communication
- b) Data storage and retrieval
- c) Remote execution of code
- d) Standardized way for applications to communicate over HTTP

Solution: d) Standardized way for applications to communicate over HTTP

Question 10:

What is the purpose of orchestration in the context of network programming?

- a) To automate the deployment and management of network resources and services
- b) To physically connect devices to the network
- c) To analyze network protocols
- d) To secure data transmission

Solution: a) To automate the deployment and management of network resources and services