

# 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 computer programming?

- 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
- c) 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

### **\*\*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

### **\*\*Question 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
- b) Online Authentication
- c) Operating Authority
- d) Only Access

**\*\*Solution: a) Open Authorization\*\***

**\*\*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

### **\*\*Question 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\*\***

**\*\*Question 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)\*\***

**\*\*Question 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\*\***

