CS410 Visual Programming

Important mcqs

Lec 1 - Windows Programming

1. What is the primary programming language used for Windows Programming?

- a) Java
- b) C++
- c) Python
- d) Ruby

Solution: b) C++

2. Which API is commonly used for Windows Programming to access system resources?

- a) DirectX
- b) WinAPI
- c) OpenGL
- d) POSIX

Solution: b) WinAPI

3. Which programming framework is often used for Windows desktop applications?

- a) .NET Core
- b) MFC (Microsoft Foundation Classes)
- c) Node.js
- d) Django

Solution: b) MFC (Microsoft Foundation Classes)

4. What is the extension for Windows executable files?

- a) .exe
- b) .dll
- c) .txt
- d) .bat

Solution: a) .exe

5. Which programming language is commonly used for Universal Windows Platform (UWP) apps?

- a) Swift
- b) Java
- c) C#
- d) Ruby

Solution: c) C#

6. Which Windows Programming component is used for creating graphical user interfaces (GUI)?

- a) DirectX
- b) WinForms
- c) Windows Forms
- d) Win32

Solution: c) Windows Forms

7. Which Windows version introduced the Windows Presentation Foundation (WPF) framework?

- a) Windows XP
- b) Windows 7
- c) Windows 8
- d) Windows Vista

Solution: d) Windows Vista

8. Which tool is commonly used for debugging Windows applications?

a) Visual Studio Debugger

b) Eclipse Debugger

c) GDB (GNU Debugger)

d) Xcode Debugger

Solution: a) Visual Studio Debugger

9. Which Windows Programming approach allows communication between processes running on different machines?

- a) IPC (Inter-Process Communication)
- b) RPC (Remote Procedure Call)
- c) AJAX (Asynchronous JavaScript and XML)
- d) REST (Representational State Transfer)

Solution: b) RPC (Remote Procedure Call)

10. Which Windows component is used for handling events and messages in GUI applications?

- a) Message Loop
- b) Event Loop
- c) Control Loop
- d) Polling Loop

Solution: a) Message Loop

Lec 2 - Basic C Language Concepts

1. Question: Which keyword is used to define a constant in C?

- a) const
- b) constant
- c) #define
- d) final

Solution: a) const

2. Question: What is the correct syntax to declare a variable in C?

- a) variableName;
- b) int variableName;
- c) variableName = value;
- d) int variableName = value;

Solution: b) int variableName;

3. Question: What is the purpose of the "printf" function in C?

- a) To read user input
- b) To display output on the screen
- c) To perform mathematical operations
- d) To initialize a variable

Solution: b) To display output on the screen

4. Question: What does the "sizeof" operator return in C?

- a) The size of a variable in bytes
- b) The value of a variable
- c) The data type of a variable
- d) The address of a variable

Solution: a) The size of a variable in bytes

5. Question: How do you declare a pointer variable in C?

- a) pointerType variableName;
- b) int* variableName;
- c) int variableName*;
- d) *int variableName;

Solution: b) int* variableName;

6. Question: What is the purpose of the "scanf" function in C?

- a) To display output on the screen
- b) To read user input
- c) To perform mathematical operations
- d) To initialize a variable

Solution: b) To read user input

7. Question: Which loop is used to execute a block of code repeatedly as long as the condition is true?

- a) for loop
- b) while loop
- c) do-while loop
- d) switch loop

Solution: b) while loop

8. Question: What is the output of the following code snippet?

- a) 15
- b) 10
- c) 5
- d) Error

Solution: a) 15

9. Question: What is the correct syntax for the ternary operator in C?

a) x ? y : z;

b) x : y ? z;

c) x ? y : : z;

d) : x ? y z;

Solution: a) x ? y : z;

10. Question: What does the "return" statement do in a function in C?

- a) It declares a variable.
- b) It ends the function's execution.
- c) It performs a conditional check.
- d) It initializes a variable.

Solution: b) It ends the function's execution.

Lec 3 - Arrays and Pointers

1. Question: In C, how do you declare an integer array named "numbers" with 5 elements?

- a) array numbers[5];
- b) int numbers[5];
- c) int[] numbers = $\{5\}$;
- d) int numbers(5);

Solution: b) int numbers[5];

2. Question: What is the value of the expression "sizeof(numbers)" in C, where "numbers" is an integer array with 10 elements?

a) 10
b) 40
c) 4
d) 14
Solution: b) 40

3. Question: In C, how do you access the third element of an array named "data"?

a) data(3);

b) data[3];

c) data $\{3\}$;

d) data.3;

Solution: b) data[3];

4. Question: What is the correct way to pass an array "arr" to a function in C?

- a) function(arr);
- b) function(arr[]);
- c) function(&arr);
- d) function(*arr);

Solution: b) function(arr[]);

5. Question: What is a pointer in C?

- a) A variable that stores multiple values
- b) A variable that stores the address of another variable
- c) An array that points to another array
- d) A function that points to another function

Solution: b) A variable that stores the address of another variable

6. Question: What does the "*" symbol represent when used with a pointer variable in C?

- a) Multiplication
- b) Exponentiation
- c) Address of a variable
- d) Dereferencing the pointer

Solution: d) Dereferencing the pointer

7. Question: How do you declare a pointer variable named "ptr" that points to an integer in C?

- a) int* ptr;
- b) ptr* int;
- c) pointer ptr = int;
- d) $ptr = int^*$;

Solution: a) int* ptr;

8. Question: What is the value of "ptr" after the following code: "int num = 10; int* ptr = #"?

- a) 10
- b) The address of "num"
- c) The address of "ptr"
- d) Garbage value
- Solution: b) The address of "num"

9. Question: What happens when you increment a pointer in C using "ptr++"?

- a) The pointer points to the previous element.
- b) The pointer points to the next element.
- c) The pointer becomes NULL.
- d) The pointer points to the first element.

Solution: b) The pointer points to the next element.

10. Question: How do you dynamically allocate memory for an integer array "arr" of size 5 in C?

- a) int arr[5];
- b) int arr = (int*)malloc(5);
- c) int* arr = new int[5];
- d) int* arr = (int*)malloc(5 * sizeof(int));

Solution: d) int* arr = (int*)malloc(5 * sizeof(int));

Lec 4 - Structures and Unions

1. What is a structure in C/C++?

- a) A set of related functions
- b) A collection of variables of different data types
- c) A control flow statement
- d) A loop construct

Solution: b) A collection of variables of different data types

2. How do you access a member inside a structure in C/C++?

- a) Using the dot (.) operator
- b) Using the arrow (->) operator
- c) Using the at (@) symbol
- d) Using the pound (#) symbol

Solution: a) Using the dot (.) operator

3. What is the size of an empty structure in C/C++?

- a) 0 bytes
- b) 1 byte
- c) 4 bytes
- d) Depends on the architecture of the machine

Solution: b) 1 byte

4. What is the purpose of unions in C/C++?

- a) To define custom data types
- b) To group related variables
- c) To save memory by sharing memory among variables
- d) To implement conditional statements

Solution: c) To save memory by sharing memory among variables

5. Which operator is used to access a member inside a union in C/C++?

- a) Dot (.) operator
- b) Arrow (->) operator
- c) Colon (:) operator
- d) Double-colon (::) operator

Solution: a) Dot (.) operator

6. What happens if you modify one member of a union and then access another member?

- a) It is not allowed to modify union members individually
- b) The other member retains its old value
- c) It results in an error
- d) The behavior is undefined

Solution: d) The behavior is undefined

7. Which statement is true about the alignment of structure members?

- a) All members are aligned at even memory addresses
- b) The alignment depends on the order of declaration
- c) The alignment is automatic and doesn't follow any rule
- d) The alignment depends on the data type of the members

Solution: d) The alignment depends on the data type of the members

8. What is the keyword used to define a union in C/C++?

- a) class
- b) structure
- c) union
- d) typedef

Solution: c) union

9. Can a structure have another structure as its member in C/C++?

- a) Yes, but only one level deep
- b) No, structures cannot have other structures as members
- c) Yes, there is no such limitation
- d) Only if the structure is empty

Solution: c) Yes, there is no such limitation

10. What is the primary difference between a structure and a union in C/C++?

- a) A structure can hold variables of different data types, but a union cannot.
- b) A union can hold variables of different data types, but a structure cannot.
- c) A structure and a union are the same; there is no difference.
- d) The primary difference depends on the programming language being used.

Solution: a) A structure can hold variables of different data types, but a union cannot.

Lec 5 - Preprocessor Directives

Question 1:

Which preprocessor directive is used to include a file in the C/C++ program?

- A) #include
- B) #define
- C) #ifdef
- D) #ifndef

Solution: A) #include

Question 2:

What is the purpose of the #ifdef directive in C/C++?

- A) It checks if a macro is defined.
- B) It includes a header file in the program.
- C) It defines a new macro.
- D) It checks if a macro is not defined.

Solution: A) It checks if a macro is defined.

Question 3:

Which preprocessor directive is used to define a macro in C/C++?

- A) #ifdef
- B) #ifndef
- C) #define
- D) #include

Solution: C) #define

Question 4:

What does the #ifndef directive do in C/C++?

A) Checks if a macro is defined.

- B) Checks if a macro is not defined.
- C) Includes a header file in the program.
- D) Defines a new macro.

Solution: B) Checks if a macro is not defined.

Question 5:

Which directive is used to concatenate two tokens in C/C++?

- A) #define
- B) #ifdef
- C) ##
- D) #pragma

Solution: C)

Question 6:

What is the purpose of the #pragma directive in C/C++?

- A) To include a header file in the program.
- B) To define a new macro.
- C) To check if a macro is defined.
- D) To provide compiler-specific instructions.

Solution: D) To provide compiler-specific instructions.

Question 7:

Which directive is used to undefine a previously defined macro in C/C++?

- A) #undef
- B) #pragma
- C) #ifdef
- D) #ifndef

Solution: A) #undef

Question 8:

What does the #error directive do in C/C++?

- A) Includes a header file in the program.
- B) Prints an error message during compilation.
- C) Checks if a macro is defined.
- D) Undefines a previously defined macro.

Solution: B) Prints an error message during compilation.

Question 9:

Which directive is used to include a file only if a certain condition is true in C/C++?

- A) #define
- B) #error
- C) #ifdef
- D) #if

Solution: D) #if

Question 10:

What does the #pragma once directive do in C/C++?

- A) Includes a header file in the program.
- B) Defines a new macro.
- C) Prevents multiple inclusions of the same header file.
- D) Undefines a previously defined macro.

Solution: C) Prevents multiple inclusions of the same header file.

Lec 6 - Bitwise Operators and Macros

1. Which bitwise operator in C sets a bit at a specific position?

- a) &
- b) |
- c) ^
- d) <<

Solution: d) <<

2. What does the bitwise AND operator (&) do when applied to two integers?

- a) Returns the minimum value
- b) Returns the maximum value
- c) Performs a bitwise OR operation
- d) Performs a bitwise AND operation

Solution: d) Performs a bitwise AND operation

3. Which bitwise operator is used to toggle a specific bit in a number?

- a) &
- b) |
- c) ^
- d) <<

Solution: c) ^

4. What will be the result of the expression 12 | 9 in binary?

a) 11

b) 12

c) 9

d) 13

Solution: d) 13

5. Which bitwise operator is used to check if a specific bit is set in a number?

a) &

b) |

c) ^

d) <<

Solution: a) &

6. What is the result of the expression $5 \ll 2$?

a) 10

b) 20

c) 15

d) 25

Solution: b) 20

7. What will be the value of x after the operation: $x \models (1 \le 3)$?

a) 0

b) 1

c) 8

d) 16

Solution: c) 8

8. What does the #define directive do in C?

- a) Defines a new function
- b) Declares a variable
- c) Defines a new data type
- d) Defines a macro

Solution: d) Defines a macro

9. What is the purpose of the #ifdef preprocessor directive?

- a) To check if a function is defined
- b) To include a header file
- c) To define a new macro
- d) To conditionally compile code

Solution: d) To conditionally compile code

10. How can you unset a specific bit in an integer variable 'num' using a macro?

- a) #define UNSET_BIT(num, bit) num |= (1 << bit)
- b) #define UNSET_BIT(num, bit) num &= ~(1 << bit)
- c) #define UNSET_BIT(num, bit) num ^= (1 << bit)
- d) #define UNSET_BIT(num, bit) num = (1 << bit)

Solution: b) #define UNSET_BIT(num, bit) num &= ~(1 << bit)

Lec 7 - Calling Conventions, Storage Classes and Variable Scope
Question 1:

What is a "calling convention" in computer programming?

A) A set of rules for naming variables within a function.

- B) A set of rules for calling functions from different programming languages.
- C) A set of rules that govern how functions pass arguments and return values.
- D) A set of rules for defining functions in object-oriented programming.

Solution: C

Question 2:

Which storage class has a global scope and retains its value across function calls?

- A) auto
- **B) extern**
- C) static
- D) register

Solution: B

Question 3:

What is the default storage class for local variables in most programming languages?

- A) auto
- B) static
- C) register
- D) extern



Question 4:

Which storage class is used to define local variables with a lifetime that extends throughout the program's execution?

A) static

B) auto

C) extern

D) register

Solution: A

Question 5:

In C/C++, what keyword is used to declare a function with a variable number of arguments?

A) varargs

B) vararg

C) stdarg

D) ellipsis

Solution: D

Question 6:

In the context of function calling conventions, what does "caller-saved" refer to?

A) The caller function is responsible for saving and restoring the registers used by the called function.

B) The caller function is responsible for saving and restoring the stack space used by the called function.

C) The caller function is responsible for saving and restoring its own local variables during the call.

D) The caller function is responsible for saving and restoring the called function's local variables during the call.

Solution: A

Question 7:

What is the purpose of the "register" storage class?

- A) It requests the compiler to allocate a register for the variable for faster access.
- B) It indicates that the variable's value is stored in a hardware register.
- C) It specifies that the variable can only be used within a specific function.
- D) It requests the compiler to optimize the variable for space efficiency.

Solution: A

Question 8:

Which storage class is commonly used to share variables among multiple source files in C/C++?

- A) static
- B) extern
- C) register
- D) const

Solution: B

Question 9:

What happens to a variable declared with the "static" storage class inside a function?

- A) The variable becomes a global variable.
- **B**) The variable retains its value across function calls.
- C) The variable is only accessible within the function where it is declared.
- D) The variable is automatically initialized to zero.

Solution: B

Question 10:

In C/C++, what is the significance of the "const" storage class for variables?

- A) It ensures that the variable's value cannot be modified after initialization.
- B) It allows the variable to be accessed from any function in the program.
- C) It instructs the compiler to allocate the variable in read-only memory.
- D) It specifies that the variable's value cannot be optimized by the compiler.

Solution: A

Lec 8 - Windows Basics

Question 1:

Which operating system is developed by Microsoft and widely used in personal computers?

- A) macOS
- B) Linux
- C) Windows
- D) Android

Solution: C

Question 2:

What is the main purpose of the Start menu in Windows?

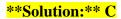
- A) To shut down the computer.
- B) To browse the internet.
- C) To access various features and installed programs.
- D) To customize the desktop wallpaper.

Solution: C

Question 3:

What does the Taskbar in Windows allow you to do?

- A) Access Control Panel settings.
- B) Manage installed applications.
- C) View and switch between open programs.
- D) Search for files on the computer.



Question 4:

Which Windows feature allows you to run multiple applications simultaneously on the screen?

- A) Start menu
- B) Taskbar
- C) Multitasking
- D) Control Panel

Solution: C

Question 5:

What is the purpose of the system tray (notification area) in Windows?

- A) Display the date and time.
- B) Launch installed applications.
- C) Manage user accounts.
- D) Show notifications and provide quick access to system functions.

Solution: D

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**Question 6:**
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Which utility in Windows allows you to uninstall software applications?

- A) Control Panel
- B) Task Manager
- C) Command Prompt

D) System Configuration

Solution: A

Question 7:

What is the default web browser in Windows?

A) Safari

B) Edge

C) Firefox

D) Chrome

Solution: B

Question 8:

What does the "Recycle Bin" in Windows do?

- A) Stores temporary files.
- B) Holds deleted files until permanently removed.
- C) Keeps track of recently accessed documents.
- D) Organizes files into categories.

Solution: B

Question 9:

Which Windows utility is used to check for and install updates to the operating system?

A) Control Panel

B) Task Manager

C) Windows Update

D) Disk Cleanup

Solution: C

Question 10:

How can you access the Control Panel in Windows?

- A) Right-click on the desktop and select "Control Panel."
- B) Click on the Start menu and search for "Control Panel."
- C) Press the Windows key + R and type "control."

D) All of the above.

Solution: D

Lec 9 - Windows Creation and Message Handling

1. What is a window in the context of graphical user interfaces?

- a) A type of mouse pointer
- b) A borderless frame
- c) A region on the screen that displays content and can interact with the user
- d) A computer peripheral

Solution: c) A region on the screen that displays content and can interact with the user

2. Which API is commonly used to create windows in Windows OS?

- a) JVM
- b) OpenGL
- c) DirectX
- d) WinAPI

Solution: d) WinAPI

3. What is the primary function of the Window Procedure in Windows programming?

- a) To create a new window
- b) To handle messages and events for a window
- c) To manage the position of the window on the screen
- d) To close an existing window

Solution: b) To handle messages and events for a window

- 4. Which message is sent to a window when the user clicks a mouse button?
 - a) WM_PAINT
 - b) WM_LBUTTONDOWN

d) WM_KEYDOWN

Solution: b) WM_LBUTTONDOWN

5. What is the role of the WM_PAINT message in Windows message handling?

- a) It requests the window to be repainted.
- b) It closes the window.
- c) It resizes the window.
- d) It moves the window to a new position.

Solution: a) It requests the window to be repainted.

6. The WM_CLOSE message is generated when:

- a) The window is minimized.
- b) The window is closed by the user or system.
- c) The window is moved.
- d) The window is resized.

Solution: b) The window is closed by the user or system.

7. Which message is sent to a window when the user presses a key on the keyboard?

- a) WM_MOUSEMOVE
- b) WM_KEYUP
- c) WM_CHAR
- d) WM_SIZE

Solution: c) WM_CHAR

8. Which Windows function is used to create a new window?

- a) CreateWindowEx
- b) DrawWindow
- c) NewWindow
- d) OpenWindow

Solution: a) CreateWindowEx

9. What is the purpose of the LPARAM and WPARAM parameters in the Window Procedure?

- a) They hold the window's position and size information.
- b) They hold the message-specific information and additional data.
- c) They are used to set the window's title.
- d) They are used to close the window.

Solution: b) They hold the message-specific information and additional data.

10. When handling a message in the Window Procedure, what should be returned after processing the message?

- a) The window handle (HWND)
- b) The wParam parameter
- c) The message itself
- d) 0 (zero)

Solution: d) 0 (zero)

Lec 10 - Architecture of Standard Win32 Application

1. Question: What is the main entry point for a Win32 application?

- a) Main()
- b) WinMain()
- c) ApplicationMain()
- d) Entry()

Solution: b) WinMain()

2. Question: Which library is commonly used for Win32 application development?

- a) JavaFX
- b) Qt
- c) WinAPI
- d) GTK

Solution: c) WinAPI

3. Question: The WinMain function receives command line arguments in the form of:

- a) An array of integers
- b) A null-terminated string
- c) An array of characters
- d) A pointer to a structure

Solution: d) A pointer to a structure

4. Question: The primary purpose of the Window Procedure (WndProc) is to:

- a) Register new window classes
- b) Process messages sent to the application

- c) Handle exceptions and errors
- d) Allocate memory for window objects

Solution: b) Process messages sent to the application

5. Question: How is the message loop typically implemented in a Win32 application?

- a) using a recursive function
- b) using a while loop
- c) using a for loop
- d) using a switch-case statement

Solution: b) using a while loop

6. Question: Which message is commonly used for handling window creation in the Window Procedure?

- a) WM_PAINT
- b) WM_CREATE
- c) WM_DESTROY
- d) WM_CLOSE

Solution: b) WM_CREATE

7. Question: The function used to create a new window in a Win32 application is:

- a) CreateWindow
- b) CreateWindowEx
- c) NewWindow
- d) OpenWindow

8. Question: The window class styles are specified during:

- a) Window creation
- b) Message loop processing
- c) Window destruction
- d) Message handling

Solution: a) Window creation

9. Question: How does the application receive messages from the operating system?

- a) Through function callbacks
- b) Through interrupt requests
- c) Through polling the message queue
- d) Through direct memory access

Solution: c) Through polling the message queue

10. Question: Which function is used to release the resources associated with a window?

- a) UnregisterClass
- b) DestroyWindow
- c) CloseWindow
- d) DisposeWindow

Solution: b) DestroyWindow

Lec 11 - User Interfaces

1. Question: What does UI stand for in software development?

- a) User Interface
- b) User Interaction
- c) User Integration
- d) Universal Integration

Solution: a) User Interface

2. Question: Which UI component is used to receive text input from the user?

- a) Label
- b) Button
- c) Textbox
- d) Checkbox

Solution: c) Textbox

3. Question: What is the primary purpose of a dropdown menu in a UI?

- a) Display images
- b) Display information
- c) Show notifications
- d) Provide a list of options

Solution: d) Provide a list of options

4. Question: Which UI element typically represents an action that users can trigger?

- a) Label
- b) Checkbox

- c) Button
- d) Radio button

Solution: c) Button

5. Question: What is the function of a progress bar in a UI?

- a) Display loading images
- b) Show the progress of an ongoing task
- c) Indicate errors
- d) Play multimedia content

Solution: b) Show the progress of an ongoing task

6. Question: Which UI component is used to display messages or information to users?

- a) Checkbox
- b) Label
- c) Textbox
- d) Dropdown menu

Solution: b) Label

7. Question: What is the primary role of a tooltip in a UI?

- a) Provide navigation options
- b) Display additional information on hover
- c) Trigger background processes
- d) Play audio feedback

Solution: b) Display additional information on hover

8. Question: Which UI component allows users to select multiple items from a list?

- a) Radio button
- b) Checkbox
- c) Textbox
- d) Dropdown menu

Solution: b) Checkbox

9. Question: What is the purpose of validation in UI design?

- a) Enhance the visual appeal
- b) Improve performance
- c) Ensure data accuracy and integrity
- d) Enable voice commands

Solution: c) Ensure data accuracy and integrity

10. Question: Which UI design principle focuses on arranging elements based on their importance or sequence?

- a) Alignment
- b) Proximity
- c) Hierarchy
- d) Contrast

Solution: c) Hierarchy

Lec 12 - Window Classes

1. What is a window class in graphical user interface programming?

- a) A specific type of window used for complex animations.
- b) A set of predefined windows provided by the operating system.
- c) A template that defines the structure and behavior of windows.
- d) A unique identifier assigned to each window in an application.

Solution: c) A template that defines the structure and behavior of windows.

2. Which function is used to register a window class in Windows API?

- a) CreateWindowEx()
- b) RegisterWindowClass()
- c) CreateWindowClass()
- d) RegisterClass()

Solution: d) RegisterClass()

3. What is the purpose of the window procedure in a window class?

- a) To register the window class with the operating system.
- b) To handle messages and events for the window.
- c) To create child windows within the main window.
- d) To set the initial style and attributes of the window.

Solution: b) To handle messages and events for the window.

4. How are window classes identified in an application?

- a) By a unique name string.
- b) By a numeric identifier assigned at runtime.

- c) By their position on the screen.
- d) By the color of the window's title bar.

Solution: a) By a unique name string.

5. What is the purpose of the "hInstance" parameter in the RegisterClass function?

- a) To specify the window's width and height.
- b) To pass a handle to the application's instance.
- c) To set the window's background color.
- d) To enable mouse interactions for the window.

Solution: b) To pass a handle to the application's instance.

6. How does a window procedure process messages in Windows API?

- a) By writing messages to a log file.
- b) By using a message queue for incoming messages.
- c) By displaying messages in a pop-up dialog.
- d) By forwarding messages to other windows.

Solution: b) By using a message queue for incoming messages.

7. What happens if a window class is unregistered before creating windows?

- a) Windows created with that class will become invisible.
- b) The application will crash when trying to create a window.
- c) The window class can never be registered again.
- d) Existing windows of that class will still be usable.

8. How can you change the style of a window after it has been created using a window class?

- a) By directly modifying the window's structure.
- b) By re-registering the window class with a new style.
- c) By using the SetWindowStyle function.
- d) By destroying the window and creating a new one.

Solution: d) By destroying the window and creating a new one.

9. How does a window procedure handle the WM_DESTROY message?

- a) By creating a new window in its place.
- b) By freeing resources and cleaning up the window.
- c) By resizing the window to its default size.
- d) By changing the window's title text.

Solution: b) By freeing resources and cleaning up the window.

10. What is the purpose of the "lpParam" parameter in the CreateWindowEx function?

- a) To pass user-defined data to the window procedure.
- b) To specify the window's position on the screen.
- c) To set the initial width and height of the window.
- d) To enable or disable specific window features.

Solution: a) To pass user-defined data to the window procedure.

Lec 13 - Graphics Device Interface

1. What does GDI stand for in computer graphics?

- a) Graphics Design Interface
- b) Graphics Display Interface
- c) Graphical Device Interface
- d) Graphical Display Interface

Solution: c) Graphical Device Interface

2. Which Windows API provides functions for 2D drawing and font rendering?

- a) GDI
- b) GUI
- c) API
- d) DirectX

Solution: a) GDI

3. Which GDI function is used to draw lines on the screen?

- a) DrawLine()
- b) LineTo()
- c) DrawPath()
- d) DrawSegment()

Solution: b) LineTo()

4. What is the purpose of the SelectObject function in GDI?

- a) To select a font for drawing text.
- b) To select a color for filling shapes.

- c) To select a pen or brush for drawing operations.
- d) To select a file for image loading.

Solution: c) To select a pen or brush for drawing operations.

5. Which GDI function is used to draw text on the screen?

- a) DrawText()
- b) TextOut()
- c) WriteText()
- d) PrintText()

Solution: b) TextOut()

6. Which GDI object is used to store graphical images?

- a) Pen
- b) Brush
- c) Bitmap
- d) Font

Solution: c) Bitmap

7. What is the purpose of the StretchBlt function in GDI?

- a) To draw a filled rectangle.
- b) To resize an image.
- c) To draw an elliptical shape.
- d) To draw text in bold format.

Solution: b) To resize an image.

8. Which GDI function is used to create a custom color brush?

- a) CreateSolidBrush()
- b) CreatePatternBrush()
- c) CreateColorBrush()
- d) CreateCustomBrush()

Solution: a) CreateSolidBrush()

9. How is transparency achieved in GDI?

- a) By using the SetTransparent function.
- b) By selecting a transparent color.
- c) GDI does not support transparency.
- d) By using the SetLayeredWindowAttributes function.

Solution: d) By using the SetLayeredWindowAttributes function.

10. Which GDI function is used to draw an arc?

- a) DrawArc()
- b) ArcTo()
- c) Arc()
- d) ArcSegment()

Solution: c) Arc()

Lec 14 - Painting and Drawing

1. Which art form involves creating visual representations using brushes and pigments on canvas?

- a) Painting
- b) Drawing
- c) Sculpture
- d) Pottery

Solution: a) Painting

2. What is the primary medium used in drawing?

- a) Charcoal
- b) Oil paint
- c) Watercolor
- d) Acrylic paint

Solution: a) Charcoal

3. Which art form typically uses pencils, ink, or charcoal on paper?

- a) Painting
- b) Drawing
- c) Sculpture
- d) Photography

Solution: b) Drawing

4. What is the primary tool used in painting?

- a) Pencil
- b) Brush

c) Chisel

d) Sculpting tool

Solution: b) Brush

5. Which art form involves shaping and manipulating materials like clay or stone?

- a) Painting
- b) Drawing
- c) Sculpture
- d) Photography

Solution: c) Sculpture

6. Which medium is known for its quick-drying properties and versatility in painting?

- a) Oil paint
- b) Watercolor
- c) Acrylic paint
- d) Ink

Solution: c) Acrylic paint

7. What is the technique of shading in drawing called, where darker areas are represented by closely spaced lines?

- a) Hatching
- b) Stippling
- c) Blending
- d) Cross-hatching

Solution: a) Hatching

8. What is the process of adding water to watercolor paint to achieve lighter tones?

- a) Diluting
- b) Mixing
- c) Blending
- d) Wash

Solution: a) Diluting

9. Which art form involves capturing images using a camera or other photographic equipment?

- a) Painting
- b) Drawing
- c) Sculpture
- d) Photography

Solution: d) Photography

10. Which medium provides a unique texture and effect when applied to a painting surface?

- a) Watercolor
- b) Oil paint
- c) Pastels
- d) Acrylic paint

Solution: c) Pastels

Lec 15 - Windows Management

Question 1:

Which Windows tool is used to view and manage running processes?

- A) System Monitor
- B) Task Manager
- C) Event Viewer
- D) Registry Editor

Solution:

B) Task Manager

Question 2:

Which Windows feature is used for organizing files and folders in a hierarchical structure?

- A) Taskbar
- B) Start Menu
- C) File Explorer
- D) Control Panel

Solution:

C) File Explorer

Question 3:

Which Windows utility is used to schedule automatic maintenance tasks such as software updates and disk optimization?

- A) System Restore
- B) Windows Defender

C) Action Center

D) Task Scheduler

Solution:

D) Task Scheduler

Question 4:

Which Windows component is responsible for managing hardware and software settings, user accounts, and system security?

- A) Device Manager
- B) Control Panel
- C) Registry Editor
- D) Security Center

Solution:

C) Registry Editor

Question 5:

Which Windows tool provides a real-time graphical representation of system performance and resource usage?

- A) Performance Monitor
- B) Resource Monitor
- C) Task Manager
- D) Disk Cleanup

Solution:

B) Resource Monitor

Question 6:

Which Windows feature allows multiple users to work on the same computer while keeping their settings and data separate?

A) User Account Control (UAC)

B) Guest Account

C) Fast User Switching

D) System Restore

Solution:

C) Fast User Switching

Question 7:

Which Windows utility is used to create and manage network connections, including Wi-Fi and Ethernet?

A) Network and Sharing Center

B) Device Manager

C) Task Manager

D) Windows Firewall

Solution:

A) Network and Sharing Center

Question 8:

Which Windows tool provides a central location for configuring and customizing various system settings?

A) Control Panel

B) Task Manager

C) Disk Cleanup

D) Windows Defender

Solution:

A) Control Panel

Question 9:

Which Windows feature provides a way to revert the system to a previous state in case of issues?

- A) Action Center
- B) System Restore
- C) Task Scheduler
- D) Disk Cleanup

Solution:

B) System Restore

Question 10:

Which Windows component is responsible for managing user authentication and access to resources on a network?

- A) Network and Sharing Center
- B) Windows Defender
- C) User Account Control (UAC)
- D) Active Directory

Solution:

D) Active Directory

Lec 16 - Input Devices

1. Question: Which input device is commonly used for pointing and clicking on a computer screen?

- a) Keyboard
- b) Touchscreen
- c) Mouse
- d) Joystick

Solution: c) Mouse

2. Question: Which input device uses pressure-sensitive technology for precise drawing and design work?

- a) Keyboard
- b) Stylus
- c) Trackball
- d) Gamepad

Solution: b) Stylus

3. Question: Which input device is used primarily for capturing images and documents?

- a) Webcam
- b) Scanner
- c) Microphone
- d) Touchpad

Solution: b) Scanner

4. Question: A touch-sensitive display that allows users to interact directly with the screen is called a:

- a) Trackpad
- b) Joystick
- c) Touchscreen
- d) Keyboard
- Solution: c) Touchscreen

5. Question: Which input device is designed to detect and record sound waves?

- a) Speaker
- b) Microphone
- c) Barcode reader
- d) Game controller
- Solution: b) Microphone

6. Question: What input device is commonly used for capturing handwriting and signatures?

- a) Touchscreen
- b) Trackball
- c) Pen Tablet
- d) Joystick

Solution: c) Pen Tablet

7. Question: Which device uses light and sensors to read barcodes and enter data into a computer system?

- a) Microphone
- b) Barcode Reader
- c) Mouse
- d) Stylus

Solution: b) Barcode Reader

8. Question: Which input device allows users to input commands by speaking?

- a) Keyboard
- b) Mouse
- c) Touchpad
- d) Voice Recognition System

Solution: d) Voice Recognition System

9. Question: What input device is used for capturing video footage and live streaming?

- a) Webcam
- b) Scanner
- c) Touchscreen
- d) Joystick
- Solution: a) Webcam

10. Question: Which input device is used for gaming and controlling characters within video games?

- a) Printer
- b) Trackpad
- c) Gamepad
- d) Touchscreen

Solution: c) Gamepad

Lec 17 - Resources

*Question 1:**

Which type of resource is sunlight?

- A) Renewable resource
- B) Non-renewable resource
- C) Human-made resource
- D) Inexhaustible resource

Solution: A) Renewable resource

Question 2:

Which is an example of a non-renewable resource?

- A) Wind energy
- B) Solar energy
- C) Natural gas
- D) Biomass

Solution: C) Natural gas

Question 3:

What is the primary source of energy for fossil fuels?

- A) Wind
- B) Sun
- C) Water
- D) Earth's core

Solution: B) Sun

Question 4:

Which resource is considered an abiotic factor?

A) Plants

- B) Animals
- C) Water
- D) Soil

Solution: D) Soil

Question 5:

Which resource plays a vital role in sustainable agriculture?

- A) Pesticides
- B) Synthetic fertilizers
- C) Biodiversity
- D) Monoculture

Solution: C) Biodiversity

Question 6:

Which type of resource is coal?

- A) Renewable resource
- B) Non-renewable resource
- C) Recyclable resource
- D) Natural resource

Solution: B) Non-renewable resource

Question 7:

What is the main advantage of hydroelectric power?

- A) Minimal environmental impact
- B) High energy efficiency
- C) Abundant fuel supply
- D) Cost-effectiveness

Solution: B) High energy efficiency

Question 8:

Which resource is most directly responsible for climate change?

- A) Wind energy
- B) Solar energy
- C) Fossil fuels
- D) Geothermal energy

Solution: C) Fossil fuels

Question 9:

What is an example of a sustainable use of water resources?

- A) Excessive irrigation
- B) Industrial pollution
- C) Water conservation practices
- D) Open dumping of waste

Solution: C) Water conservation practices

Question 10:

Which type of resource is air?

- A) Non-renewable resource
- B) Inexhaustible resource

C) Renewable resource

D) Synthetic resource

Solution: B) Inexhaustible resource

Lec 18 - String and Menu Resources

Question 1:

In Android app development, what is the primary purpose of using string resources?

- A) Storing images
- B) Handling user inputs
- C) Localization and text management
- D) Creating animations

Solution: C) Localization and text management

Question 2:

Which XML file is commonly used to define string resources in an Android app?

- A) `strings.xml`
- B) `layout.xml`
- C) `strings_resources.xml`
- D) `text.xml`

Solution: A) `strings.xml`

Question 3:

What is the benefit of using string resources over hardcoding text directly in code?

- A) String resources improve app performance
- B) String resources make the code shorter
- C) String resources allow for easy localization and updates
- D) String resources enable offline functionality

Solution: C) String resources allow for easy localization and updates

Question 4:

In Android, which resource is used to define the structure and content of app menus?

- A) `layout.xml`
- B) `menu.xml`
- C) `string.xml`
- D) `menu_layout.xml`

Solution: B) `menu.xml`

Question 5:

What is the purpose of using menu resources in Android apps?

- A) Displaying images
- B) Handling user gestures
- C) Organizing navigation and actions
- D) Playing audio files

Solution: C) Organizing navigation and actions

Question 6:

In Android, how are string resources typically accessed in Java/Kotlin code?

- A) Using the `R.layout` class
- B) Using the `R.menu` class
- C) Using the `R.string` class
- D) Using the `R.drawable` class

Solution: C) Using the `R.string` class

Question 7:

Which attribute is used in menu resources to associate an action with a menu item?

- A) `click`
- B) `action`
- C) `id`
- D) `link`

Solution: C) `id`

Question 8:

What is the purpose of defining string resources for app labels and titles?

- A) Enhance app security
- B) Improve app performance
- C) Enable text-to-speech functionality
- D) Facilitate consistent branding and localization

Solution: D) Facilitate consistent branding and localization

Question 9:

Which of the following is NOT a best practice when working with string resources?

- A) Hardcoding all text directly in code
- B) Defining all app text in the `strings.xml` file
- C) Using string placeholders for dynamic content
- D) Providing translations for different languages

Solution: A) Hardcoding all text directly in code

Question 10:

What is the role of a string resource ID in Android development?

- A) It specifies the size of the string
- B) It assigns a unique identifier to the string resource

- C) It controls the visibility of the string
- D) It defines the font style of the string

Solution: B) It assigns a unique identifier to the string resource

Lec 19 - Menu and Dialogs

Question 1: What is the primary purpose of a context menu in a graphical user interface (GUI)?

- **Options:**
- A) Display advertising content
- B) Provide navigation links
- C) Present contextual options
- D) Show system notifications

****Solution:**** C) Present contextual options

****Question 2:**** Which type of dialog is used to request user input or information in a GUI?

Options:

- A) Context menu
- B) Confirmation dialog
- C) File dialog
- D) Toast notification

Solution: B) Confirmation dialog

******Question 3:****** In a mobile app, which UI element typically contains options accessible through a swipe-down gesture?

- **Options:**
- A) Context menu
- B) Dropdown menu
- C) Navigation bar
- D) Action bar

Question 4: What is the purpose of a modal dialog in a software application?

- **Options:**
- A) Display advertisements
- B) Interrupt user workflow
- C) Provide navigation links
- D) Show real-time data updates

Solution: B) Interrupt user workflow

******Question 5:****** Which type of menu remains hidden until the user activates it, often by clicking or hovering over a specific element?

- **Options:**
- A) Context menu
- B) Dropdown menu
- C) Toolbar menu
- D) Docked menu

Solution: B) Dropdown menu

****Question 6:**** Which dialog box is commonly used to save or open files in an application?

Options:

- A) Context dialog
- B) Options dialog

C) File dialog

D) Modal dialog

Solution: C) File dialog

****Question 7:**** What is the purpose of a navigation drawer in a mobile app?

Options:

- A) Display notifications
- B) Show contextual options
- C) Provide app settings
- D) Offer navigation between screens

Solution: D) Offer navigation between screens

******Question 8:** In a web application, what type of menu is typically displayed horizontally at the top of the page?

Options:

- A) Context menu
- B) Dropdown menu
- C) Sidebar menu
- D) Mega menu

Solution: B) Dropdown menu

****Question 9:**** What is the purpose of a toast notification in a GUI?

Options:

- A) Provide navigation links
- B) Display contextual options
- C) Show real-time data updates
- D) Request user confirmation

Solution: C) Show real-time data updates

******Question 10:** Which type of menu is often used to provide a list of available actions related to a selected item?

- **Options:**
- A) Context menu
- B) Dropdown menu
- C) Toolbar menu
- D) Docked menu

Solution: A) Context menu

Lec 20 - Dialogs

Question 1: What is the primary purpose of a modal dialog in a software application?

- A) Provide real-time updates
- B) Display advertisements
- C) Require user interaction
- D) Show navigation links

Solution: C) Require user interaction

******Question 2:** Which type of dialog allows users to interact with other parts of the interface while it is open?

- **Options:**
- A) Modeless dialog
- B) Confirmation dialog
- C) Context dialog
- D) Information dialog

Solution: A) Modeless dialog

******Question 3:** What type of dialog might be used to confirm an irreversible action, like deleting a file?

Options:

- A) Modeless dialog
- B) Confirmation dialog
- C) Context dialog
- D) Information dialog

******Question 4:** In a mobile app, which type of dialog might be used to request permission to access the user's location?

- **Options:**
- A) Modeless dialog
- B) Confirmation dialog
- C) Permission dialog
- D) Input dialog

Solution: C) Permission dialog

Question 5: What is the purpose of an input dialog in a software application?

- **Options:**
- A) Display contextual options
- B) Show real-time updates
- C) Request user input
- D) Provide navigation links

Solution: C) Request user input

******Question 6:** Which type of dialog might be used to display additional information about a feature or function?

Options:

A) Context dialog

B) Modeless dialog

- C) Information dialog
- D) Confirmation dialog

Solution: C) Information dialog

****Question 7:**** What is the key characteristic of a toast notification in a user interface?

Options:

- A) Requires user interaction
- B) Blocks other interactions
- C) Appears as a modal window
- D) Brief and unobtrusive message

Solution: D) Brief and unobtrusive message

****Question 8:**** When might a file dialog be commonly used in a software application?

Options:

- A) Confirming an action
- B) Providing real-time updates
- C) Selecting and saving files
- D) Displaying contextual options

Solution: C) Selecting and saving files

Question 9: What is the purpose of a modeless dialog in a user interface?

Options:

A) Request user confirmation

- B) Interrupt user workflow
- C) Provide real-time updates
- D) Allow interaction with the interface

Solution: D) Allow interaction with the interface

****Question 10:**** In a web application, what type of dialog might be used to gather user feedback?

Options:

- A) Feedback dialog
- B) Modeless dialog
- C) Context dialog
- D) Confirmation dialog

Solution: A) Feedback dialog

Lec 21 - Using Dialogs and Windows Controls

****Question 1:**** What is the primary purpose of using dialogs in a software application?

- **Options:**
- A) Provide advertisements
- B) Enhance navigation
- C) Gather user input
- D) Display real-time updates

Solution: C) Gather user input

****Question 2:**** Which type of dialog requires user interaction before proceeding with a task?

- **Options:**
- A) Modeless dialog
- B) Confirmation dialog
- C) Context dialog
- D) Information dialog

Solution: B) Confirmation dialog

Question 3: What do modeless dialogs allow users to do while they are open?

Options:

- A) Interact with other parts of the interface
- B) Display real-time updates
- C) Block all interactions
- D) Gather user feedback

Question 4: What is the purpose of using windows controls in a user interface?

- **Options:**
- A) Provide advertising content
- B) Enhance navigation only
- C) Gather user input
- D) Aid user interactions and tasks

Solution: D) Aid user interactions and tasks

Question 5: Which windows control is typically used for selecting dates or times?

- **Options:**
- A) Dropdown menu
- B) Radio button
- C) Checkbox
- D) Date picker

Solution: D) Date picker

Question 6: How can checkboxes be used in windows controls?

- **Options:**
- A) For selecting multiple options
- B) For navigation between screens
- C) To display real-time updates

D) For confirming irreversible actions

Solution: A) For selecting multiple options

****Question 7:**** Which windows control is used for entering single-line text input?

- **Options:**
- A) Text box
- B) Radio button
- C) Checkbox
- D) Dropdown menu

Solution: A) Text box

Question 8: What is the purpose of using radio buttons in windows controls?

Options:

- A) Selecting multiple options
- B) Displaying real-time updates
- C) Allowing free-form text input
- D) Selecting a single option from a group

Solution: D) Selecting a single option from a group

****Question 9:**** What do navigation bars and tabs help achieve in a user interface?

- **Options:**
- A) Gather user input
- B) Display advertisements

- C) Enhance navigation and organization
- D) Show real-time updates

Solution: C) Enhance navigation and organization

****Question 10:**** In a software application, what is the purpose of using tooltips with windows controls?

Options:

- A) Display advertisements
- B) Provide real-time updates
- C) Offer additional information or context
- D) Gather user feedback

Solution: C) Offer additional information or context

Lec 22 - Using Common Dialogs and Windows Controls

Question 1: Which common dialog is used to open and select files from the system?

- A) OpenFileDialog
- B) SaveFileDialog
- C) PrintDialog
- D) ColorDialog

Solution: A) OpenFileDialog

****Question 2: Which Windows Control is used to display a list of selectable items in a dropdown** menu?**

- A) ComboBox
- B) ListBox
- C) RadioButton
- D) CheckBox

Solution: A) ComboBox

Question 3: Which common dialog is used to pick colors in an application?

- A) OpenFileDialog
- B) SaveFileDialog
- C) PrintDialog
- D) ColorDialog

Solution: D) ColorDialog

Question 4: Which Windows Control is used to display images in an application?

- A) TextBox
- B) PictureBox
- C) Label
- D) Button

Solution: B) PictureBox

Question 5: Which common dialog is used to save files with a specified name and location?

- A) OpenFileDialog
- B) SaveFileDialog
- C) PrintDialog
- D) ColorDialog

Solution: B) SaveFileDialog

Question 6: Which Windows Control allows users to select multiple options from a list?

- A) ComboBox
- B) ListBox
- C) RadioButton
- D) CheckBox

Solution: B) ListBox

Question 7: Which common dialog is used to set print options before printing a document?

- A) OpenFileDialog
- B) SaveFileDialog
- C) PrintDialog
- D) ColorDialog

Solution: C) PrintDialog

Question 8: Which Windows Control is used to display a single-line text input field?

- A) ComboBox
- B) ListBox
- C) TextBox
- D) CheckBox

Solution: C) TextBox

Question 9: Which common dialog is used to select folders/directories from the system?

- A) OpenFileDialog
- B) SaveFileDialog
- C) FolderBrowserDialog
- D) ColorDialog

Solution: C) FolderBrowserDialog

Question 10: Which Windows Control is used to display a binary on/off choice?

A) ComboBox

B) ListBox

C) RadioButton

D) CheckBox

Solution: D) CheckBox