

1. Draw ellipse in the window with default pen and hatched brush....5marks.(188)(not sure)

in case of Circle, we create hatch brush, we created a hatch brush which has a style of diagonal cross lines. After creating a hatch brush we select it on device context to draw a figure. After drawing, brush must be deleted.

case CIRCLE:

```
hBrush = CreateHatchBrush(HS_DIAGCROSS, RGB(170, 150, 180));
SelectObject(hDC, hBrush);
Ellipse(hDC, 70, 10, 210, 150);
DeleteObject(hBrush);
break;
```

2. how can return multiple values from a function illustrate the concept using c++ code....5 marks

```
#include<iostream.h>
#include<conio.h>
void calc(int x, int y, int *add, int *sub)
{
    *add = x+y;
    *sub = x-y;
}
void main()
{
    int a=20, b=11, p,q;
    clrscr();
    calc(a,b,&p,&q);
    cout<<"Sum = "<<p<<" Sub = "<<q;
    getch();
}
```

3. name consists of three parts using internet address family.....3marks....(378)

A name consists of three parts when using the Internet address family:

- The address family.
- A host addresses.
- A port number that identifies the application.

4. write complete syntax of GetSubMenu Function.....(242)

The GetSubMenu function retrieves a handle to the drop-down menu or submenu activated by the specified menu item.

HMENU GetSubMenu(

```
HMENU hMenu,  
int nPos  
);
```

hMenu: Handle to the menu.

nPos: Specifies the zero-based relative position in the specified menu of an item that activates a drop-down menu or submenu.

Return Value: If the function succeeds, the return value is a handle to the drop-down menu or submenu activated by the menu item. If the menu item does not activate a drop-down menu or submenu, the return value is NULL.

5. Difference between subclass and super class(128,134)

Supper-Classing

Super-classing defines a class that adds new functionality to a predefined window class, such as the button or list box controls. Super classing involves creating a new class that uses the window procedure of an existing class for basic functionality.

Sub-classing:

Sub-classing allows you to change the behavior of an existing window, typically a control, by inserting a message map to intercept the window's messages. Sub classing is a technique that allows an application to intercept messages destined for another window. An application can augment, monitor, or modify the default behavior of a window by intercepting messages meant for another window. Sub-classing is an effective way to change or extend the behavior of a window without redeveloping the window.

6. use of GetDlgItem.....(184)

GetDlgItem function returns the handle of a dialog item. Using this function we can easily get the handle of the edit control, displayed on dialog box.

7. error 404 page not found what does it mean?.....(398)

404 Not Found - requested document not found on this server

8. Describe briefly window menu...marks2.... (229)

The Window menu (also known as the System menu or Control menu) is a pop-up menu defined and managed almost exclusively by the operating system. The user can open the window menu by clicking the application icon on the title bar or by right clicking anywhere on the title bar.

9. Illustrate status polling in terms of DOS programing..(google,2)

There is no other input devices work in DOS other than Keyboard. So what DOS does is, it will keep on waiting for the input from keyboard. Keyboard will have a memory region into which keyboard controller writes the key pressed data. But it won't notify the DOS.

That's why DOS is continuously look in to this region within continuous time intervals. This is called as Keyboard status polling.

10. Redirection code for 5 marks

Redirecting the client irrespective of the HTTP request!

The string in the #define directive is assumed to be on a single line

```
#define RESPONSE
```

```
"HTTP/1.1 302 Object Moved\r\n
```

```
Location: http://www.vu.edu.pk\r\n\r\n"
```

Sending the hard-coded HTTP response back to browser

```
send(clientSockets[(UINT)clientNumber],  
RESPONSE,  
sizeof(RESPONSE),  
0);
```

11. two Disadvantage of Thread(346)

Threads major disadvantage is that they make the system slow because thread uses the time sharing concept that is another name multitasking. A multitasking operating system divides the available processor time among the processes or threads that need it.

The length of the time slice depends on the operating system and the processor. Because each time slice is small (approximately 20 milliseconds), multiple threads appear to be executing at the same time. This is actually the case on multiprocessor systems, where the executable threads are distributed among the available processors.

12. Pressing a key causes a WM_KEYDOWN or WM_SYSKEYDOWN message to be placed in the thread message queue attached to the window that has the keyboard focus why explain?(193)

Pressing a key causes a WM_KEYDOWN or WM_SYSKEYDOWN message to be placed in the thread message queue attached to the window that has the keyboard focus. Releasing a key causes a WM_KEYUP or WM_SYSKEYUP message to be placed in the queue. Key-up and key-down messages typically occur in pairs, but if the user holds down a key long enough to start the keyboard's automatic repeat feature, the system generates a number of WM_KEYDOWN or WM_SYSKEYDOWN messages in a row. It then generates a single WM_KEYUP or WM_SYSKEYUP message when the user releases the key.

13. System and non-system keystrokes(194)

System keystrokes produce system keystroke messages, WM_SYSKEYDOWN and WM_SYSKEYUP. Nonsystem keystrokes produce nonsystem keystroke messages, WM_KEYDOWN and WM_KEYUP.

System keystroke messages are primarily used by the system rather than by an application. The system uses them to provide its built-in keyboard interface to menus and to allow the user to control which window is active. System keystroke messages are generated when the user types a key in combination with the ALT key, or when the user types and no window has the keyboard focus (for example, when the active application is minimized). In this case, the messages are posted to the message queue attached to the active window. Nonsystem keystroke messages are used by application windows; the DefWindowProc function does nothing with them. A window procedure can discard any nonsystem keystroke messages that it does not need.

14. What mean by MIME?(395)

MIME stands for Multi-purpose Internet Mail Extensions.

MIME contains encoding features, added to enable transfer of binary data, e.g. images (GIF, JPEG etc.) via mail. Using MIME encoding HTTP can now transfer complex binary data, e.g. images and video.

15. write the three use of dialogs.(248)

Dialogs are important resource in windows. Most of the information in window are displayed in dialog boxes. Simple example of dialog boxes is about dialog box or properties are shown in normally in dialog boxes.

A dialog box is a temporary window an application creates to retrieve user input. An application typically uses dialog boxes to prompt the user for additional information for menu items. A dialog box usually contains one or more controls (child windows) with which the user enters text, chooses options, or directs the action.

Windows also provides predefined dialog boxes that support common menu items such as Open and Print. Applications that use these menu items should use the common dialog boxes to prompt for this user input, regardless of the type of application.

16. Write the syntax of the system menu function.(245)

The GetSystemMenu function allows the application to access the window menu (also known as the system menu or the control menu) for copying and modifying.

```
HMENU GetSystemMenu(  
    HWND hWnd, //handle to the window  
    BOOL bRevert //action specification  
);
```

hWnd: Handle to the window that will own a copy of the window menu.

bRevert: Specifies the action to be taken. If this parameter is FALSE, GetSystemMenu returns a handle to the copy of the window menu currently in use. The copy is initially identical to the window menu, but it can be modified. If this parameter is TRUE, GetSystemMenu resets the window menu back to the default state. The previous window menu, if any, is destroyed.

17. Copy-on-write protection is an optimization that allows multiple processes to map their virtual address spaces such that they share a physical page until one of the processes why?(300)

Copy-on-write protection is an optimization that allows multiple processes to map their virtual address spaces such that they share a physical page until one of the processes modifies the page. This is part of a technique called lazy evaluation, which allows the system to conserve physical memory and time by not performing an operation until absolutely necessary.

18. When a key is press for long time then what will be happen with application.(201)

Specifies the repeat count for the current message. The value is the number of times the keystroke is autorepeated as a result of the user holding down the key. If the keystroke is held long enough, multiple messages are sent. However, the repeat count is not cumulative.

19. When the system is overloaded a dialog massage is open and whenever you Press OK button you cannot access to the other dialog why?

20. What is the purpose of function send (bla, ba, bla) parameters.(383)

The send function sends data on a connected socket.

```
int send(  
  
    SOCKET s,  
  
    const char* buf,  
  
    int len,  
  
    int flags  
  
);
```

s: Descriptor identifying a connected socket.

buf: Buffer containing the data to be transmitted.

len: Length of the data in buf, in bytes

flags: Indicator specifying the way in which the call is made.

Return Values: If no error occurs, send returns the total number of bytes sent, which can be less than the number indicated by len. Otherwise, a value of SOCKET_ERROR is returned. The send function is used to write outgoing data on a connected socket. For message-oriented sockets, care must be taken not to exceed the maximum packet size of the underlying provider, which can be obtained by using getsockopt to retrieve the value of socket option SO_MAX_MSG_SIZE. If the data is too long to pass atomically through the underlying protocol, the error WSAEMSGSIZE is returned, and no data is transmitted.

21. int connect(SOCKET s, const struct sockaddr* name, int namelen); Define the all parameters (381)

The connect function establishes a connection to a specified socket.

s: Descriptor identifying an unconnected socket.

name: Name of the socket in the sockaddr structure to which the connection should be established.

namelen: Length of name, in bytes

Return Values: If no error occurs, connect returns zero. Otherwise, it returns SOCKET_ERROR, and a specific error code can be retrieved by calling WSAGetLastError.

22. Explain CGI in simple words?(412)

CGI is Common Gateway Interface. Win32 executable execute by the server. All browser request data is available at stdin (read using scanf() etc.) and all output sent to stdout (output using printf etc.) is sent to the browser instead of the server screen.

23. Explain DNS with example(370)

Domain Name System (DNS), the locator service of choice in Microsoft® Windows®, is an industry-standard protocol that locates computers on an IP-based network. IP networks such as the Internet and Windows networks rely on number-based addresses to process information. Users however, are better at remembering letter-based addresses, so it is necessary to translate user-friendly names <http://www.vu.edu.pk> into addresses that the network can recognize (203.215.177.33).

24. What parameters we pass to the function to destroy a timer. killtimer() (234)(not sure)

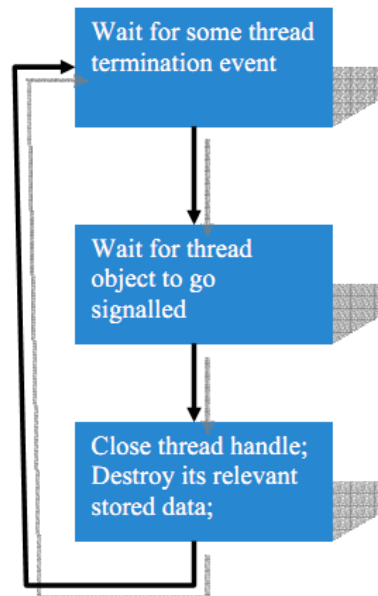
case WM_DESTROY:

if(bTimerStarted)

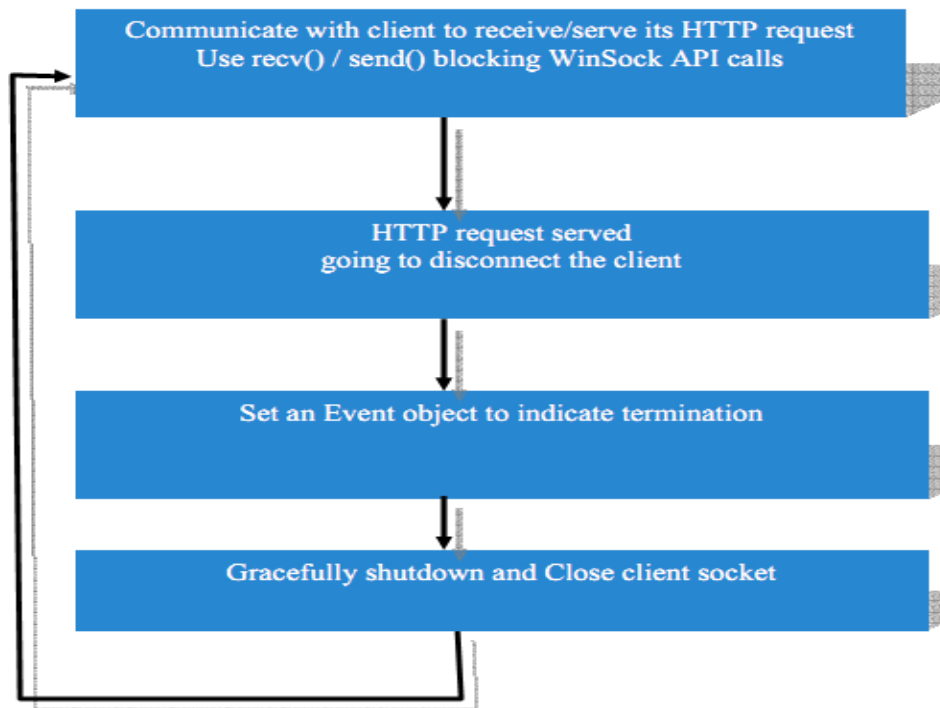
KillTimer(hWnd, ID_TIMER);

25. Give a pictorial representation of steps involved in terminating a connection.(403)

Terminate communication threads (thread routine)



servClient Communication thread routine



26. Separate the resources and controls form combo box, icon, font, listbox (214)

Resources: ACCELERATORS,BITMAP ,CURSOR, DIALOG ,DIALOGEX ,FONT ,ICON ,MENU ,MENUEX ,MESSAGETABLE ,POPUP ,RCDATA ,STRINGTABLE ,User-Defined ,VERSIONINFO

Controls: AUTO3STATE ,AUTOCHECKBOX ,AUTORADIOBUTTON,CHECKBOX ,COMBOBOX ,CONTROL ,CTEXT ,DEFPUSHBUTTON ,EDITTEXT ,GROUPBOX ,ICON ,LISTBOX ,LTEXT

27. CreateListBox function with parameters was given and you have to tell what properties should have the resultant control.(295)

To create a list box by using the CreateWindow or CreateWindowEx function, use the LISTBOX class, appropriate window style constants, and the following style constants to define the list box. After the control has been created, these styles cannot be modified.

28. What are resources DLLs?

A resource-only DLL is a DLL that contains nothing but resources, such as icons, bitmaps, strings, and dialog boxes. Using a resource-only DLL is a good way to share the same set of resources among multiple programs.

29. what is the purpose of Bind Function?

Bind:

The bind function is used on an unconnected socket before subsequent calls to connect or listen functions. It is used to bind to either connection-oriented (stream) or connectionless (datagram) sockets. When a socket is created with a call to the socket function, it exists in a namespace (address family), but it has no name assigned to it. Use the bind function to establish the local association of the socket by assigning a local name to an unnamed socket.

The bind function associates a local address with a socket.

```
int bind(SOCKET s,  
const struct sockaddr* name,  
int namelen);
```

30. Write down the basic socket operation.

The following are the basic operations performed by both server and client systems.

1. Create an unbound socket
2. Binding Server
3. Connecting Client
4. Listen
5. Accept

31. Provide the Description of EDIT Control given below

EM_CANUNDO

EM_GETTEXTLIMIT

EM_GETHANDLE

EM_CANUNDO

Returns TRUE if the edit control operation can be undone.

EM_GETTEXTLIMIT

The size can be up to a predefined limit of approximately 32 kilobyte (KB) for single-line edit controls. Because this limit can change, it is called a soft limit

EM_GETHANDLE

Returns a handle identifying the buffer containing the multiline edit control's text. It is not processed by single-line edit controls.

31. Define Dynamic Link Libraries in detail? Also explain its relation with memory management? (332)

A dynamic-link library(DLL) is a module that contains functions and data that can be used by another module (application or DLL). Every process that loads the DLL maps it into its virtual address space. After the process loads the DLL into its virtual address, it can call the exported DLL functions. The system maintains a per-thread reference count for each DLL. When a thread loads the DLL, the reference count is incremented by one. When the process terminates, or when the reference count becomes zero.

32. How windows socket function works?

Windows Sockets (Winsock) enables programmers to create advanced Internet, intranet, and other network-capable applications to transmit application data across the wire, independent of the network protocol being used. With Winsock, programmers are provided access to advanced Microsoft® Windows® networking capabilities such as multicast and Quality of Service (QOS).

Windows Socket defines a standard service provider interface (SPI) between the application programming interface (API), with its exported functions and the protocol stacks. The following are the basic operations performed by both server and client systems.

1. Create an unbound socket
2. Binding Server
3. Connecting Client
4. Listen
5. Accept
6. Send
7. Receive

Code:

The WSASStartup function initiates use of WS2_32.DLL by a process.

```
int WSAStartup(  
    WORD wVersionRequested, /*MAKEWORD(2,2)*/  
    LPWSADATA lpWSADATA /*POINTER TO THE WSADATA structure  
);
```

wVersionRequested: Highest version of Windows Sockets support that the caller can use.

The high-order byte specifies the minor version (revision) number; the low-order byte specifies the major version number.

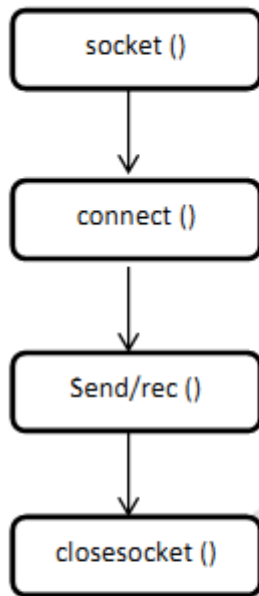
lpWSADATA: Pointer to the WSADATA data structure that is to receive details of the Windows Sockets implementation.

33. What is meant by “Static web contents” ?

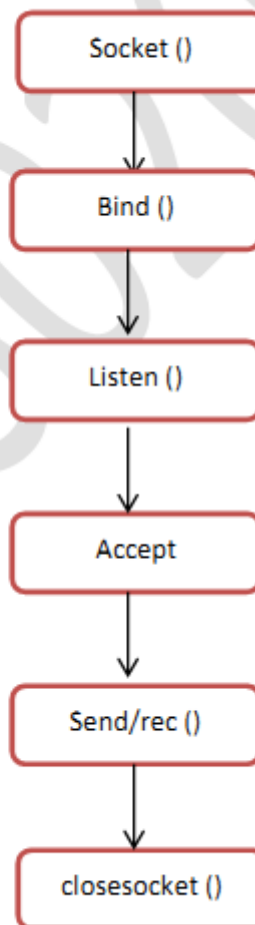
Server blindly dumps HTML files to the clients. That is 'static content'. Static web content is published to regular files on your server and handled using the simplest methods available to the web server

34. Differentiate b/w server socket and client socket?

Server socket calls:



Client socket calls:



35. if you include CS_DBLCLKS in your window call style, the windows procedure receives which message for double click. (Specify exact sequence).

A double-click message is always the third message in a four-message series. The first two messages are the button-down and button-up messages generated by the first click. The second click generates the double-click message followed by another button-up message. For example, double-clicking the left mouse button generates the following message sequence:

- ☐ WM_LBUTTONDOWN
- ☐ WM_LBUTTONUP

WM_LBUTTONDBLCLK

WM_LBUTTONUP

36. Name of the common dialog boxes?

Common dialog boxes include the Open and Save As file dialog boxes; the Find and Replace editing dialog boxes; the Print, Print Setup, Print Property Sheet, and Page Setup printing dialog boxes; and the Color and Font dialog boxes.