REAL TIME OPERATING SYSTEM PROGRAMMING-II: Windows CE, OSEK and Real time Linux

Lesson-9:
WCE Serial Communication, Network, device-to-device socket and Communication Functions

1. Windows CE Serial Communication functions

Create File

- CreateFile─ Creates the port for communication. Returns a Handle for serial COM1 port.

- The arguments: TEXT ("COM1"), GENERIC_READ | GENERIC_WRITE, 0, NULL, OPEN_EXISTING, 0, and NULL

Read File

- **Read File** – reads from the port for communication. Returns an integer
- Arguments: Handle returned on creation, pointer to character, pointer to 8-bit number of bytes read, NULL

Write file

- WriteFile Write file to the port for communication

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Transmit Communication Char

- TransmitCommChar ─ Send character into queue for port transmission

- Returns a boolean for successful or unsuccessful transmission .

- The arguments: Handle returned on creation and character for transmission

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Set Communication Mask

- **SetCommMask─** To set communication mask.

- Arguments: Handle returned on creation and 32-bit for event mask to specify clear to send, break, data set ready, error, receive line signal detect, character received, a receive event flag received, transmit buffer empty

Set Communication State

- SetCommState to set communication state.

- Arguments: Handle for file and long pointer to device control block (DCB)

- DCB defines 32-bits for DCB length, baud rate, binary flag, parity flag, and 24 other flags

Get Communication Mask

- GetCommState to get communication state.

- Arguments: Handle returned on creation and long pointer for 32-bit event mask

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Wait Communication Event

- **WaitCommEvent** ─ To wait for event.

- Arguments: Handle for file, long pointer for 32-bit event mask and NULL (for long pointer for overlap)

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2. WNet API Network Connection functions

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Network Connection functions

- WNetAdd-Connection─ Maps the network (remote) resource.

- Returns a 32 bit code for no error or error.

- Arguments: Handle, three long pointers for *network resource* and string for password and user names and one 32-bit value for the flags.

- The *network resource*─ a structure, which contains long pointers for remote name and local name

Network Connection functions

- WNetConnection-Dialog to dialog on disconnection.

- Arguments: Handle and 32-bit for resource type. Resource type may be printer or disk or any other available

- WNetDisconnectDialog

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Network Connection functions

- WNetCancel-Connection

- Disconnects the network (remote) connection added earlier.

- Returns a 32-bit code for no error or error.

- Arguments: used are one long pointer for name (local or remote), 32-bit value for the flags, boolean to specify forced disconnection when files or devices are open and not closed

Network Connection functions

- WNetGet-Connection

- WNetGetUser

- WNetGetUniversalName

- SetCommState .

3. Winsock APIs for sockets programming

Winsock APIs

- SOCKET socket
- bind
- accept
- connect
- listen
- send
- recv
- shutdown
- closesocket

Summary

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We learnt

- Windows Serial communication
- Network functions
- WinSock APIs

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End of Lesson-9 of chapter 10 on
WCE Serial Communication, Network, device-to-device socket and Communication Functions