

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

Lesson-7:

WCE Handling of Inputs from keys, touch screen and mouse

1. Inputs from Keyboard

SetFocus

- SetFocus—to specify the focused Window so that input directs to that Window.
- Windows sends a series of messages for the Window in focus.

Keyboard

- Keyboard— used to enter many characters, commands or large text.
- Physical keyboard —s inconvenient in handheld device.
- Soft keyboard — controls and simulates the virtual keyboard on touch screen.
- An application can get the input either from physical keyboard or from soft keyboard.
- An application can simulate key event

Messages on stylus tap

- Every key or action has an assigned value
- For example, a virtual key value is `VK_LBUTTON` which passes a value `01` on a stylus tap.
- A virtual key value is `VK_RETURN`, which passes a value `0D` when Enter key presses

Querying a keyboard key

- SHORT GetKeyState (int iVirtKey)

2. Inputs from touch screen or mouse

Inputs from touch screen or mouse

- Touch screen for input is equivalent to single button mouse input
- Mouse has a cursor.
- When a mouse is pressed, the window is sent the message `WM_LBUTTONDOWN` on left button down and release of `WM_LBUTTONUP` on left button up events

Inputs from touch screen or mouse

- WM_MOUSEMOVE message when the stylus is moved within the same window.
- When stylus is dragged outside the in-focus window, the WM_MOUSEMOVE messages stop.
- If SetCapture procedure is called than, WM_MOUSEMOVE messages continue.
- ReleaseCapture stops sending the messages of WM_MOUSEMOVE

Get Mouse Move Points

- GetMessageMovePoints sends the messages for each point traced by stylus on the screen from a start to end.
- GetMessageMovePoints integrated with handwriting recognizer application can be used handwriting on the PocketPC to write the text or commands or messages

Button Clicks

- WM_LBUTTONDOWNBLCLK message is sent on double tap of stylus.
- For each message the parameters
lParameter = two 16-bit screen tap horizontal and vertical position values x and y, and
- wParameter = 16-bits for the flags corresponding to which key shift or control held down or not.

Right button click

- Right button click of mouse is simulated using stylus when ALT key is held down while tapping

Summary

We learnt

- Message pass from OS to Windows on input actions using keyboard or or touch screen

End of Lesson-7 of chapter 12 on
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