

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

Lesson-8: WCE Controls and Menus

1. Windows Controls

Windows Controls

- Each Window uses the number of classes, called *Controls*.
- A control has number of user-interface elements.
- The user-interface examples are *button*, *radio* and *checkbox*.
- The user-interface elements are predefined for a Control and there exists a Windows Control library.
- Pre-definition and library help in each application window has same feel and look.

Windows Controls

- A Control is also a Window and creates by CreateWindowEx or CreateWindow
- A control may be static control. It displays a text (as per defined alignment) or icon or bitmap
- A control is scroll bar control

2. Button Control for User Interface

Button

- Control for user interface is *Button*.
- Button appearance can be set.
- An owner window can also draw the owned button

Push-button control

- Push-button control— When stylus taps the button, it generates a `WM_COMMAND` message with a 16-bit parameter `wParameter` for the flag `BN_CLICKED`.
- `BN_CLICKED` flag specifies that button is clicked.

Checkbox button

- A square box with blank or filled circle or a label using which user specifies a choice by tap stylus at that point and which toggles between blank and filled.
- Checkbox toggles between two states.

Radio button

- Radio button— a button to allow user to select among the interrelated choices and when one selects the other may unselect.
- Application checks or unchecks a radio button.

Group Box button

- It is an empty box with a text label.
- Text in the box gives the interface for programming

3. List Box control

List Box control

- Used for selecting among list of items displayed by text.
- WCE supports a constant string data style in list box control.
- Style `LBS_EX_CONSTSTRINGDATA`.
- Only the pointer to string saves at the Window not the string.
- The application is supposed to manage that string

4. Edit control

Edit Control

- Used for keying in the text and for editing it.
- The keyed text is upper cases when `ES_UPPERCASE` style is set.
- When `ES_LOWERCASE` style, the edit text appears as lower cases.
- The keyed text is visible as `***` when `ES_PASSWORD` style is set

5. Combo Box Control

Edit Control

- One can use two or more control in the combo box.
- A combo box in WCE is drop-down or drop-down list.
- Drop-down is an edit-text field control with a button on the right side.
- When this button is clicked a list box for selection appears.
- Drop-down list is a list of texts each with a button on the right side.
- The stylus taps at any one of it to choose

6. Windows Menus

Windows Menus

- WCE menus — at the menu bar or command bar control.
- The CreateMenu, AppendMenu, InsertMenu — procedures to create, append or insert a menu item.
- CreatePopupMenu— a procedure to nest the menus.
- Window generates WM_COMMAND message and the ID parameter of the menu item is sent

Summary

We learnt

- WM_Command
- ID of Menu item
- WCE provisions for GUIs based on Windows, menus, dialog boxes, radio and check buttons.

End of Lesson-8 of chapter 12 on
WCE Controls and Menus