Non-psychic debugging: If you can't find something, make sure you're looking in the right place

devblogs.microsoft.com/oldnewthing/20070123-04

January 23, 2007

Raymond Chen

This isn't psychic debugging, but it's the sort of dumb mistake everybody makes and which you can't see when re-reading your code because your brain shows you what you want to see, not what's really there.

> I'm trying to respond to the `PSN_QUERYINITIALFOCUS` notification, but it's not working. What am I doing wrong?
>
> ```
> INT_PTR CALLBACK DlgProc(HWND hdlg, UINT uMsg,
>                          WPARAM wParam, LPARAM lParam)
> {
>  switch (uMsg) {
>  ...
>  case WM_NOTIFY:
>   switch (reinterpret_cast<NMHDR*>(lParam)->code) {
>   ...
>   case PSN_QUERYINITIALFOCUS:
>    {
>     PSHNOTIFY *ppsn = reinterpret_cast<PSHNOTIFY*>(lParam);
>     SetWindowLongPtr(ppsn->hdr.hwndFrom, DWLP_MSGRESULT,
>                  (LPARAM)GetDlgItem(ppsn->hdr.hwndFrom, IDC_MYCONTROL));
>    }
>    return TRUE;
>   ...
>   }
>   break;
>  }
>  return FALSE;
> }
> ```

You can stare at this code for ages and completely overlook that the wrong window handle is being passed to `GetDlgItem` and `SetWindowLongPtr`. The `hwndFrom` of a `WM_NOTIFY` message is the window that is generating the notification; in this case, the `PSN_QUERYINITIALFOCUS` is generated from the property sheet frame window. But the result of a dialog message needs to be stored in the extra bytes of the dialog that's **receiving** the message, not the one that's sending it. And when you call `GetDlgItem`, the window

manager searches for the control among the children of the window you pass as the first parameter—but here, `IDC_MYCONTROL` is a child of the property sheet page, not the property sheet frame.

The correct code should read

```
SetWindowLongPtr(hdlg, DWLP_MSGRESULT,
                 (LPARAM)GetDlgItem(hdlg, IDC_MYCONTROL));
```

This phenomenon of missing the obvious because your brain shows you what you want to see (rather than what's actually there) reminds me of a time one of my colleagues called me into his office to help figure out why one of his loops was iterating only once. He called the function up on the screen and talked me through it. "Okay, now the variables are set up for the loop, so `while` we haven't found the entry, we grab the next item from the list..."

I hesitatantly interrupted. "Um, ' `while` '? The code says ' `if` '."

"Oops. Um, nevermind. Nothing to see here. Move along now."

This is the same reason you want to have somebody else proofread your writing. Since you wrote it, your brain will show you what you meant to write, not necessarily what you actually wrote.

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