Subject: Re: Know what you're using. Size of some common types.
Posted by Lance on Fri, 31 Dec 2021 19:20:48 GMT
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In the spirit of previous discussion with Novo, the following minor change to CtrlCore/CtrlCore.h should decrease the sizeof(Ctrl) and that of all its derivative by 8 bytes on a 64-bit platform. While on 32-bit system there is no gain(Ctrl has been perfectly fine tuned for 32-bit platform), and there should be no penalties either.

Current code:
```
 Top        *top;
 int        exitcode;

 Ctrl       *prev, *next;
 Ctrl       *firstchild, *lastchild;//16
 LogPos      pos;//8
 Rect16      rect;
 Mitor<Frame> frame;//16
 String      info;//16
 int16       caretx, carety, caretcx, caretcy;//8

 byte        overpaint;
```

Proposed change:
```
 Top        *top;

 Ctrl       *prev, *next;
 Ctrl       *firstchild, *lastchild;//16
 LogPos      pos;//8
 Rect16      rect;
 Mitor<Frame> frame;//16
 String      info;//16
 int16       caretx, carety, caretcx, caretcy;//8

 int        exitcode; // move the line here

 byte        overpaint;
```

After the change, sizeof(Ctrl) is reduced from 152 bytes to 144 bytes on 64bit platform (both MSBT22x64 and CLANG64), while on 32bit platform, it remains unchanged with CLANG, but increases by 8 bytes with MSBT22. This increase is unexpected. If anybody can explain it or figure out a way to avoid it, it will be fully appreciated.

@mirek or @klugier, please consider apply the change after identifying and fixing the unexpected behavior with MSBT. The change is too simple to have potential danger and will affect all objects of Ctrl and its derivatives.

PS: By making use of MSC 32 bit flag _M_IX86, the above problem could be circumvented as follows:

```
...
 Top        *top;
#if defined(_M_IX86) // 32bit MSC compiler
 int   exitcode;
#endif

 Ctrl       *prev, *next;
 Ctrl       *firstchild, *lastchild;//16
 LogPos      pos;//8
 Rect16      rect;
 Mitor<Frame> frame;//16
 String      info;//16
 int16       caretx, carety, caretcx, caretcy;//8

#if !defined(_M_IX86)
 int        exitcode;
#endif
 byte       overpaint;

 bool       unicode:1;

 bool       fullrefresh:1;

 bool       transparent:1;
 bool       visible:1;
 bool       enabled:1;
 bool       wantfocus:1;
 bool       initfocus:1;
 bool       activepopup:1;
 bool       editable:1;
 bool       modify:1;
 bool       ignoremouse:1;
...
```

File Attachments
1) a.png, downloaded 655 times