
Subject: Re: Make THISFN simpler and more powerful

Posted by [Lance](#) on Thu, 10 Oct 2024 12:06:48 GMT

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Lance wrote on Wed, 09 October 2024 10:17C++23 provides a remedy to write portable bitfield code, without having to resort to unnecessary bit by bit initialization/update.

Here is an example.

```
union Flags{
int32 dummy;
struct{
    byte borderLeft:3;
    byte borderRight:3;
    byte borderTop:3;
    byte borderBottom:3;
    byte halign:2;
    byte valign:2; //16th bit

    bool faceNotNull:1;
    bool boldNotNull:1;
    bool heightNotNull:1;
    bool widthNotNull:1;
    bool underlineNotNull:1;
    bool italicNotNull:1;
    bool strikeoutNotNull:1; //23rd bit
};

Flags() : dummy(0){ static_assert(sizeof(*this)==sizeof(dummy)); }

static constexpr int32 FontMask()
{
    Flags f;
    f.faceNotNull = true;
    f.boldNotNull = true;
    f.heightNotNull = true;
    f.widthNotNull = true;
    f.underlineNotNull = true;
    f.italicNotNull = true;
    f.strikeoutNotNull = true;
    return f.dummy;
}

void Border(int border)
{
    borderLeft = borderRight = borderTop = borderBottom = border;
}
```

```

void SetAllFontProperties()
{
    dummy |= FontMask();
}

void ClearAllFontProperties()
{
    dummy &= ~FontMask();
}

bool AllFontPropertiesSet()const
{
    return ( dummy & FontMask() ) == FontMask();
}
};

```

It's a lot more work. But there is one added benefit: if you change the bitfields definition and add a few bits in front of the font properties group, you have a better chance not to break existing code unknowingly.

with `std=c++23`, `gcc` and `msvc` accept the above code. But `clang` rejects it, for good reason. The union default constructor used in `constexpr ...FontMask()const` should be `constexpr` modified too.

```

constexpr Flags() : dummy(0){
    static_assert(sizeof(*this)==sizeof(dummy));
}

```