liblepto - Feature #633

add distance.hpp

09.04.2025 16:02 - Maximilian Seesslen

Status:	Neu	**Beginn:**	09.04.2025
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Zugewiesen an:	Maximilian Seesslen	**% erledigt:**	0%
Kategorie:		**Geschätzter Aufwand:**	0.00 Stunde
Zielversion:		**Aufgewendete Zeit:**	0.00 Stunde
CS Zielversion:			

Beschreibung

Trivial function to handle overflows in counters.
Think about an package counter with 8Bit.
You want to check the continuity of packages and that no packages are lost.
E.g. you would check counter_new_package > counter_old_package. this will fail on overflow border.
but distance(counter_old_package, counter_new_package) will be correctly "1".

```
#include <type_traits>

template<typename T>
constexpr T distance( T c1, T c2)
{
    static_assert(std::is_signed<T>::value, "Requires signed type");
    return( c2 - c1 );
}

static_assert( distance( (char)127, (char)-128 ) ==  1, "A" );
static_assert( distance( (char)-128, (char)127 ) ==  -1, "A" );
static_assert( distance( -1, 1 ) ==  2, "A" );
static_assert( distance( ((char)0x7F), ((char)0x80) ) ==  1, "A" );
static_assert( distance( ((char)0xFF), ((char)0x00) ) ==  1, "B" );
static_assert( distance( ((char)0x80), ((char)0x7F) ) == -1, "C" );
static_assert( distance( ((char)0x00), ((char)0xFF) ) == -1, "D" );
```

Historie

#1 - 09.04.2025 16:08 - Maximilian Seesslen

- Beschreibung aktualisiert