

integer division without divide functionality

Division with integers in C, for testing 32 bit max as dividend.

I've found a code in some forum, but it had a bug. Nevertheless, the function implemented in C:

```
int DIV ( int dividend , int divisor ) {  
    int q = 0;  
  
    while (dividend >= divisor) {  
        dividend -= divisor;  
        q++;  
    }  
  
    return q;  
}
```

Although, if time is critical and large numbers are plausible, this will be SLOW. A more sophisticated one:

```
tUI32 DIV_tester_UI ( tUI32 dividend, tUI32 divisor )  
{  
    tUI32 q = 0;  
    tUI16 cnt = 0;  
    tUI32 tmp = 0;  
    tUI32 sft = 1;  
  
    if (divisor != 0 && dividend != 0 && dividend >= divisor )  
    {  
        if (dividend == divisor)  
        {  
            q = 1;  
        }  
    }
```

C

C

```
    else
    {
        while ( dividend > divisor )
        {
            tmp = dividend;

            while (tmp > divisor)
            {
                tmp = tmp >> 1;
                sft=sft << 1;
                cnt++;
            }

            if ( tmp != divisor )
            {
                cnt--;
                sft = sft>>1;
            }

            q += sft;
            dividend = dividend - (divisor<<cnt);

            cnt = 0;
            sft = 1;
        }

        if ( dividend == divisor )
        {
            q += 1;
        }
    }

    return q;
}
```

Created by Peter Molnar <mail@petermolnar.net>, published at 2011-05-10 07:08 UTC, last modified at 2021-10-31 15:57 UTC , to canonical URL <https://petermolnar.net/article/integer-division-without-divide-functionality/> , licensed under CC-BY-4.0 .

