Object-Oriented Programming, Task List 9

Due: 26 May 2010

1. Using the big numbers of last week, write a function

   ```cpp
   int compare( std::vector< char > nr1,
                std::vector< char > nr2 )
   ```

   that returns -1 if nr1 < nr2, returns 0 if nr1 == nr2 and which returns 1
   if nr1 > nr2.

   (It is very similar to the `lessThan` method that I showed in class.)

2. Write a function

   ```cpp
   std::vector< char > subtract( std::vector< char > nr1,
                                std::vector< char > nr2 );
   ```

   That computes nr1 − nr2. In case nr1 < nr2, the result should be 0.

3. Write a function

   ```cpp
   std::vector< char > divide( std::vector< char > nr1,
                               std::vector< char > nr2 )
   ```

   that computes nr1 / nr2. It should use the following algorithm:

   ```cpp
   // Algorithm for computing z = x/y.
   
z = 0;
f = 1;
while( y < x )
{
f = f * 10;
y = y * 10;
}
while( f > 0 )
{
    while( x >= y )
    {
        x = x - y;
        z = z + f;
    }
    f = f / 10;
    y = y / 10;
}

Now z contains the answer.