ELEMENTARY ADDITION

Given any two positive integers, say \(a, b\) of any size, show an algorithm in any form (English, pseudoCode, etc) to add them to produce the sum \(s\), (using a carry \(c\)) as you did in elementary school.

For example:

\[
\begin{align*}
a &= 97261 \\
b &= 8354 \\
c &= 110100 \text{ carry} \\
\hline
s &= 105615 \text{ sum}
\end{align*}
\]

ELEMENTARY ADDITION

Begin at the right, least significant two digits \(a, b\)
Set carry \(c\) to 0

Repeat
  Add the two digits \(a, b\) and carry \(c\)
  If the sum is larger than 9 then
    Set the carry to 1 and
    Set the sum to \((\text{sum} - 10)\)
  Else
    Set the carry to 0 and
    Set \(s\) to sum
  EndIf
  Output sum digit \(s\)
  Get the next two digits \(a, b\)
Exit when both digits exhausted
End Repeat