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-- Week 1, Activity 13:
-- Modify the previous exercise so that it returns all numerals in the subject
-- intercalated with the positions of the intercalated plus operators, like
-- this:
--      print(patt:match("12+13+25"))
--      --> 12 3 13 6 25

local lpeg = require "lpeg"

-- After some googling I found this useful reference:
-- LPeg: Parsing Grammars for Lua (https://www.inf.puc-rio.br/~roberto/lpeg)

-- Lexical Elements:
espaco = lpeg.S(" \n\t")^0
numero = lpeg.P("-")^-1 * lpeg.R("09")^1 * espaco
adisub = lpeg.S("+ -") * espaco
muldiv = lpeg.S("* /") * espaco
parini = lpeg.P("(") * espaco
parfim = lpeg.P(")") * espaco

-- Pattern:
p = espaco * lpeg.C(numero) * (lpeg.Cp() * (adisub + muldiv) * lpeg.C(numero))^0

-- Some tests:
-- These must be OK:
print(p:match("12+13+25"))
print(p:match("12+13+25 XXX"))
print(p:match("12 + 13 +25"))
print(p:match("12 + 13 +25      XXXXX"))
print(p:match("12 - 13 -25"))
print(p:match("12 + 13 - -25"))
print(p:match("12+13+25      + 34      +      12345"))
print(p:match("100 + 200 + 100 + 400"))
-- These must FAIL:
print(p:match("+"))
```