

Counting Bitstrings

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In the 2023 vol. of the College Mathematics journal, Didier Pinchon and George Stoica proposed the following problem:

Let x_n denote the number of bitstrings of length n which contain neither 11 nor 000 as substrings. Find a recursive formula for x_n .

For example, for the stated restrictions, 1010010 is a valid bitstring of length 7, but 1100101 is not.

We have extended this problem to find explicit and recursive equations for x_n with any number and combination of restrictions. See the code for details and take a look at the web demo to try it yourself!

A paper detailing our findings is coming soon.