FAQ : NKS (New Kind of Science)

NKS (New Kind of Science):

Stephen Wolfram's pet project (*), detailed in the NKS book (**). You take all possible simple rules for some situation, run them, look at the results, see whether interesting patterns emerge. This strategy is called "mining the computational universe". A showcase example of this was the treatment of all possible elementary cellular automata (ECA), which was only made possible by a clever enumeration of all possible sets of ECA rules. See FAQ: ECA (elementary cellular automata).

The current project started when Ken Caviness attended the 2009 NKS Summer School program in Pisa, Italy, and selected SSSs (sequential substitution systems, "sessies") as a research topic. Sessies are much harder to enumerate than ECAs, but several publications later we now have a robust enumeration algorithm permitting an NKS treatment of sessies.

(* One of Wolfram's main goals for creating Mathematica was to make NKS possible.)

(** http://en.wikipedia.org/wiki/A_New_Kind_of_Science, http://www.wolframscience.com/nksonline/toc.html)

Articles giving some background on Steven Wolfram and his projects:

https://medium.com/cantors-paradise/richard-feynmans-advice-to-a-young-stephen-wolfram-1985-d572dc360c18

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