

Sequence Complexity

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- 1 2 3 4 ... ?
- 9 9 9 ... ?
- 1 2 2 3 3 3 ... ?
- 1 2 2 3 3 4 ... ?
- 1 1 2 1 2 3 1 1 2 1 2 3 1 2 3 4 ... ?
- 1 1 1 1 2 2 ... ?

Completing those sequences: easy for a human being
(trivial notions in math)
What about computers?

- Two operators
 - Copy: C
 - Increment: I
- No combinatory explosion
- Work and think in a "human" way

Suffixed notation, close to Factor:

- Copy:

What Times C

Examples:

- $5\ 5\ 5\ 5 \rightarrow 5\ 4\ C$
- $1\ 2\ 1\ 2\ 1\ 2 \rightarrow \{1\ 2\}\ 3\ C$

- Increment:

What Where Times I

Examples:

- $1\ 2\ 3\ 4 \rightarrow 1\ 0\ 4\ I$
- $1\ 1\ 1\ 2\ 1\ 2\ 3\ 1\ 3 \rightarrow \{1\ 1\ 1\}\ \{0\ 2\}\ 3\ I$

If we can compress a sequence to one operator and its arguments,
we just have to increment its *Times* field and decompress

We try:

- to remove from 0 up to $(\text{length} - 2)$ elements
- an operator
- a tested size

With all those choices, we try to compress the whole sequence.
We try another one if complexity is too high.

Possible improvements

- Solve "once applied operators" problem
- Find a Kantian model
- Respect "human" memory use

Subject not that easy
Factor is a powerful language
Very enlightening project