

Bases Between Given Exponents (BBGE)

Language specification

By Anonymous

July 2020

Table of Contents

Description.....3

Example.....4

BNF.....5

References.....6

Description

Bases Between Given Exponents (BBGE) is a theoretical, esoteric, non-Turing complete programming language dedicated to printing the results of problems of the nature: “Output all bases between these bounds for which the product of raising the base(s) to a given exponent is also a whole number for which another base can be raised to a second exponent”. Hence Bases Between Given Exponents(BBGE).

Example

“Code golf challenge: Print out a list of numbers from 1-10000 who's square is also a cube number”(2020, Cass). This can also be expressed as: “find all the bases between 1 and 10,000(inclusively) for which the following statement is true: $\sqrt[3]{base^2} = whole\ number$ ”. Using the syntax highlighted by the BNF, this would give “b1-10000g2e3e” which when written in BBGE style pseudo code gives: “bases 1-10000 given exponent 2 and exponent 3”. “b1-10000g2e3e” would output: “1 8 27 64 125 216 343 512 729 1000 1331 1728 2197 2744 3375 4096 4913 5832 6859 80000 9261”.

BNF

| | | |
|---------------|-----|------------------------------------|
| <program> | ::= | <bases><between><given><exponents> |
| <bases> | ::= | b |
| <between> | ::= | <lowerBound>"- "<upperBound> |
| <lowerBound> | ::= | <numberValue> |
| <upperBound> | ::= | <numberValue> |
| <given> | ::= | "^" |
| <exponents> | ::= | <exponent><exponent> |
| <exponent> | ::= | <numberValue>e |
| <numberValue> | ::= | <digit> <digit><numberValue> |
| <digit> | ::= | 0 1 2 3 4 5 6 7 8 9 |

References

Will Cass, 2020, Bundle of Sticks, Telegram, 20:08, July 24th