

Decimal DecTool

SilMinds DecTool Parser-Coder performs two main functions; Parsing and Coding. It codes from/to densely packed decimal numbers in Hex/ Binary format to/from the triplet format; (sign)(Significand)E(Exponent).

Furthermore, you can choose the rounding mode from five different modes. You can use the tool to encode your 16 digits decimal number to a densely packed number in both Hex/Binary formats. In reverse, the tool can decode any Hex/Binary encoded number to its decimal equivalent.

The Parser tool parses the IBM's IEEE test suite . This test-suite contains test cases that target basic formats specified in the IEEE 754R standard. SilMinds DFP Parser-Coder tool parses decimal64 and decimal128 formats for the following operations:

addition(+)-and subtraction, fused multiply-add(*+), square root(V), multiplication(*) and division(/).

The tool generates three files: cases.silm, desc.silm and result.silm

1- Cases.silm:

The rounding mode and the two operands.

Rounding modes are coded as follows:

000 nearest, ties to even

001 nearest, ties away from zero

010 to positive infinity

011 to negative infinity

100 to zero

101 Round-half-up

110 Round-half-down

2-Desc.silm:

All the test cases that matches the precision and the operation chosen.

3-Result.silm:

The resultant and the flags. The flags are represented in four bits with the following order: inexact invalid overflow underflow

For more information on the test suite and to download the test cases:

<http://www.haifa.il.ibm.com/projects/verification/fpgen/>

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Notice: This tool requires JAVA Runtime Environment to be installed. To install it go to www.java.com