Review Tackle Bench

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Abstract

This document will contain the first review of the tackle bench regarding the topics.

- arithmetic benchmarks
- matrix benchmarks

1 Arithmetic benchmarks

- DSPstone_fixed_point/complex_multiply_fixed
- ~~DSPstone_fixed_point/complex_update_fixed~~
- ~~DSPstone_fixed_point/dot_product_fixed~~
- DSPstone_fixed_point/n_complex_updates_fixed
- DSPstone_fixed_point/n_real_updates_fixed
- ~~DSPstone_fixed_point/real_update_fixed~~
- DSPstone_floating_point/complex_multiply_float
- ~~DSPstone_floating_point/complex_update_float~~
- ~~DSPstone_floating_point/dot_product_float~~
- DSPstone_floating_point/n_complex_updates_float
- DSPstone_floating_point/n_real_updates_float
- ~~DSPstone_floating_point/real_update_float~~
- MISC/ammunition
  - bits_test (7 tests)
  - arithm_test (35 tests)
- MRTC/expint
- MRTC/fac
- MRTC/fibcal

- MRTC/prime
- MRTC/qurt
- ~~MRTC/sqrt~~
- MRTC/st
- MiBench/basicmath_small
  - solvecubic
  - isqrt
  - memcpy
  - rad2deg
  - deg2rad
  - conversions

1.1 DSPstone_fixed_point/complex_multiply_fixed

TO BE DISCUSSED: I would keep this one to test the elementary multiplication of a complex number. Then again it strongly resembles a D2 matrix mult (DSPstone_fixed_point/matrix1_fixed).

1.2 DSPstone_fixed_point/complex_update_fixed

REMOVE: Can be removed as it is part of DSPstone_fixed_point/n_complex_updates_fixed

1.3 DSPstone_fixed_point/dot_product_fixed

REMOVE: Can be removed as it is part of DSPstone_fixed_point/matrix1_fixed

1.4 DSPstone_fixed_point/n_complex_updates_fixed

KEEP: This benchmark can be configured to include DSPstone_fixed_point/complex_update_fixed

1.5 DSPstone_fixed_point/n_real_updates_fixed

KEEP: This benchmark can be configured to include DSPstone_fixed_point/real_update_fixed

1.6 DSPstone_fixed_point/real_update_fixed

REMOVE: Can be removed as it is part of DSPstone_fixed_point/n_real_updates_fixed

1.7 DSPstone_floating_point/complex_multiply_floating

TO BE DISCUSSED: I would keep this one to test the elementary multiplication of a complex number. Then again it strongly resembles a D2 matrix mult (DSPstone_fixed_point/matrix1_fixed).

1.8 DSPstone_floating_point/complex_update_floating

REMOVE: Can be removed as it is part of DSPstone_floating_point/n_complex_updates_floating

1.9 DSPstone_floating_point/dot_product_floating

REMOVE: Can be removed as it is part of DSPstone_floating_point/matrix1_floating

1.10 DSPstone_floating_point/n_complex_updates_floating

KEEP: This benchmark can be configured to include DSPstone_floating_point/complex_update_floating

1.11 DSPstone_floating_point/n_real_update_floating

KEEP: This benchmark can be configured to include DSPstone_floating_point/real_update

1.12 DSPstone_floating_point/real_update_floating

REMOVE: Can be removed as it is part of DSPstone_floating_point/n_real_updates_floating

1.13 MISC/ammunition

KEEP: Integer library addressing overflow. It contains 7 bits (mem) tests and 35 useful arithmetic tests (overflow). It can probably be scaled down but not removed.

1.13.1 bits

KEEP:Unique benchmark on mem actions

1.13.2 arithm

KEEP:Unique benchmark on overflow

1.14 MRTC/expint

KEEP: Unique

1.15 MRTC/fac

KEEP: Unique

1.16 MRTC/fibcal

KEEP: Unique

1.17 MRTC/prime

KEEP:Unique

1.18 MRTC/qurt

KEEP: Unique

1.19 MRTC/sqrt

REMOVE: Code available in MRTC/qurt and MRTC/st

1.20 MRTC/st

KEEP: Unique

1.21 MiBench/basicmath_small

1.21.1 solvecubic

KEEP:Unique

1.21.2 isqrt

KEEP:Unique

1.21.3 memcpy

KEEP: necessary for other benchmarks

1.21.4 rad2deg

KEEP: unique

1.21.5 deg2rad

KEEP: Unique

1.21.6 conversions

KEEP: Unique

2 Matrix benchmarks

- ~~DSPstone_fixed_point/matrix1x3_fixed~~
- DSPstone_fixed_point/matrix1_fixed
- ~~DSPstone_floating_point/matrix1x3_float~~
- DSPstone_floating_point/matrix1_float
- MRTC/countnegative
- MRTC/ludcmp
- MRTC/matmult
- MRTC/minver

2.1 DSPstone_fixed_point/matrix1x3_fixed

REMOVE: Can be removed as it is part of DSPstone_fixed_point/matrix1_fixed

2.2 DSPstone_fixed_point/matrix1_fixed

KEEP: This benchmark can be configured to include DSPstone_fixed_point/matrix1x3_fixed and DSPstone_fixed_point/dot_product_fixed

2.3 DSPstone_floating_point/matrix1x3_float

REMOVE: Can be removed as it is part of DSPstone_float_point/matrix1_float

2.4 DSPstone_floating_point/matrix1_float

KEEP: This benchmark can be configured to include DSPstone_float_point/matrix1x3_float and DSPstone_float_point/dot_product_float

2.5 MRTC/countnegative

KEEP: Unique function and matrix is 2 dimensional array

2.6 MRTC/ludcmp

KEEP: Unique function and matrix is 2 dimensional array

2.7 MRTC/matmult

KEEP: Resembles DSPstone_fixed_point/matrix1_fixed BUT array is 2 dimensional in this case

2.8 MRTC/minver

KEEP: Floating point matrix inversion