Univerza v Mariboru

Fakulteta za elektrotehniko,
računalništvo in informatiko

Naloga 2

Predmet: Paralelno in porazdeljeno računanje

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Kazalo

Zaslonski posnetki

Programska oprema in ostale podrobnosti

Procesor

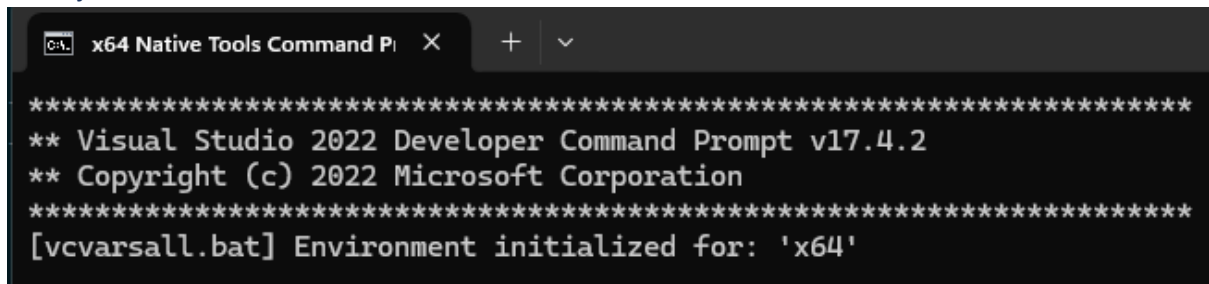| Processor	Intel(R) Core(TM) i5-8365U CPU @ 1.60GHz, 1896 Mhz, 4 Core(s), 8 Logical Processor(s)

Zaslonski posnetek 1: Processor v oknu System information

Pomnilnik

Installed Physical Memory (RAM)   16.0 GB

Zaslonski posnetek 2: RAM v oknu System information

Prevajalnik

```
x64 Native Tools Command P    X    +    ∨

*********************************************************************
** Visual Studio 2022 Developer Command Prompt v17.4.2
** Copyright (c) 2022 Microsoft Corporation
*********************************************************************
[vcvarsall.bat] Environment initialized for: 'x64'
```

Zaslonski posnetek 3: Ukazna vrstica MSVC x64 Microsoft

MSVC

Komanda, da sem prevedel iz .cpp v .exe

```
E:\APK\RIT_UNI\Semester_5\Vaje_PPR\old_jDE_algo>cl /EHsc /O2 Algoritem_jDE.cpp
```

Zaslonski posnetek 4: Ukaz, da se je ustvarila .exe datoteka

Zastavice:

- Ehsc: zastavica omogoča standardno obravnavanje izjem,
- O2: nastavi možnosti, ki v večini primerov ustvarijo najhitrejšo kodo. Možnost /O2 je privzeta za gradnje izdaje.Rezultati

Rezultati

Število niti

1 nit


```
Duration for all 50 seeds using 1 threads:105981
Seed: 1, nFes: 1000374, energy: -3.50219, duration: 2266
Seed: 2, nFes: 1000102, energy: -4.15343, duration: 1946
Seed: 3, nFes: 1000311, energy: -4.04859, duration: 1903
Seed: 4, nFes: 1000143, energy: -4.01799, duration: 1905
Seed: 5, nFes: 1000322, energy: -3.55912, duration: 1949
Seed: 6, nFes: 1000048, energy: -3.86255, duration: 1980
Seed: 7, nFes: 1000374, energy: -4.36297, duration: 1986
Seed: 8, nFes: 1000242, energy: -4.00881, duration: 2015
Seed: 9, nFes: 1000087, energy: -3.70715, duration: 2016
Seed: 10, nFes: 1000163, energy: -3.69396, duration: 1985
Seed: 11, nFes: 1000229, energy: -3.73202, duration: 1995
Seed: 12, nFes: 1000314, energy: -4.22409, duration: 2049
Seed: 13, nFes: 1000240, energy: -3.97236, duration: 1992
Seed: 14, nFes: 1000027, energy: -3.81521, duration: 2039
Seed: 15, nFes: 1000086, energy: -4.44432, duration: 2025
Seed: 16, nFes: 1000155, energy: -3.75601, duration: 2071
Seed: 17, nFes: 1000365, energy: -4.03001, duration: 2078
Seed: 18, nFes: 1000168, energy: -4.14466, duration: 2104
Seed: 19, nFes: 1000407, energy: -3.78111, duration: 2055
Seed: 20, nFes: 1000039, energy: -3.54375, duration: 2092
Seed: 21, nFes: 1000439, energy: -3.60615, duration: 2130
Seed: 22, nFes: 1000209, energy: -4.20575, duration: 2096
Seed: 23, nFes: 1000162, energy: -3.95363, duration: 2115
Seed: 24, nFes: 1000332, energy: -4.10959, duration: 2137
Seed: 25, nFes: 1000090, energy: -3.71688, duration: 2135
Seed: 26, nFes: 1000200, energy: -4.40445, duration: 2187
Seed: 27, nFes: 1000371, energy: -4.05494, duration: 2141
Seed: 28, nFes: 1000226, energy: -4.03029, duration: 2153
Seed: 29, nFes: 1000189, energy: -4.06189, duration: 2212
Seed: 30, nFes: 1000018, energy: -4.64684, duration: 2152
Seed: 31, nFes: 1000091, energy: -4.31087, duration: 2207
Seed: 32, nFes: 1000105, energy: -3.82334, duration: 2142
Seed: 33, nFes: 1000102, energy: -4.10244, duration: 2181
Seed: 34, nFes: 1000392, energy: -3.91319, duration: 2210
Seed: 35, nFes: 1000010, energy: -4.60797, duration: 2173
Seed: 36, nFes: 1000129, energy: -3.68286, duration: 2207
Seed: 37, nFes: 1000153, energy: -4.12438, duration: 2176
Seed: 38, nFes: 1000431, energy: -3.9971, duration: 2155
Seed: 39, nFes: 1000288, energy: -3.24792, duration: 2190
Seed: 40, nFes: 1000042, energy: -3.17732, duration: 2177
Seed: 41, nFes: 1000391, energy: -4.00722, duration: 2235
Seed: 42, nFes: 1000341, energy: -3.81655, duration: 2210
Seed: 43, nFes: 1000356, energy: -4.02482, duration: 2198
Seed: 44, nFes: 1000379, energy: -4.16756, duration: 2233
Seed: 45, nFes: 1000195, energy: -3.7158, duration: 2185
Seed: 46, nFes: 1000381, energy: -4.14314, duration: 2181
Seed: 47, nFes: 1000237, energy: -4.03191, duration: 2243
Seed: 48, nFes: 1000173, energy: -4.07291, duration: 2228
Seed: 49, nFes: 1000097, energy: -3.62075, duration: 2245
Seed: 50, nFes: 1000057, energy: -4.2583, duration: 2261
```

Zaslonski posnetek 5: Izpis vseh izračunov, časov in skupnega časa za 1 nit

2 niti


```
Duration for all 50 seeds using 2 threads:65710
Seed: 1, nFes: 1000087, energy: -4.33917, duration: 2480
Seed: 2, nFes: 1000266, energy: -4.02468, duration: 2530
Seed: 3, nFes: 1000151, energy: -4.23137, duration: 2284
Seed: 4, nFes: 1000133, energy: -4.36706, duration: 2297
Seed: 5, nFes: 1000297, energy: -4.13761, duration: 2138
Seed: 6, nFes: 1000136, energy: -4.48148, duration: 2164
Seed: 7, nFes: 1000059, energy: -4.10023, duration: 2182
Seed: 8, nFes: 1000177, energy: -4.26657, duration: 2146
Seed: 9, nFes: 1000049, energy: -4.42208, duration: 2240
Seed: 10, nFes: 1000059, energy: -4.13188, duration: 2278
Seed: 11, nFes: 1000384, energy: -4.4164, duration: 2287
Seed: 12, nFes: 1000307, energy: -4.03406, duration: 2316
Seed: 13, nFes: 1000004, energy: -4.42023, duration: 2276
Seed: 14, nFes: 1000343, energy: -4.64185, duration: 2275
Seed: 15, nFes: 1000038, energy: -4.44587, duration: 2317
Seed: 16, nFes: 1000135, energy: -4.13972, duration: 2307
Seed: 17, nFes: 1000023, energy: -4.29583, duration: 2341
Seed: 18, nFes: 1000153, energy: -4.09807, duration: 2360
Seed: 19, nFes: 1000162, energy: -4.21137, duration: 2457
Seed: 20, nFes: 1000188, energy: -4.27343, duration: 2443
Seed: 21, nFes: 1000254, energy: -4.311, duration: 2410
Seed: 22, nFes: 1000059, energy: -4.0338, duration: 2445
Seed: 23, nFes: 1000148, energy: -4.09707, duration: 2560
Seed: 24, nFes: 1000195, energy: -4.5742, duration: 2669
Seed: 25, nFes: 1000402, energy: -4.14612, duration: 2676
Seed: 26, nFes: 1000224, energy: -4.17687, duration: 2718
Seed: 27, nFes: 1000039, energy: -4.37823, duration: 2685
Seed: 28, nFes: 1000258, energy: -4.33309, duration: 2712
Seed: 29, nFes: 1000099, energy: -4.40869, duration: 2681
Seed: 30, nFes: 1000255, energy: -4.06626, duration: 2699
Seed: 31, nFes: 1000034, energy: -3.68362, duration: 2727
Seed: 32, nFes: 1000201, energy: -4.04706, duration: 2685
Seed: 33, nFes: 1000001, energy: -4.44763, duration: 2676
Seed: 34, nFes: 1000154, energy: -4.18442, duration: 2722
Seed: 35, nFes: 1000225, energy: -4.35168, duration: 2667
Seed: 36, nFes: 1000025, energy: -4.50491, duration: 2694
Seed: 37, nFes: 1000293, energy: -4.25598, duration: 2714
Seed: 38, nFes: 1000144, energy: -4.12073, duration: 2744
Seed: 39, nFes: 1000078, energy: -4.36025, duration: 2671
Seed: 40, nFes: 1000216, energy: -4.15143, duration: 2755
Seed: 41, nFes: 1000076, energy: -4.23328, duration: 2705
Seed: 42, nFes: 1000168, energy: -4.35765, duration: 2735
Seed: 43, nFes: 1000184, energy: -4.64189, duration: 2747
Seed: 44, nFes: 1000132, energy: -3.86231, duration: 2759
Seed: 45, nFes: 1000300, energy: -4.07448, duration: 2769
Seed: 46, nFes: 1000284, energy: -4.65153, duration: 2758
Seed: 47, nFes: 1000091, energy: -4.24144, duration: 2779
Seed: 48, nFes: 1000104, energy: -4.14451, duration: 2853
Seed: 49, nFes: 1000086, energy: -4.30939, duration: 2800
Seed: 50, nFes: 1000182, energy: -4.58203, duration: 2828
Seed: 51, nFes: 1000347, energy: -4.19658, duration: 2426
```

Zaslonski posnetek 6: Izpis vseh izračunov, časov in skupnega časa za 2 niti

4 niti


```
Duration for all 50 seeds using 4 threads:51536
Seed: 1, nFes: 1000094, energy: -4.0873, duration: 3386
Seed: 2, nFes: 1000019, energy: -4.37955, duration: 3483
Seed: 3, nFes: 1000164, energy: -4.52433, duration: 3509
Seed: 4, nFes: 1000221, energy: -3.97652, duration: 3558
Seed: 5, nFes: 1000244, energy: -4.12754, duration: 2967
Seed: 6, nFes: 1000292, energy: -4.61203, duration: 2894
Seed: 7, nFes: 1000275, energy: -4.27892, duration: 2929
Seed: 8, nFes: 1000022, energy: -4.2701, duration: 2946
Seed: 9, nFes: 1000111, energy: -4.493, duration: 2971
Seed: 10, nFes: 1000257, energy: -4.03028, duration: 2999
Seed: 11, nFes: 1000170, energy: -4.35781, duration: 3018
Seed: 12, nFes: 1000090, energy: -4.40117, duration: 3031
Seed: 13, nFes: 1000050, energy: -4.47665, duration: 2979
Seed: 14, nFes: 1000205, energy: -4.20658, duration: 3054
Seed: 15, nFes: 1000007, energy: -4.56983, duration: 3118
Seed: 16, nFes: 1000124, energy: -4.3582, duration: 3078
Seed: 17, nFes: 1000328, energy: -3.83529, duration: 3412
Seed: 18, nFes: 1000115, energy: -4.30675, duration: 3512
Seed: 19, nFes: 1000279, energy: -4.63211, duration: 3452
Seed: 20, nFes: 1000229, energy: -4.58418, duration: 3516
Seed: 21, nFes: 1000128, energy: -4.12285, duration: 4185
Seed: 22, nFes: 1000222, energy: -4.64189, duration: 4146
Seed: 23, nFes: 1000142, energy: -4.09849, duration: 4100
Seed: 24, nFes: 1000230, energy: -4.34957, duration: 4166
Seed: 25, nFes: 1000010, energy: -4.42041, duration: 4240
Seed: 26, nFes: 1000231, energy: -4.56412, duration: 4207
Seed: 27, nFes: 1000101, energy: -4.29718, duration: 4122
Seed: 28, nFes: 1000264, energy: -4.61299, duration: 4148
Seed: 29, nFes: 1000041, energy: -4.32844, duration: 4036
Seed: 30, nFes: 1000041, energy: -4.56885, duration: 4139
Seed: 31, nFes: 1000229, energy: -4.30068, duration: 4165
Seed: 32, nFes: 1000232, energy: -4.38437, duration: 4104
Seed: 33, nFes: 1000200, energy: -4.26501, duration: 4152
Seed: 34, nFes: 1000145, energy: -4.21371, duration: 4346
Seed: 35, nFes: 1000176, energy: -4.33145, duration: 4281
Seed: 36, nFes: 1000181, energy: -4.4977, duration: 4236
Seed: 37, nFes: 1000374, energy: -4.43616, duration: 4026
Seed: 38, nFes: 1000092, energy: -4.16212, duration: 4278
Seed: 39, nFes: 1000082, energy: -4.30118, duration: 4086
Seed: 40, nFes: 1000190, energy: -4.61322, duration: 4135
Seed: 41, nFes: 1000348, energy: -4.52065, duration: 4018
Seed: 42, nFes: 1000067, energy: -4.64188, duration: 4182
Seed: 43, nFes: 1000327, energy: -4.27134, duration: 4094
Seed: 44, nFes: 1000189, energy: -4.52774, duration: 4233
Seed: 45, nFes: 1000009, energy: -4.2435, duration: 4074
Seed: 46, nFes: 1000297, energy: -3.95224, duration: 4009
Seed: 47, nFes: 1000085, energy: -4.2957, duration: 4212
Seed: 48, nFes: 1000120, energy: -4.42227, duration: 4156
Seed: 49, nFes: 1000036, energy: -4.14393, duration: 4058
Seed: 50, nFes: 1000212, energy: -4.30119, duration: 4140
Seed: 51, nFes: 1000293, energy: -4.65152, duration: 4112
Seed: 52, nFes: 1000240, energy: -4.53375, duration: 4080
Seed: 53, nFes: 1000301, energy: -4.29965, duration: 2669
```

Zaslonski posnetek 7: Izpis vseh izračunov, časov in skupnega časa za 4 niti
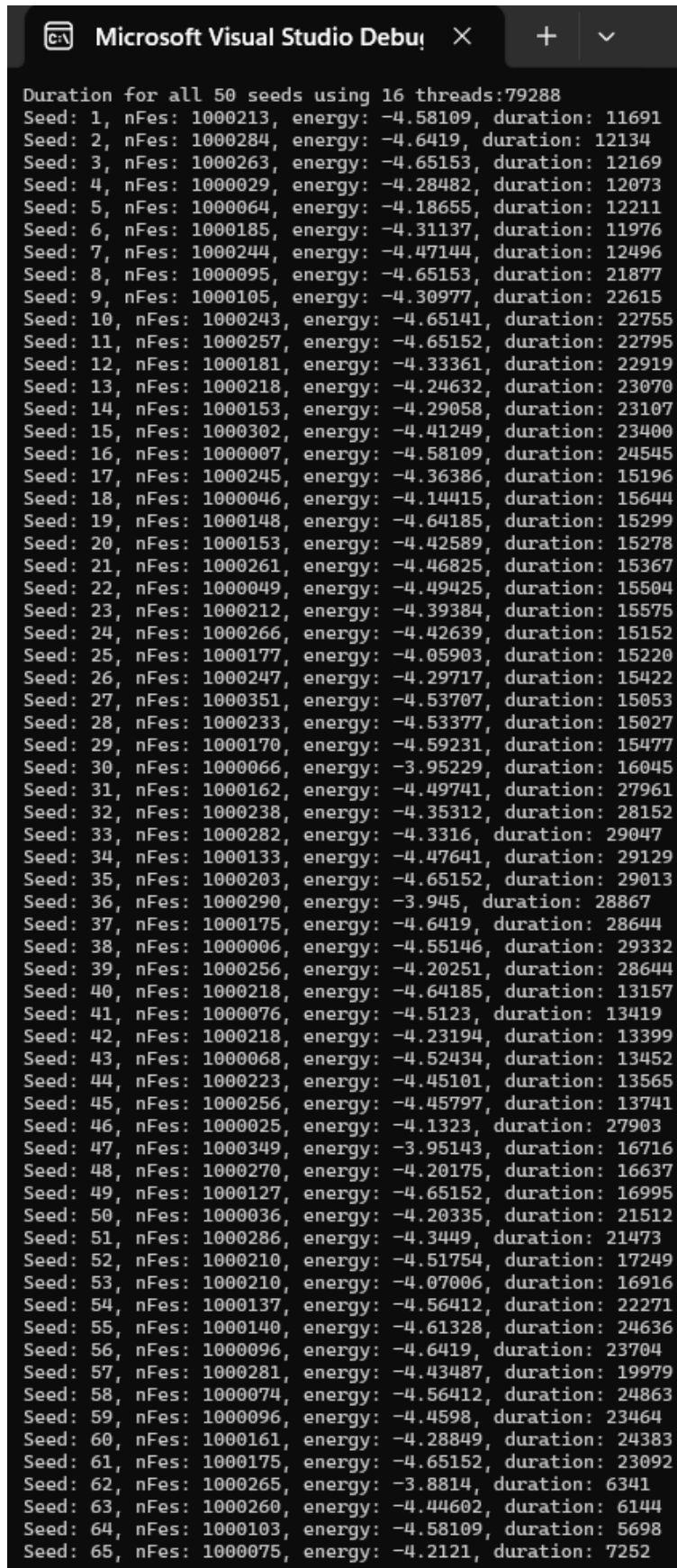
8 niti

```
Duration for all 50 seeds using 8 threads:50402
Seed: 1, nFes: 1000143, energy: -4.38686, duration: 5189
Seed: 2, nFes: 1000022, energy: -4.47144, duration: 5219
Seed: 3, nFes: 1000116, energy: -4.64177, duration: 5244
Seed: 4, nFes: 1000217, energy: -4.57421, duration: 5242
Seed: 5, nFes: 1000014, energy: -4.28317, duration: 5499
Seed: 6, nFes: 1000070, energy: -4.65152, duration: 5511
Seed: 7, nFes: 1000016, energy: -4.26632, duration: 5560
Seed: 8, nFes: 1000047, energy: -4.65152, duration: 5592
Seed: 9, nFes: 1000340, energy: -4.467, duration: 5295
Seed: 10, nFes: 1000015, energy: -4.18309, duration: 5269
Seed: 11, nFes: 1000078, energy: -4.26655, duration: 5299
Seed: 12, nFes: 1000243, energy: -4.65153, duration: 5296
Seed: 13, nFes: 1000069, energy: -4.54924, duration: 5293
Seed: 14, nFes: 1000303, energy: -4.13223, duration: 5356
Seed: 15, nFes: 1000011, energy: -4.2667, duration: 5368
Seed: 16, nFes: 1000246, energy: -4.64185, duration: 5294
Seed: 17, nFes: 1000011, energy: -4.65153, duration: 6463
Seed: 18, nFes: 1000190, energy: -4.15366, duration: 6507
Seed: 19, nFes: 1000176, energy: -4.37928, duration: 6524
Seed: 20, nFes: 1000189, energy: -4.10802, duration: 6624
Seed: 21, nFes: 1000186, energy: -4.35469, duration: 6694
Seed: 22, nFes: 1000279, energy: -4.34353, duration: 6697
Seed: 23, nFes: 1000237, energy: -4.07122, duration: 6785
Seed: 24, nFes: 1000018, energy: -4.00451, duration: 6800
Seed: 25, nFes: 1000212, energy: -4.53377, duration: 7504
Seed: 26, nFes: 1000270, energy: -4.12966, duration: 7545
Seed: 27, nFes: 1000242, energy: -4.34914, duration: 7561
Seed: 28, nFes: 1000159, energy: -4.37843, duration: 7755
Seed: 29, nFes: 1000260, energy: -4.65146, duration: 7555
Seed: 30, nFes: 1000137, energy: -4.29856, duration: 7856
Seed: 31, nFes: 1000163, energy: -4.02532, duration: 7872
Seed: 32, nFes: 1000052, energy: -4.57174, duration: 7878
Seed: 33, nFes: 1000242, energy: -4.2277, duration: 7444
Seed: 34, nFes: 1000140, energy: -4.51755, duration: 7468
Seed: 35, nFes: 1000035, energy: -4.39875, duration: 7515
Seed: 36, nFes: 1000139, energy: -4.16422, duration: 7693
Seed: 37, nFes: 1000235, energy: -4.37896, duration: 7521
Seed: 38, nFes: 1000177, energy: -4.70973, duration: 7738
Seed: 39, nFes: 1000231, energy: -4.56249, duration: 7763
Seed: 40, nFes: 1000178, energy: -4.52585, duration: 7780
Seed: 41, nFes: 1000344, energy: -4.48775, duration: 7671
Seed: 42, nFes: 1000252, energy: -4.65153, duration: 7541
Seed: 43, nFes: 1000284, energy: -4.58808, duration: 7623
Seed: 44, nFes: 1000200, energy: -4.64185, duration: 7630
Seed: 45, nFes: 1000321, energy: -4.2607, duration: 7769
Seed: 46, nFes: 1000211, energy: -4.58808, duration: 7778
Seed: 47, nFes: 1000007, energy: -4.07649, duration: 7695
Seed: 48, nFes: 1000095, energy: -4.65152, duration: 7773
Seed: 49, nFes: 1000122, energy: -4.46806, duration: 7548
Seed: 50, nFes: 1000046, energy: -4.14002, duration: 7471
Seed: 51, nFes: 1000361, energy: -4.38145, duration: 7657
Seed: 52, nFes: 1000072, energy: -4.1865, duration: 7485
Seed: 53, nFes: 1000041, energy: -4.30703, duration: 7676
Seed: 54, nFes: 1000193, energy: -4.37945, duration: 7325
Seed: 55, nFes: 1000372, energy: -4.24224, duration: 7504
Seed: 56, nFes: 1000246, energy: -4.58586, duration: 7423
Seed: 57, nFes: 1000066, energy: -4.1906, duration: 3245
```

Zaslonski posnetek 8: Izpis vseh izračunov, časov in skupnega časa za 8 niti

16 niti

```
Duration for all 50 seeds using 16 threads:79288
Seed: 1, nFes: 1000213, energy: -4.58109, duration: 11691
Seed: 2, nFes: 1000284, energy: -4.6419, duration: 12134
Seed: 3, nFes: 1000263, energy: -4.65153, duration: 12169
Seed: 4, nFes: 1000029, energy: -4.28482, duration: 12073
Seed: 5, nFes: 1000064, energy: -4.18655, duration: 12211
Seed: 6, nFes: 1000185, energy: -4.31137, duration: 11976
Seed: 7, nFes: 1000244, energy: -4.47144, duration: 12496
Seed: 8, nFes: 1000095, energy: -4.65153, duration: 21877
Seed: 9, nFes: 1000105, energy: -4.30977, duration: 22615
Seed: 10, nFes: 1000243, energy: -4.65141, duration: 22755
Seed: 11, nFes: 1000257, energy: -4.65152, duration: 22795
Seed: 12, nFes: 1000181, energy: -4.33361, duration: 22919
Seed: 13, nFes: 1000218, energy: -4.24632, duration: 23070
Seed: 14, nFes: 1000153, energy: -4.29058, duration: 23107
Seed: 15, nFes: 1000302, energy: -4.41249, duration: 23400
Seed: 16, nFes: 1000007, energy: -4.58109, duration: 24545
Seed: 17, nFes: 1000245, energy: -4.36386, duration: 15196
Seed: 18, nFes: 1000046, energy: -4.14415, duration: 15644
Seed: 19, nFes: 1000148, energy: -4.64185, duration: 15299
Seed: 20, nFes: 1000153, energy: -4.42589, duration: 15278
Seed: 21, nFes: 1000261, energy: -4.46825, duration: 15367
Seed: 22, nFes: 1000049, energy: -4.49425, duration: 15504
Seed: 23, nFes: 1000212, energy: -4.39384, duration: 15575
Seed: 24, nFes: 1000266, energy: -4.42639, duration: 15152
Seed: 25, nFes: 1000177, energy: -4.05903, duration: 15220
Seed: 26, nFes: 1000247, energy: -4.29717, duration: 15422
Seed: 27, nFes: 1000351, energy: -4.53707, duration: 15053
Seed: 28, nFes: 1000233, energy: -4.53377, duration: 15027
Seed: 29, nFes: 1000170, energy: -4.59231, duration: 15477
Seed: 30, nFes: 1000066, energy: -3.95229, duration: 16045
Seed: 31, nFes: 1000162, energy: -4.49741, duration: 27961
Seed: 32, nFes: 1000238, energy: -4.35312, duration: 28152
Seed: 33, nFes: 1000282, energy: -4.3316, duration: 29047
Seed: 34, nFes: 1000133, energy: -4.47641, duration: 29129
Seed: 35, nFes: 1000203, energy: -4.65152, duration: 29013
Seed: 36, nFes: 1000290, energy: -3.945, duration: 28867
Seed: 37, nFes: 1000175, energy: -4.6419, duration: 28644
Seed: 38, nFes: 1000006, energy: -4.55146, duration: 29332
Seed: 39, nFes: 1000256, energy: -4.20251, duration: 28644
Seed: 40, nFes: 1000218, energy: -4.64185, duration: 13157
Seed: 41, nFes: 1000076, energy: -4.5123, duration: 13419
Seed: 42, nFes: 1000218, energy: -4.23194, duration: 13399
Seed: 43, nFes: 1000068, energy: -4.52434, duration: 13452
Seed: 44, nFes: 1000223, energy: -4.45101, duration: 13565
Seed: 45, nFes: 1000256, energy: -4.45797, duration: 13741
Seed: 46, nFes: 1000025, energy: -4.1323, duration: 27903
Seed: 47, nFes: 1000349, energy: -3.95143, duration: 16716
Seed: 48, nFes: 1000270, energy: -4.20175, duration: 16637
Seed: 49, nFes: 1000127, energy: -4.65152, duration: 16995
Seed: 50, nFes: 1000036, energy: -4.20335, duration: 21512
Seed: 51, nFes: 1000286, energy: -4.3449, duration: 21473
Seed: 52, nFes: 1000210, energy: -4.51754, duration: 17249
Seed: 53, nFes: 1000210, energy: -4.07006, duration: 16916
Seed: 54, nFes: 1000137, energy: -4.56412, duration: 22271
Seed: 55, nFes: 1000140, energy: -4.61328, duration: 24636
Seed: 56, nFes: 1000096, energy: -4.6419, duration: 23704
Seed: 57, nFes: 1000281, energy: -4.43487, duration: 19979
Seed: 58, nFes: 1000074, energy: -4.56412, duration: 24863
Seed: 59, nFes: 1000096, energy: -4.4598, duration: 23464
Seed: 60, nFes: 1000161, energy: -4.28849, duration: 24383
Seed: 61, nFes: 1000175, energy: -4.65152, duration: 23092
Seed: 62, nFes: 1000265, energy: -3.8814, duration: 6341
Seed: 63, nFes: 1000260, energy: -4.44602, duration: 6144
Seed: 64, nFes: 1000103, energy: -4.58109, duration: 5698
Seed: 65, nFes: 1000075, energy: -4.2121, duration: 7252
```

Zaslonski posnetek 9: Izpis vseh izračunov, časov in skupnega časa za 16 niti

20 niti na drugem računalniku

```
Duration for all 50 seeds, starting from 1 to 50 using 20 threads: 8867 ms
```

Zaslonski posnetek 10: Čas trajanja pri 20 nitih na računalniku od kolega

Specifikacije tega računalika:

- Procesor Ryzen R7 6800hs 8 core, 16 thread
- RAM: 40gb, 4800mhz

Opazovanja

Zaradi računalnika oz. bolj specifično procesorja se je hitrost izboljšala, ko sem prešel iz ene na dve niti in iz dve na štiri niti in to precej drastično. Iz prehoda na dve niti z ene, se je hitrost izboljšala za skoraj 2x. Ko pa sem šel iz dveh na štiri niti pa se je hitrost izboljšala za 1,2x. Za tem, torej pri prehodu na osem niti iz predhodnih štiri, se čas izboljša le za par sekund. Torej je pohitritev skoraj neopazna. V primeru šestnajstih niti se hitrost celo poslabša zaradi preklopa konteksta pri nitih. Pri osem niti se algoritem ni poslabšal, saj ima procesor 8 niti za katere je še optimiziran, za 16 pa zelo očitno ni.

Povprečja

Povprečna hitrost: (105981 + 65710 + 51536 + 50402 + 79288) / 5 = 70583.4 ms

Minimalni čas: 50402ms

Maksimalni čas: 105981ms

Standardni odklon: 20603.9ms

Hitrost celotnega programa: 352917ms

Nfes: 1000250