

Homework 1

Kulin Shah (201501234)
Compilers

11 August, 2018

3) Different execution timing results of all files are given in the table 1. However, due to lack of space, *Challenge* part is given in different table 2.

| Files | gcc | | | | icc | | | | llc | | | |
|-------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | -O0 | -O1 | -O2 | -O3 | -O0 | -O1 | -O2 | -O3 | -O0 | -O1 | -O2 | -O3 |
| distbench.c | 2.4832 | 2.3011 | 2.3207 | 2.0108 | 2.6907 | 2.0519 | 2.3207 | 2.1207 | 2.3205 | 2.0776 | 2.3205 | 2.2115 |
| fftbench.c | 1.1209 | 0.8027 | 0.6203 | 0.4305 | 0.8317 | 0.5214 | 0.3216 | 0.2714 | 0.6412 | 0.5734 | 0.5094 | 0.5147 |
| linbench.c | 1.3209 | 0.9217 | 0.7127 | 0.7126 | 0.9135 | 0.8137 | 0.8147 | 0.7956 | 0.3374 | 0.3316 | 0.3205 | 0.3213 |
| mat1bench.c | 1.9216 | 1.6208 | 1.5260 | 1.3207 | 0.9206 | 0.8206 | 0.7270 | 0.7262 | 0.8031 | 0.7203 | 0.6235 | 0.5235 |
| almabench.c | 10.027 | 8.1553 | 6.1758 | 6.1909 | 6.1263 | 6.0207 | 5.0218 | 5.0206 | 12.723 | 11.157 | 11.170 | 11.029 |
| evobench.c | 1.9380 | 1.8258 | 1.7206 | 1.6247 | 1.4261 | 1.3235 | 1.3203 | 1.3276 | 2.4271 | 2.4234 | 2.3216 | 2.3219 |
| huffbench.c | 40.025 | 10.227 | 8.721 | 9.0234 | 43.021 | 12.024 | 13.021 | 12.323 | 37.461 | 35.646 | 34.321 | 34.523 |
| lpbench.c | 11.453 | 8.6428 | 9.6242 | 4.6564 | 11.182 | 8.6815 | 7.4441 | 7.6571 | 10.246 | 8.3656 | 7.5204 | 7.6203 |

Table 1: Time taken for execution for different files with different flags

| File | Best (Compiler, Optimization Flag) combination |
|-------------|--|
| distbench.c | (gcc, O3) |
| fftbench.c | (icc, O3) |
| linbench.c | (llc, O2) |
| mat1bench.c | (llc, O3) |
| almabench.c | (icc, O3) |
| evobench.c | (icc, O2) |
| huffbench.c | (gcc, O2) |
| lpbench.c | (gcc, O3) |

Table 2: Best combination of compiler and optimization flag for different files evaluated by performance