Homework 11

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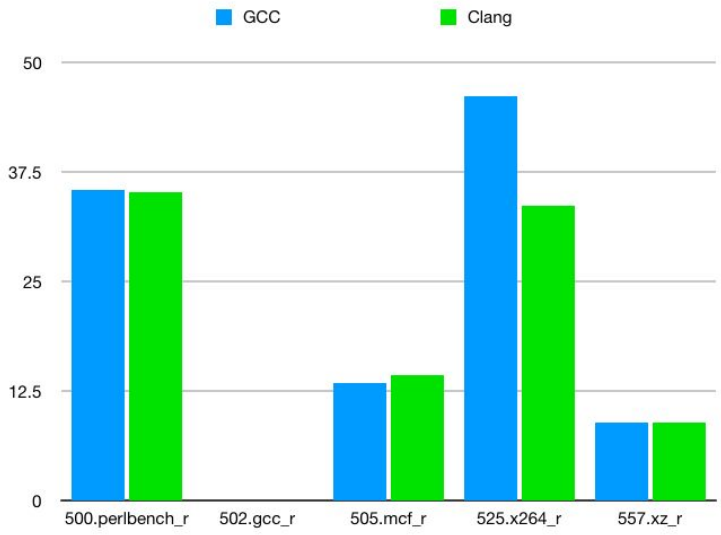
The Graph of GCC vs. clang-

Figure 1

GCC vs Clang

GCC	Clang
35.5	35.2
0.0173	0.0170
13.5	14.3
46.1	33.7
8.92	8.91



Graph for the Percentage of Execution Times consumed for the routines whose percentage is greater than 5-

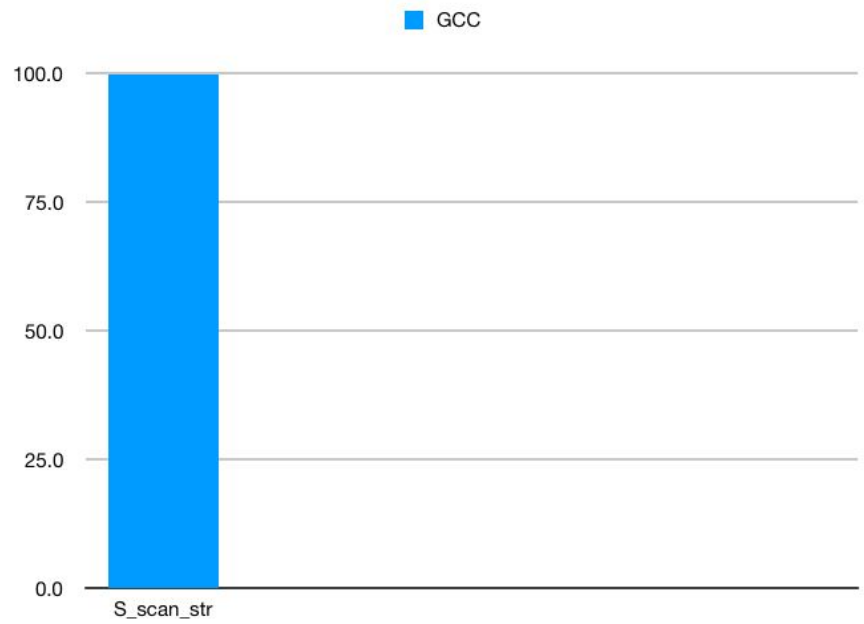
GCC-

500.perl_bench_r

(only one function with percentage greater than 5 per cent)

500.perlbench_r

GCC
100.0

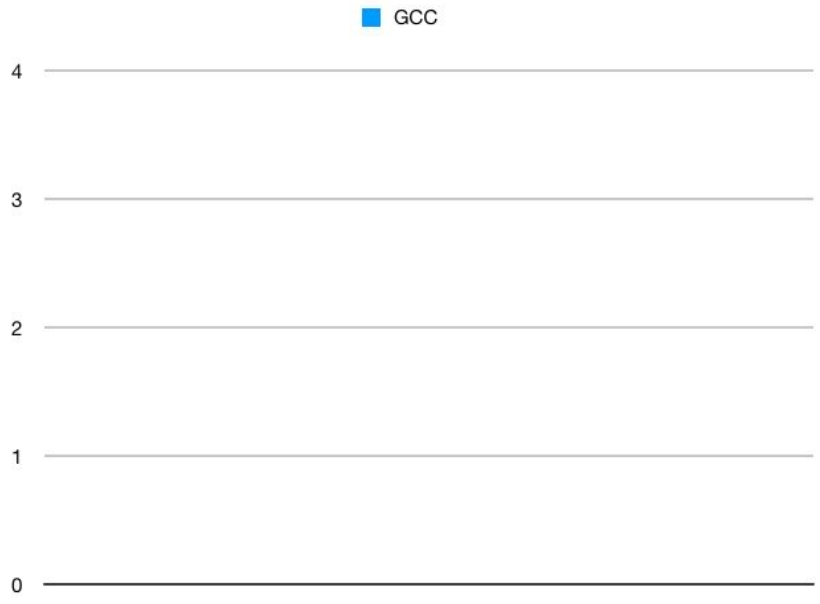


2. 502.gcc_r

(no function with percentage greater than 5 per cent)

502.gcc_r

GCC

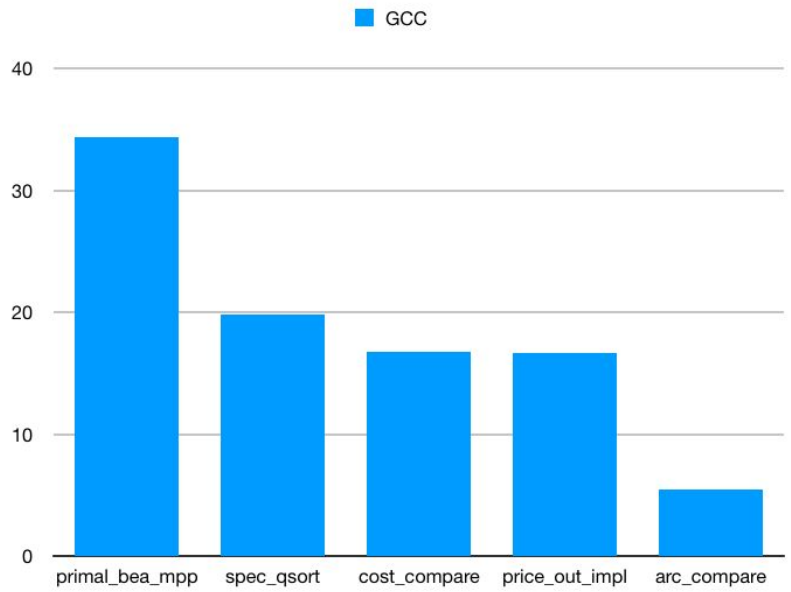


3. 505.mcf_r

(5 functions with percentage greater than 5 per cent)

505.mcf_r

GCC
34.36
19.85
16.80
16.64
5.42

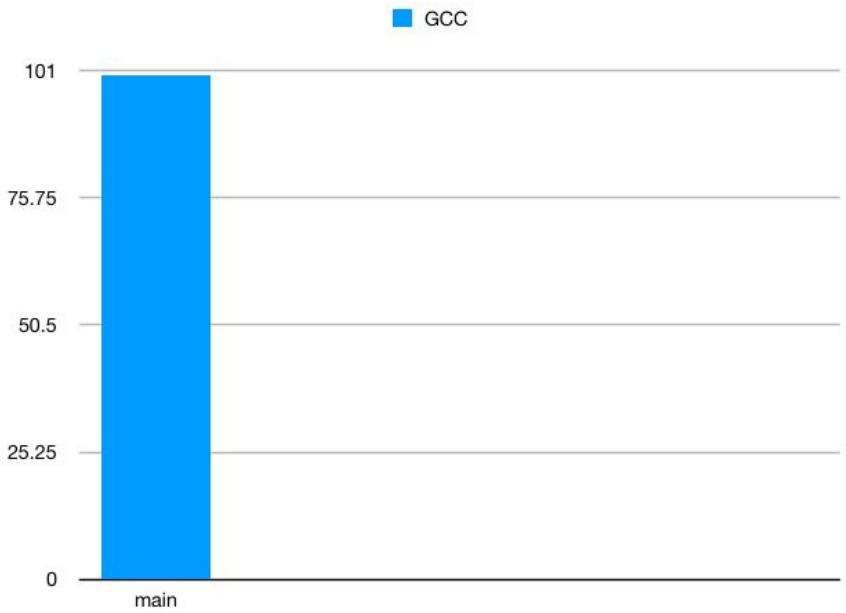


4. 525.x264_r

(1 function with percentage greater than 5 per cent)

525.x264_r

GCC
100.03

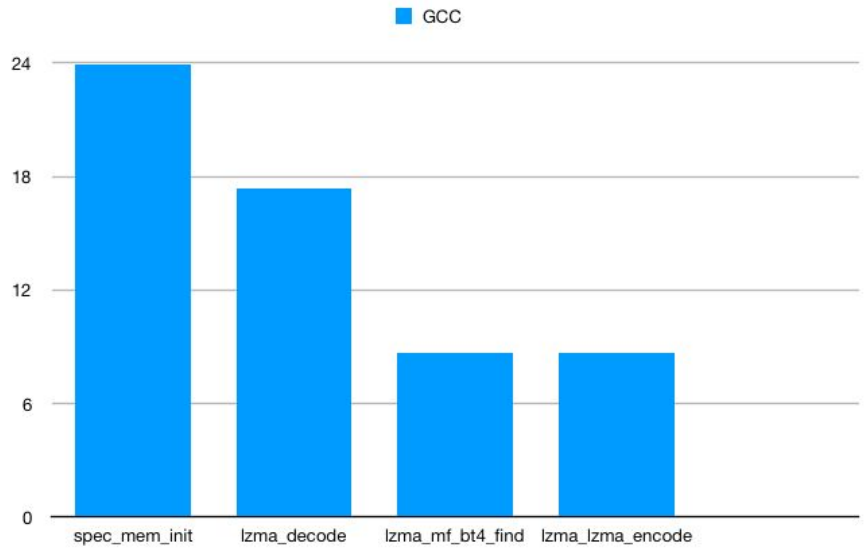


5. 557.xz_r

(4 functions with percentage greater than 5 per cent)

557.xz_r

GCC
23.91
17.39
8.70
8.70



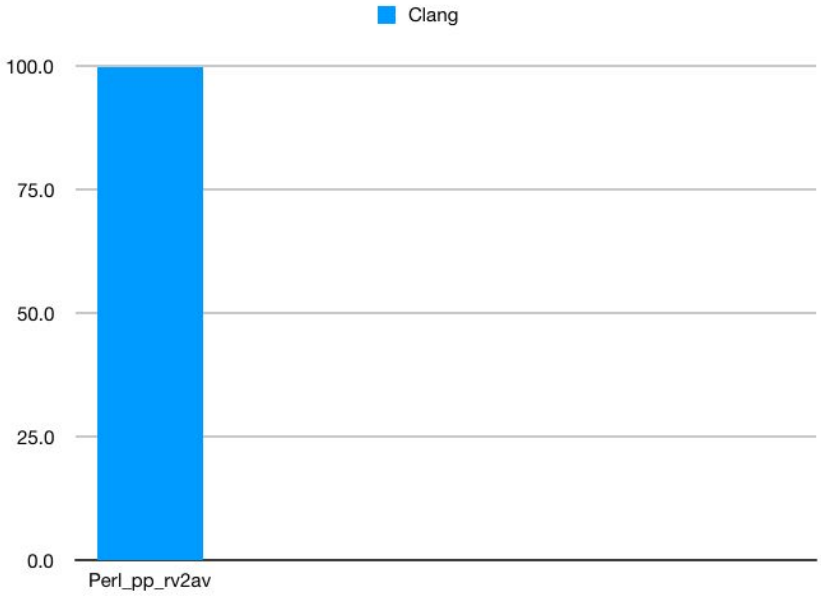
Clang-

1. **500.perl_bench_r**

(only one function with percentage greater than 5 per cent)

500.perlbench_r

Clang
100.0



2. 502.gcc_r

(no function with percentage greater than 5 per cent)

502.gcc_r

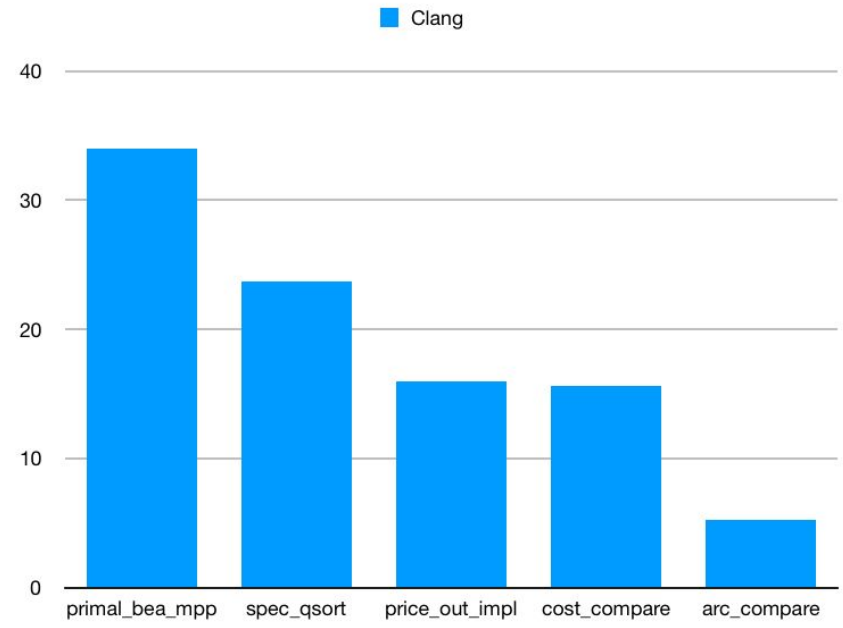
Clang

3. 505.mcf_r

(5 functions with percentage greater than 5 per cent)

505.mcf_r

Clang
33.98
23.70
15.95
15.65
5.22

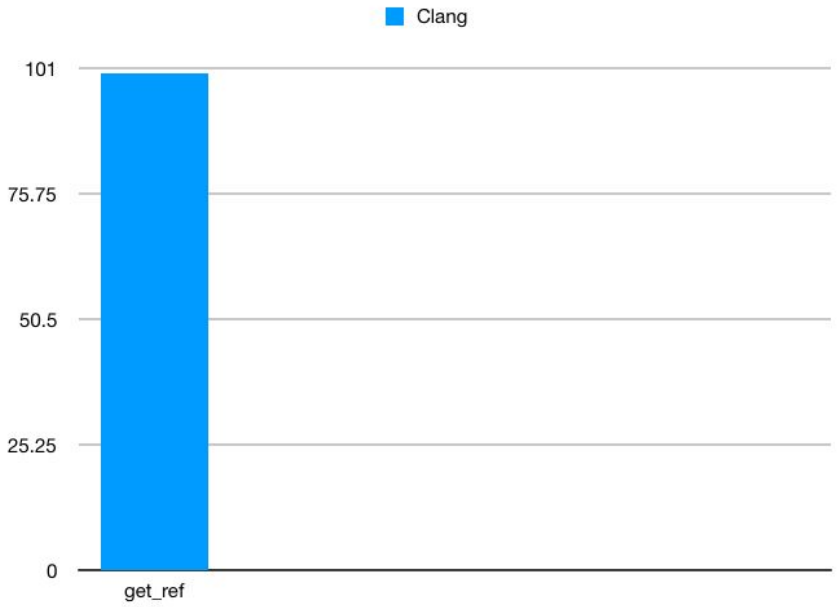


4. 525.x264_r

(1 function with percentage greater than 5 per cent)

525.x264_r

Clang
100.02

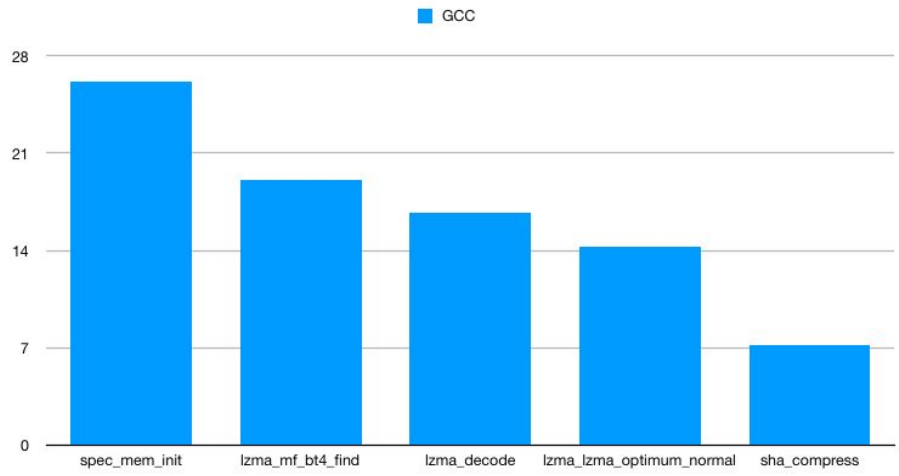


5. 557.xz_r

(5 functions with percentage greater than 5 per cent)

557.xz_r

GCC
26.19
19.05
16.67
14.29
7.14



Interpretation:

In *Figure 1,* we have presented the information of the execution times taken by all the C benchmarks of intrate test-suite for the gcc and clang compilers (x-axis) before performing the optimization. All the benchmarks take lesser execution time in case of clang compilers barring 525.x264_r where gcc compilers are a little faster.

Post optimization, we have plotted bar graphs between the identified routines (x-axis) and the percentage of execution time (y-axis) for every C benchmark of the intrate test-suite. We observe that 502.gcc_r does not yield any functions with a percentage greater than 5 percent in both the compilers. **O3 optimisation does not prove to be helpful in clang compilers while improves performance in gcc.**

After observing the results, we conclude that Clang is faster than GCC.