```
output_string ()

FREQ:10000
<bb 2>:
__printf_chk (1, "%s", buffer_3(D));
write_to_file.30_1 = write_to_file;
if (write_to_file.30_1 != 0)
  goto <bb 3>; [36.64%]
else
  goto <bb 4>; [63.36%]

FREQ:3664
<bb 3>:
global_ofile.31_7 = global_ofile;
__builtin_fputs (buffer_3(D), global_ofile.31_7);

FREQ:10000
<bb 4>:
return;
```

```
main ()

FREQ:911
<bb 2>:
global_min_ticks = 60;
global_min_seconds = 5;
global_allstats = 0;
global_custrun = 0;
global_align = 8;
write_to_file = 0;
mem_array_ents = 0;
MEM[(int *)&tests_to_do] = { 1, 1, 1, 1 };
MEM[(int *)&tests_to_do + 16B] = { 1, 1, 1, 1 };
tests_to_do[8] = 1;
tests_to_do[9] = 1;
global_numsortstruct.request_secs = 5;
global_strsortstruct.request_secs = 5;
global_bitopstruct.request_secs = 5;
global_emfloatstruct.request_secs = 5;
global_fourierstruct.request_secs = 5;
global_assignstruct.request_secs = 5;
global_ideastruct.request_secs = 5;
global_huffstruct.request_secs = 5;
global_nnetstruct.request_secs = 5;
global_lustruct.request_secs = 5;
global_numsortstruct.adjust = 0;
global_numsortstruct.arraysize = 8111;
global_strsortstruct.adjust = 0;
global_strsortstruct.arraysize = 8111;
global_bitopstruct.adjust = 0;
global_bitopstruct.bitfieldarraysize = 16384;
global_emfloatstruct.adjust = 0;
global_emfloatstruct.arraysize = 3000;
global_fourierstruct.adjust = 0;
global_assignstruct.adjust = 0;
global_ideastruct.adjust = 0;
global_ideastruct.arraysize = 4000;
global_huffstruct.adjust = 0;
global_huffstruct.arraysize = 5000;
global_nnetstruct.adjust = 0;
global_lustruct.adjust = 0;
if (argc_90(D) == 2)
  goto <bb 3>; [20.24%]
else
  goto <bb 4>; [79.76%]

FREQ:184
<bb 3>:
_1 = MEM[(char * *)argv_91(D) + 8B];
_149 = strtol (_1, 0B, 10);
_150 = (int) _149;
testnum = _150;

FREQ:909
<bb 4>:
output_string ("\nBYTEmark* Native Mode Benchmark ver. 2 (10/95)\n");
output_string ("Index-split by Andrew D. Balsa (11/97)\n");
output_string ("Linux/Unix* port by Uwe F. Mayer (12/96,11/97)\n");
global_allstats.0_2 = global_allstats;
if (global_allstats.0_2 != 0)
  goto <bb 5>; [33.00%]
else
  goto <bb 6>; [67.00%]

FREQ:300
<bb 5>:
output_string ("\n");
output_string ("============================== ALL STATISTICS ===============================\n");
time (&time_and_date);
loctime_100 = localtime (&time_and_date);
_3 = asctime (loctime_100);
__builtin___sprintf_chk (&buffer, 1, 1024, "**Date and time of benchmark run: %s", _3);
output_string (&buffer);
__builtin___sprintf_chk (&buffer, 1, 1024, "**Sizeof: char:%u short:%u int:%u long:%u u8:%u u16:%u u32:%u int32:%u\n", 1, 2, 4, 8, 1, 2, 4, 4);
output_string (&buffer);
__builtin_memcpy (&buffer, "**System used for compilation:\n", 32);
output_string (&buffer);
__builtin_memcpy (&buffer, "**Linux elvenado 4.15.0-112-generic #113-Ubuntu SMP Thu Jul 9 23:41:39 UTC 2020 \n", 82);
output_string (&buffer);
__builtin_memcpy (&buffer, "**C compiler: gcc version 7.5.0 (Ubuntu 7.5.0-3ubuntu1~18.04) \n", 64);
output_string (&buffer);
__builtin_memcpy (&buffer, "**libc: libc-2.27.so\n", 22);
output_string (&buffer);
__builtin_memcpy (&buffer, "**Date of compilation: Mon 24 Aug 10:41:27 BST 2020\n", 53);
output_string (&buffer);
output_string ("============================================================================\n");

FREQ:909
<bb 6>:
output_string ("\nTEST                : Iterations/sec.  : Old Index   : New Index\n");
output_string ("                    :                  : Pentium 90* : AMD K6/233*\n");
output_string ("--------------------:------------------:-------------:------------\n");
i_113 = testnum;
ivtmp.54_26 = (sizetype) i_113;

FREQ:5151
<bb 7>:
# lx_memindex_319 = PHI <lx_memindex_44(57), 1.0e+0(6)>
# lx_intindex_317 = PHI <lx_intindex_47(57), 1.0e+0(6)>
# lx_fpindex_315 = PHI <lx_fpindex_50(57), 1.0e+0(6)>
# intindex_313 = PHI <intindex_53(57), 1.0e+0(6)>
# fpindex_322 = PHI <fpindex_56(57), 1.0e+0(6)>
# prephitmp_19 = PHI <prephitmp_23(57), i_113(6)>
# ivtmp.54_13 = PHI <ivtmp.54_24(57), ivtmp.54_26(6)>
i_320 = (int) ivtmp.54_13;
_57 = ivtmp.54_13 * 4;
_4 = MEM[symbol: tests_to_do, index: _57, offset: 0B];
if (_4 != 0)
  goto <bb 8>; [33.00%]
else
  goto <bb 57>; [67.00%]

FREQ:1700
<bb 8>:
_326 = ivtmp.54_13 * 8;
_5 = MEM[symbol: ftestnames, index: _326, offset: 0B];
__builtin___sprintf_chk (&buffer, 1, 1024, "%s    :", _5);
__printf_chk (1, "%s", &buffer);
write_to_file.30_190 = write_to_file;
if (write_to_file.30_190 != 0)
  goto <bb 9>; [36.64%]
else
  goto <bb 10>; [63.36%]

FREQ:623
<bb 9>:
global_ofile.31_191 = global_ofile;
__builtin_fputs (&buffer, global_ofile.31_191);

FREQ:1700
<bb 10>:
_153 = MEM[symbol: funcpointer, index: _326, offset: 0B];
_153 ();
_6 = MEM[symbol: lx_bindex, index: _326, offset: 0B];
_7 = bmean_187(D) / _6;
_8 = MEM[symbol: bindex, index: _326, offset: 0B];
_9 = bmean_187(D) / _8;
__builtin___sprintf_chk (&buffer, 1, 1024, " %15.5g  :  %9.2f  :  %9.2f\n", bmean_187(D), _9, _7);
__printf_chk (1, "%s", &buffer);
write_to_file.30_189 = write_to_file;
if (write_to_file.30_189 != 0)
  goto <bb 11>; [36.64%]
else
  goto <bb 12>; [63.36%]

FREQ:623
<bb 11>:
global_ofile.31_192 = global_ofile;
__builtin_fputs (&buffer, global_ofile.31_192);

FREQ:1700
<bb 12>:
_10 = i_320 == 4;
_147 = (unsigned int) ivtmp.54_13;
_133 = _147 + 4294967288;
_48 = _133 <= 1;
_134 = _10 | _48;
pretmp_12 = MEM[symbol: bindex, index: _326, offset: 0B];
pretmp_21 = MEM[symbol: lx_bindex, index: _326, offset: 0B];
if (_134 != 0)
  goto <bb 13>; [67.00%]
else
  goto <bb 14>; [33.00%]

FREQ:561
<bb 14>:
_18 = bmean_187(D) / pretmp_12;
intindex_136 = _18 * intindex_313;
if (_147 > 7)
  goto <bb 16>; [50.00%]
else
  goto <bb 15>; [50.00%]

FREQ:561
<bb 15>:
_312 = 201 >> i_320;
_314 = _312 & 1;
_324 = ~_312;
_339 = _324 & 1;
_316 = (_Bool) _324;
if (_316 != 0)
  goto <bb 16>; [20.00%]
else
  goto <bb 17>; [80.00%]

FREQ:280
<bb 16>:
_27 = bmean_187(D) / pretmp_21;
lx_memindex_137 = _27 * lx_memindex_319;
goto <bb 18>; [100.00%]

FREQ:381
<bb 17>:
_25 = bmean_187(D) / pretmp_21;
lx_intindex_138 = _25 * lx_intindex_317;

FREQ:1139
<bb 13>:
_14 = bmean_187(D) / pretmp_12;
fpindex_139 = _14 * fpindex_322;
_16 = bmean_187(D) / pretmp_21;
lx_fpindex_140 = _16 * lx_fpindex_315;
goto <bb 18>; [100.00%]

FREQ:1700
<bb 18>:
# lx_memindex_43 = PHI <lx_memindex_319(13), lx_memindex_319(17), lx_memindex_137(16)>
# lx_intindex_46 = PHI <lx_intindex_317(13), lx_intindex_138(17), lx_intindex_317(16)>
# lx_fpindex_49 = PHI <lx_fpindex_140(13), lx_fpindex_315(17), lx_fpindex_315(16)>
# intindex_52 = PHI <intindex_313(13), intindex_136(17), intindex_136(16)>
# fpindex_55 = PHI <fpindex_139(13), fpindex_322(17), fpindex_322(16)>
global_allstats.10_28 = global_allstats;
if (global_allstats.10_28 != 0)
  goto <bb 20>; [33.00%]
else
  goto <bb 19>; [67.00%]

FREQ:561
<bb 20>:
__builtin___sprintf_chk (&buffer, 1, 1024, "  Absolute standard deviation: %g\n", bstdev_188(D));
output_string (&buffer);
if (bmean_187(D) > 1.00000000000000001999189980260288361964776078853415942018e-100)
  goto <bb 21>; [33.00%]
else
  goto <bb 22>; [67.00%]

FREQ:185
<bb 21>:
_29 = bstdev_188(D) * 1.0e+2;
_30 = _29 / bmean_187(D);
__builtin___sprintf_chk (&buffer, 1, 1024, "  Relative standard deviation: %g %%\n", _30);
output_string (&buffer);

FREQ:561
<bb 22>:
__builtin___sprintf_chk (&buffer, 1, 1024, "  Number of runs: %lu\n", 5);
output_string (&buffer);
switch (i_320) <default: <L39> [9.09%], case 0: <L29> [9.09%], case 1: <L30> [9.09%], case 2: <L31> [9.09%], case 3: <L32> [9.09%], case 4: <L33> [9.09%], case 5: <L34> [9.09%], case 6: <L35> [9.09%], case 7: <L36> [9.09%], case 8: <L37> [9.09%], case 9: <L38> [9.09%]>

FREQ:51
<bb 36>:
<L32> [0.51%]:
_201 = global_emfloatstruct.loops;
__builtin___sprintf_chk (&buffer, 1, 80, "  Number of loops: %lu\n", _201);
__printf_chk (1, "%s", &buffer);
write_to_file.30_224 = write_to_file;
if (write_to_file.30_224 != 0)
  goto <bb 37>; [36.64%]
else
  goto <bb 38>; [63.36%]

FREQ:19
<bb 37>:
global_ofile.31_225 = global_ofile;
__builtin_fputs (&buffer, global_ofile.31_225);

FREQ:51
<bb 38>:
_202 = global_emfloatstruct.arraysize;
__builtin___sprintf_chk (&buffer, 1, 80, "  Array size: %lu\n", _202);
__printf_chk (1, "%s", &buffer);
write_to_file.30_223 = write_to_file;
if (write_to_file.30_223 != 0)
  goto <bb 39>; [36.64%]
else
  goto <bb 26>; [63.36%]

FREQ:51
<bb 44>:
<L35> [0.51%]:
_205 = global_ideastruct.arraysize;
__builtin___sprintf_chk (&buffer, 1, 80, "  Array size: %lu\n", _205);
__printf_chk (1, "%s", &buffer);
write_to_file.30_232 = write_to_file;
if (write_to_file.30_232 != 0)
  goto <bb 45>; [36.64%]
else
  goto <bb 46>; [63.36%]

FREQ:19
<bb 45>:
global_ofile.31_233 = global_ofile;
__builtin_fputs (&buffer, global_ofile.31_233);

FREQ:51
<bb 46>:
_206 = global_ideastruct.loops;
__builtin___sprintf_chk (&buffer, 1, 80, " Number of loops: %lu\n", _206);
__printf_chk (1, "%s", &buffer);
write_to_file.30_231 = write_to_file;
if (write_to_file.30_231 != 0)
  goto <bb 47>; [36.64%]
else
  goto <bb 26>; [63.36%]

FREQ:51
<bb 42>:
<L34> [0.51%]:
_204 = global_assignstruct.numarrays;
__builtin___sprintf_chk (&buffer, 1, 80, "  Number of arrays: %lu\n", _204);
__printf_chk (1, "%s", &buffer);
write_to_file.30_229 = write_to_file;
if (write_to_file.30_229 != 0)
  goto <bb 43>; [36.64%]
else
  goto <bb 26>; [63.36%]

FREQ:51
<bb 52>:
<L37> [0.51%]:
_209 = global_nnetstruct.loops;
__builtin___sprintf_chk (&buffer, 1, 80, "  Number of loops: %lu\n", _209);
__printf_chk (1, "%s", &buffer);
write_to_file.30_239 = write_to_file;
if (write_to_file.30_239 != 0)
  goto <bb 53>; [36.64%]
else
  goto <bb 26>; [63.36%]

FREQ:51
<bb 23>:
<L29> [0.51%]:
_193 = global_numsortstruct.numarrays;
_194 = (int) _193;
__builtin___sprintf_chk (&buffer, 1, 80, "  Number of arrays: %d\n", _194);
__printf_chk (1, "%s", &buffer);
write_to_file.30_212 = write_to_file;
if (write_to_file.30_212 != 0)
  goto <bb 24>; [36.64%]
else
  goto <bb 25>; [63.36%]

FREQ:19
<bb 24>:
global_ofile.31_213 = global_ofile;
__builtin_fputs (&buffer, global_ofile.31_213);

FREQ:51
<bb 25>:
_195 = global_numsortstruct.arraysize;
__builtin___sprintf_chk (&buffer, 1, 80, "  Array size: %ld\n", _195);
__printf_chk (1, "%s", &buffer);
write_to_file.30_211 = write_to_file;
if (write_to_file.30_211 != 0)
  goto <bb 27>; [36.64%]
else
  goto <bb 26>; [63.36%]

FREQ:51
<bb 28>:
<L30> [0.51%]:
_196 = global_strsortstruct.numarrays;
_197 = (int) _196;
__builtin___sprintf_chk (&buffer, 1, 80, "  Number of arrays: %d\n", _197);
__printf_chk (1, "%s", &buffer);
write_to_file.30_216 = write_to_file;
if (write_to_file.30_216 != 0)
  goto <bb 29>; [36.64%]
else
  goto <bb 30>; [63.36%]

FREQ:19
<bb 29>:
global_ofile.31_217 = global_ofile;
__builtin_fputs (&buffer, global_ofile.31_217);

FREQ:51
<bb 30>:
_198 = global_strsortstruct.arraysize;
__builtin___sprintf_chk (&buffer, 1, 80, "  Array size: %ld\n", _198);
__printf_chk (1, "%s", &buffer);
write_to_file.30_215 = write_to_file;
if (write_to_file.30_215 != 0)
  goto <bb 31>; [36.64%]
else
  goto <bb 26>; [63.36%]

FREQ:51
<bb 32>:
<L31> [0.51%]:
_199 = global_bitopstruct.bitoparraysize;
__builtin___sprintf_chk (&buffer, 1, 80, "  Operations array size: %ld\n", _199);
__printf_chk (1, "%s", &buffer);
write_to_file.30_220 = write_to_file;
if (write_to_file.30_220 != 0)
  goto <bb 33>; [36.64%]
else
  goto <bb 34>; [63.36%]

FREQ:19
<bb 33>:
global_ofile.31_221 = global_ofile;
__builtin_fputs (&buffer, global_ofile.31_221);

FREQ:51
<bb 34>:
_200 = global_bitopstruct.bitfieldarraysize;
__builtin___sprintf_chk (&buffer, 1, 80, "  Bitfield array size: %ld\n", _200);
__printf_chk (1, "%s", &buffer);
write_to_file.30_219 = write_to_file;
if (write_to_file.30_219 != 0)
  goto <bb 35>; [36.64%]
else
  goto <bb 26>; [63.36%]

FREQ:51
<bb 48>:
<L36> [0.51%]:
_207 = global_huffstruct.arraysize;
__builtin___sprintf_chk (&buffer, 1, 80, "  Array size: %lu\n", _207);
__printf_chk (1, "%s", &buffer);
write_to_file.30_236 = write_to_file;
if (write_to_file.30_236 != 0)
  goto <bb 49>; [36.64%]
else
  goto <bb 50>; [63.36%]

FREQ:19
<bb 49>:
global_ofile.31_237 = global_ofile;
__builtin_fputs (&buffer, global_ofile.31_237);

FREQ:51
<bb 50>:
_208 = global_huffstruct.loops;
__builtin___sprintf_chk (&buffer, 1, 80, "  Number of loops: %lu\n", _208);
__printf_chk (1, "%s", &buffer);
write_to_file.30_235 = write_to_file;
if (write_to_file.30_235 != 0)
  goto <bb 51>; [36.64%]
else
  goto <bb 26>; [63.36%]

FREQ:51
<bb 54>:
<L38> [0.51%]:
_210 = global_lustruct.numarrays;
__builtin___sprintf_chk (&buffer, 1, 80, "  Number of arrays: %lu\n", _210);
__printf_chk (1, "%s", &buffer);
write_to_file.30_241 = write_to_file;
if (write_to_file.30_241 != 0)
  goto <bb 55>; [36.64%]
else
  goto <bb 26>; [63.36%]

FREQ:51
<bb 40>:
<L33> [0.51%]:
_203 = global_fourierstruct.arraysize;
__builtin___sprintf_chk (&buffer, 1, 80, "  Number of coefficients: %lu\n", _203);
__printf_chk (1, "%s", &buffer);
write_to_file.30_227 = write_to_file;
if (write_to_file.30_227 != 0)
  goto <bb 41>; [36.64%]
else
  goto <bb 26>; [63.36%]

FREQ:19
<bb 39>:
global_ofile.31_226 = global_ofile;
__builtin_fputs (&buffer, global_ofile.31_226);
goto <bb 56> (<L39>); [100.00%]

FREQ:19
<bb 47>:
global_ofile.31_234 = global_ofile;
__builtin_fputs (&buffer, global_ofile.31_234);
goto <bb 56> (<L39>); [100.00%]

FREQ:19
<bb 43>:
global_ofile.31_230 = global_ofile;
__builtin_fputs (&buffer, global_ofile.31_230);
goto <bb 56> (<L39>); [100.00%]

FREQ:19
<bb 53>:
global_ofile.31_240 = global_ofile;
__builtin_fputs (&buffer, global_ofile.31_240);
goto <bb 56> (<L39>); [100.00%]

FREQ:320
<bb 26>:
goto <bb 56> (<L39>); [100.00%]

FREQ:19
<bb 27>:
global_ofile.31_214 = global_ofile;
__builtin_fputs (&buffer, global_ofile.31_214);
goto <bb 56> (<L39>); [100.00%]

FREQ:19
<bb 31>:
global_ofile.31_218 = global_ofile;
__builtin_fputs (&buffer, global_ofile.31_218);
goto <bb 56> (<L39>); [100.00%]

FREQ:19
<bb 35>:
global_ofile.31_222 = global_ofile;
__builtin_fputs (&buffer, global_ofile.31_222);
goto <bb 56> (<L39>); [100.00%]

FREQ:19
<bb 51>:
global_ofile.31_238 = global_ofile;
__builtin_fputs (&buffer, global_ofile.31_238);
goto <bb 56> (<L39>); [100.00%]

FREQ:19
<bb 55>:
global_ofile.31_242 = global_ofile;
__builtin_fputs (&buffer, global_ofile.31_242);

FREQ:19
<bb 41>:
global_ofile.31_228 = global_ofile;
__builtin_fputs (&buffer, global_ofile.31_228);
goto <bb 56> (<L39>); [100.00%]

FREQ:561
<bb 56>:
<L39> [5.61%]:
buffer ={v} {CLOBBER};
_31 = MEM[symbol: ftestnames, index: _326, offset: 0B];
__builtin___sprintf_chk (&buffer, 1, 1024, "Done with %s\n\n", _31);
output_string (&buffer);
pretmp_22 = testnum;

FREQ:1139
<bb 19>:
pretmp_20 = testnum;
goto <bb 57>; [100.00%]

FREQ:5151
<bb 57>:
# lx_memindex_44 = PHI <lx_memindex_319(7), lx_memindex_43(19), lx_memindex_43(56)>
# lx_intindex_47 = PHI <lx_intindex_317(7), lx_intindex_46(19), lx_intindex_46(56)>
# lx_fpindex_50 = PHI <lx_fpindex_315(7), lx_fpindex_49(19), lx_fpindex_49(56)>
# intindex_53 = PHI <intindex_313(7), intindex_52(19), intindex_52(56)>
# fpindex_56 = PHI <fpindex_322(7), fpindex_55(19), fpindex_55(56)>
# prephitmp_23 = PHI <prephitmp_19(7), pretmp_20(19), pretmp_22(56)>
_58 = (unsigned int) ivtmp.54_13;
_309 = _58 + 1;
_152 = (int) _309;
ivtmp.54_24 = ivtmp.54_13 + 1;
if (prephitmp_23 >= _152)
  goto <bb 7>; [85.00%]
else
  goto <bb 58>; [15.00%]

FREQ:909
<bb 58>:
global_custrun.17_33 = global_custrun;
if (global_custrun.17_33 == 0)
  goto <bb 59>; [33.00%]
else
  goto <bb 60>; [67.00%]

FREQ:300
<bb 59>:
output_string ("==========================ORIGINAL BYTEMARK RESULTS==========================\n");
_34 = pow (intindex_53, 1.42857000000000001175237684947205707430839538574218 75e-1);
__builtin___sprintf_chk (&buffer, 1, 1024, "INTEGER INDEX       : %.3f\n", _34);
output_string (&buffer);
_35 = pow (fpindex_56, 3.33330000000000015170087408478138968348503112792968 75e-1);
__builtin___sprintf_chk (&buffer, 1, 1024, "FLOATING-POINT INDEX: %.3f\n", _35);
output_string (&buffer);
output_string ("Baseline (MSDOS*)   : Pentium* 90, 256 KB L2-cache, Watcom* compiler 10.0\n");
output_string ("==============================LINUX DATA BELOW===============================\n");
global_ofile.18_36 = global_ofile;
write_to_file.19_37 = write_to_file;
hardware (write_to_file.19_37, global_ofile.18_36);
__builtin_memcpy (&buffer, "C compiler          : gcc version 7.5.0 (Ubuntu 7.5.0-3ubuntu1~18.04) \n", 72);
output_string (&buffer);
__builtin_memcpy (&buffer, "libc                : libc-2.27.so\n", 36);
output_string (&buffer);
_38 = pow (lx_memindex_44, 3.33333333299999978738270556277711875736713409423828125e-1);
__builtin___sprintf_chk (&buffer, 1, 1024, "MEMORY INDEX        : %.3f\n", _38);
output_string (&buffer);
_39 = pow (lx_intindex_47, 2.5e-1);
__builtin___sprintf_chk (&buffer, 1, 1024, "INTEGER INDEX       : %.3f\n", _39);
output_string (&buffer);
_40 = pow (lx_fpindex_50, 3.33333333299999978738270556277711875736713409423828125e-1);
__builtin___sprintf_chk (&buffer, 1, 1024, "FLOATING-POINT INDEX: %.3f\n", _40);
output_string (&buffer);
output_string ("Baseline (LINUX)    : AMD K6/233*, 512 KB L2-cache, gcc 2.7.2.3, libc-5.4.38\n");
output_string ("* Trademarks are property of their respective holder.\n");

FREQ:909
<bb 60>:
exit (0);
```