

# gcov

gcov is a test coverage program. Use it in concert with G++ to analyze your programs to help create more efficient, faster running code and to discover untested parts of your program. You can use gcov as a profiling tool to help discover where your optimization efforts will best affect your code. You can also use gcov along with the other profiling tool, gprof, to assess which parts of your code use the greatest amount of computing time.

## commands:

Compile the program using g++

```
$ g++ -fprofile-arcs -ftest-coverage -o final main.cpp
```

This will create .gcno file in addition to the executable.

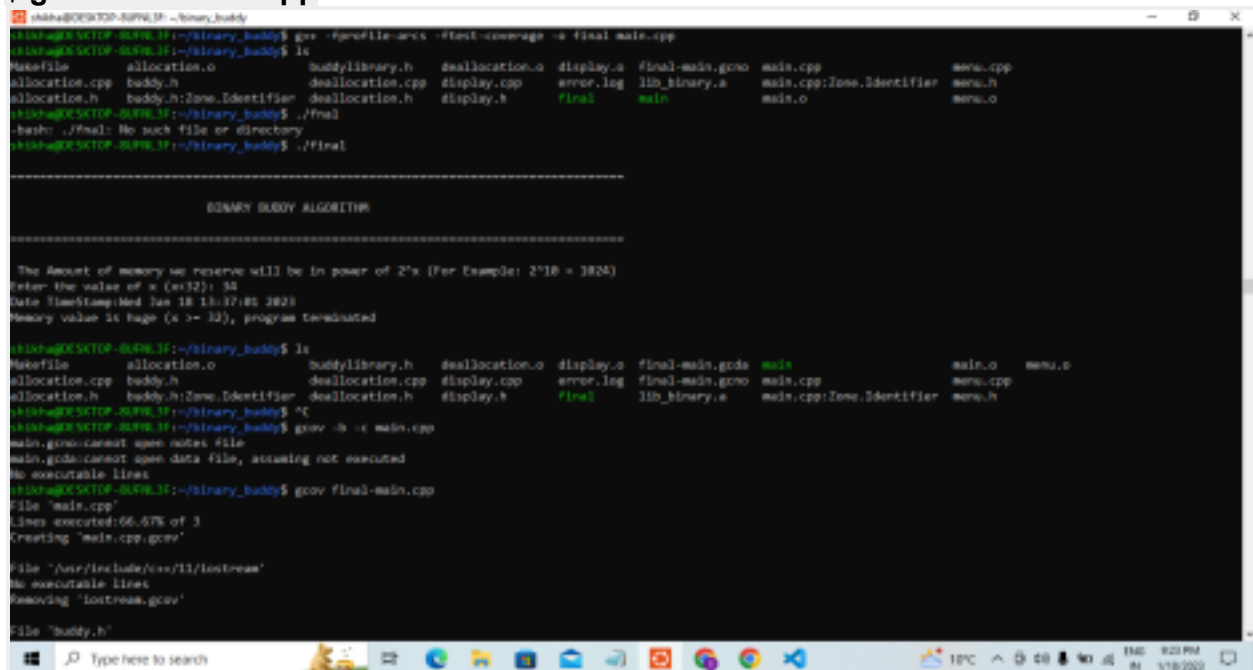
```
$ ls final main.cpp final-main.gcno
```

run the executable

```
$ ./final
```

Now gcov can be run to get the coverage data.

```
$ gcov final-main.cpp
```



```
shiba@DESKTOP-8UPWJ3P: ~/Binary_buddy
shiba@DESKTOP-8UPWJ3P:~/Binary_buddy$ g++ -fprofile-arcs -ftest-coverage -o final main.cpp
shiba@DESKTOP-8UPWJ3P:~/Binary_buddy$ ls
Makefile      allocation.o      buddylibrary.h    deallocation.o    display.o    final-main.gcno  main.cpp          menu.o
allocation.cpp  buddy.h          deallocation.cpp  display.cpp       error.log    lib_binary.a    main.cpp:Zone.Identifier  menu.h
allocation.h    buddy.h:Zone.Identifier  deallocation.h    display.h        final       main.o          menu.o
shiba@DESKTOP-8UPWJ3P:~/Binary_buddy$ ./final
-bash: ./final: No such file or directory
shiba@DESKTOP-8UPWJ3P:~/Binary_buddy$ ./final

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BINARY BUDDY ALGORITHM
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The Amount of memory we reserve will be in power of 2's (For Example: 2^16 = 3824)
Enter the value of n (n<32): 34
Date TimeStamped has 18 11:17:01 2023
Memory value is huge (n >= 32), program terminated

shiba@DESKTOP-8UPWJ3P:~/Binary_buddy$ ls
Makefile      allocation.o      buddylibrary.h    deallocation.o    display.o    final-main.gcno  main.cpp          menu.o
allocation.cpp  buddy.h          deallocation.cpp  display.cpp       error.log    final-main.gcno  main.cpp          menu.o
allocation.h    buddy.h:Zone.Identifier  deallocation.h    display.h        final       lib_binary.a    main.cpp:Zone.Identifier  menu.h
shiba@DESKTOP-8UPWJ3P:~/Binary_buddy$ gcc -c main.cpp
main.gcno: cannot open notes file
main.gcno: cannot open data file, assuming not executed
No executable lines
shiba@DESKTOP-8UPWJ3P:~/Binary_buddy$ gcov final-main.cpp
File 'main.cpp'
Lines executed:66.67% of 3
Creating 'main.cpp.gcov'

File 'usr/include/c++/11/iostream'
No executable lines
Removing 'loststream.gcov'

File 'buddy.h'
```

```
shaha@DESKTOP-8JF4L3F: ~/binary_buddy
lines executed:0.00% of 1
creating 'buddy.h.gcov'

File '/usr/include/c++/11/bits/stl_algobase.h'
lines executed:0.00% of 81
creating 'stl_algobase.h.gcov'

File '/usr/include/c++/11/bits/stl_iterator_base_types.h'
lines executed:0.00% of 2
creating 'stl_iterator_base_types.h.gcov'

File '/usr/include/c++/11/bits/stl_uninitialized.h'
lines executed:0.00% of 15
creating 'stl_uninitialized.h.gcov'

File '/usr/include/c++/11/ext/new_allocator.h'
lines executed:10.53% of 19
creating 'new_allocator.h.gcov'

File '/usr/include/c++/11/bits/stl_vector.h'
lines executed:22.50% of 93
creating 'stl_vector.h.gcov'

File '/usr/include/c++/11/bits/stl_iterator.h'
lines executed:0.00% of 28
creating 'stl_iterator.h.gcov'

File '/usr/include/c++/11/bits/alloc_traits.h'
lines executed:20.00% of 15
creating 'alloc_traits.h.gcov'

File '/usr/include/c++/11/bits/cpp_type_traits.h'
lines executed:0.00% of 2
creating 'cpp_type_traits.h.gcov'

File '/usr/include/c++/11/bits/stl_construct.h'
lines executed:100.00% of 4
creating 'stl_construct.h.gcov'
```

```
shaha@DESKTOP-8JF4L3F: ~/binary_buddy
File '/usr/include/c++/11/bits/move.h'
lines executed:0.00% of 4
creating 'move.h.gcov'

File '/usr/include/c++/11/bits/vector.tcc'
lines executed:0.00% of 52
creating 'vector.tcc.gcov'

File '/usr/include/c++/11/bits/allocator.h'
lines executed:50.00% of 4
creating 'allocator.h.gcov'

File '/usr/include/c++/11/cmath'
lines executed:0.00% of 6
creating 'cmath.gcov'

File 'mems.cpp'
lines executed:20.00% of 60
creating 'mems.cpp.gcov'

File 'display.cpp'
lines executed:0.00% of 14
creating 'display.cpp.gcov'

File 'deallocation.cpp'
lines executed:0.00% of 38
creating 'deallocation.cpp.gcov'

File 'allocation.cpp'
lines executed:0.00% of 52
creating 'allocation.cpp.gcov'

File '/usr/include/c++/11/new'
lines executed:0.00% of 2
creating 'new.gcov'

lines executed:9.48% of 485
shaha@DESKTOP-8JF4L3F:~/binary_buddy$ "C
shaha@DESKTOP-8JF4L3F:~/binary_buddy$ ./main
```