

# **CS2720 Practical Software Development**

Coverage Tutorial Spring 2011

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## Program coverage

The program **gcov** may be used to check how many times each line of your program is used.

To use this program :

- Do not compile with debug or optimization switches
- Include the switches `-fprofile-arcs` and `-ftest-coverage` in both the compile and link commands. This will create a file named *progName.gcno* in your directory for each compiled file.
- Now run your program. This will create a file named *progName.gcda* in your directory for the program file and each included file.
- Now run the coverage program on your **source** code. `gcov progName.cc`. This will create a `.gcov` file for each included file. eg *progName.cc.gcov*
- You can run the coverage program on any **.cc** file or on more than one at once. eg `gcov file1.cc file2.cc file3.cc`
- the `.gcov` file contains the coverage information.

- each line of code is prefaced with
  - **-:** this line is not an executable line
  - **n:** this line was executed n times
  - **#####:** this line was not executed

## Makefile

```
CC = g++
CCFLAGS = -Wall -fprofile-arcs -ftest-coverage
OBSJS = screen.o point.o line.o box.o text.o textBox.o draw.o myio.o
draw : $(OBSJS)
    $(CC) -fprofile-arcs -ftest-coverage $^ -o $@
%.o : %.cc
    $(CC) -c $(CCFLAGS) $<
## generate the prerequisites and append to the desired file
.prereq : $(OBSJS:.o=.cc) $(wildcard *.h) Makefile
    rm -f .prereq
    $(CC) $(CCFLAGS) -MM $(OBSJS:.o=.cc) >> ./prereq
## include the generated prerequisite file
include .prereq
.PHONY : clean clean-all
clean :
    rm -f *~ *.o
clean-all : clean
    rm -f draw
```