Computational Physics HW1

Emily Biermann

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1 EX1

1. Use utilities in Table 1.2 to examine output of exp.cpp

   (a) ldd: libc++.1.dylib and libSystemB.dylib libraries are used

   (b) file: exp: Mach-O 64-bit executable x86_64

   (c) nm: header, main, binder

   (d) c++filt: returns "exp"

2. Call nm and ldd before/after call to exp

   (a) const arg: nm gives private, header, exp, main, binder. ldd gives same output. c++filt gives same output

   (b) variable arg: nm gives the same outputas above as does ldd

2 EX2

1. ldd: The output is the same. The libraries libc++.1.dylib and libSystem.B.dylib are used.

2. : nm The output is much longer and no longer readable

3 EX3

1. ldd: no new libraries added

2. nm: very large output that is difficult to understand

3. Taylor Expansion vs Math Library:

x	exp Math Library	exp Taylor Series
-10	4.53999e-5	9.41608e-05
-8	0.000335463	0.000335169
-6	0.00247875	0.00247981
-4	0.0183156	0.0183155
-2	0.135335	0.135335
0	1	1
2	7.38906	7.38906
4	54.5982	54.598
6	403.429	403.429
8	2980.96	2980.96
10	22026.5	22026.5

4 EX4

The output tells me that /path/to/foo is a directory.

5 EX5

$ ./plus 5 4
5 + 4 = 9

6 EX6

$ make
c++ -c -o plus.o plus.cpp
c++ -o plus plus.o

$ ./plus 6 8
6 + 8 = 14

7 EX7

I was unable to make a shared library.

8 EX8

I made makefiles for each example.

9 EX9

I added all source code and Makefiles to the git repository.