

Program 2 Test
CSI4337

Compile and test on wind.ecs.baylor.edu

Compile with: `gcc -g -Wall -ansi -pedantic -std=c99 -lpthread`

-2 points per warning up to -5 for basic warnings

Run with: `valgrind --tool=memcheck --show-reachable=yes --leak-check=full --track-fds=yes ./<executable>`

-2 points for leaked file descriptors up to -5 (ignore fd=0, 1, and 2)

-2 points for each memory leak up to -10. VERIFY submission is responsible for leak

Part I (40 points)

0 points if program fails to compile

If program fails to operate properly, deduct 50% (min) and grade by inspection

-7 if use pipes

Test 10! with 3 threads. Verify completely correct answer

Test 40! with 1 and 40 threads. Verify correct answer

Test N=-1 and P=1 – Bad N

Test N=0 and P=1 – Answer = 1

Test N=5 and P=7 – Bad P

If submission includes f.c, replace with prototype and penalize 10 points.

Compile using the following f(x) in a file named powf.c

```
double f(int x) {  
    return 5.3;  
}
```

Use N=5 and P=2. This should compute $5 \cdot 3^{N+1}$

Compile using the following f(x) in a file named doublef.c

```
#include <stdio.h>
```

```
double f(int x) {  
    static unsigned int executions = 0;  
    if (executions++ > 0) {  
        fprintf(stderr, "Warning: f(x) executed %u times\n", executions);  
    }  
    return 0;  
}
```

This should not print a warning for N=10 and P=2.

For both parts:

Take off points for poor coding practices

Verify correct use of system calls, including test of return values

Verify use of system error messages (e.g., `errno`, `perror`, `strerror`, exception messages) when available. Identify overuse

Part II (5 points)

Verify experiments conducted for all values

Part III (55 points)

0 points if program fails to compile

If program fails to operate properly, deduct 50% (min) and grade by inspection

Test $10!$ with 3 threads. Verify completely correct answer

Test $40!$ with 1 and 40 threads. Verify correct answer

Test $N=-1$ and $P=1$ – Bad N

Test $N=0$ and $P=1$ – Answer = 1

Test $N=5$ and $P=7$ – Bad P

- 2 unused include/import
- 10 for poor commenting
- 2 for each unjustified numeric constant
- 5 bad submission
- 1 for each section of commented code
- 5 if violate coding convention