

Homework 01

데이터사이언스를 위한 컴퓨팅 1

2016310930 데이터사이언스학과 신성구

1 Compilation Process

1.1 Preprocessing

- a) *pow.c* includes 3 header files (*stdio.h*, *stdlib.h*, *math.h*), but we didn't write the file. Please find these 3 files. Report the file path.

→ **Stdio.h:** `/usr/include/stdio.h`

→ **Stdlib.h:** `/usr/include/stdlib.h`

→ **Math.h:** `/usr/include/math.h`

- b) Find a gcc option to run preprocessing and run it with *pow.c*. In the preprocessed results, please find the function declaration of *pow* and *printf*. Please copy and paste them into the report.

→ **Pow:** `extern double pow (double __x, double __y) __attribute__ ((__nothrow__ , __leaf__));`

→ **Printf:** `extern int printf (const char *__restrict __format, ...);`

- c) Does preprocessed result have *pow* and *printf* implementation? If the implementations are included, please explain the code briefly. If not, please explain why they are not implemented.

→ **X**(Not Included): 함수의 implementation은 Preprocessing이 아니라 Linking 과정에서 실행파일에 포함되기 때문이다.

1.2 Compilation

- a) Find a gcc options 1) to compile *pow.c* to produce *pow.o* and 2) to link *pow.o* with libraries and produce *pow*.

→ 1) `gcc -c pow.c -o pow.o`

→ 2) `gcc -o pow pow.o` (in Local) / `g++ -o pow pow.o` (in cluster)