

B06705048_os_hw1_王佩琳

第一題

```
gcc -o 1.out 1.c
```

```
./1.out
```

處理邏輯：It show that "Enter a positive number." at first, asking user to press input.

Then, the function fork() creates new process. The child process starts to compute and print the outcome. The parent process will wait for the child to complete.

第二題

```
gcc -o 2.out 2.c -pthread -lrt
```

處理邏輯：Using the function shm_open to create the shared memory object, ftruncate to configure the size of the shared memory object, and mmap to let memory map the shared memory object. Treating the ptr as dynamic integer array and put the computation into it at child process. Ptr[0] record the length -1 and the int pointer index points to it. After child process completes, read from the shared memory object and print

第三題

```
gcc -o filecopy 3.c
```

```
filecopy 1.txt 2.txt
```

如果不能正確開啟檔案 1，print "Opening file failed."，如果檔案 2 不存在，創新的檔案並把檔案 1 內容複製過去，檔案 2 已存在就直接蓋過去。

處理邏輯：Create a pipe first.

During the parent process：

Read the message in the source file (file1) and copy to write_msg.

Write the write_msg into the pipe

During the child process：

Read the message in the pipe and copy to read_msg.

Write the read_msg into the copy file(file 2)