

# Northern Michigan University (Marquette Co, MI)

CS426-01-26F: Operating Systems (Andrew A. Poe)  
Quiz 2

Name: \_\_\_\_\_  
Friday 11 September 2026 3:00 P.M. EDT

Time: 15 minutes.

Write a complete program in C. The program should open two files "input1.txt" and "input2.txt" for reading and "output.txt" for writing. Each input file contains multiple lines. Each line consists of five capital letters followed by a newline. In both files, the lines are already in alphabetical order. The program should recreate the output file, and merge the two input files into it, so that the lines from both files are copied into it in such an order that the output file is also in alphabetical order. Only low level system calls may be used.

For example, if input1.txt is

AFTER  
BLAME  
FRIED  
GOODY

And input2.txt is

CALEB  
RALPH

The output file should be

AFTER  
BLAME  
CALEB  
FRIED  
GOODY  
RALPH

```
#include <stdio.h>
#include <string.h>
#include <stdio.h>
#include <unistd.h>
#include <fcntl.h>
```

```
int main (int argc, char **argv) {

    int i1 = open ("input1.txt", O_RDONLY);
    int i2 = open ("input2.txt", O_RDONLY);
    int o1 = open ("output.txt", O_WRONLY|O_CREAT|O_TRUNC, 0700);
    char buf1[6], buf2[6];
    int l1 = read (i1, buf1, 6);
    int l2 = read (i2, buf2, 6);
    while (l1 > 0 || l2 > 0) {
```

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```
if (l2==0 || l1 > 0 && memcmp (buf1,buf2,6) < 0) {
    write (o1,buf1,6);
    l1 = read (i1,buf1,6);
} else {
    write (o1,buf2,6);
    l2 = read (i2,buf2,6);
}
}
close (i1);
close (i2);
close (o1);
return 0;
}
```