**University of Wolverhampton**

**School of Mathematics and Computer Science**

**Student Number:**

**Name:**

**5CS021 Numerical Methods and Concurrency Week 5 Workshop  
  
Tasks**

1. The following code opens up the file named as the first argument on the command line and copies it to the file named in the second argument on the command line:

**#include <stdio.h>**

**void main(int argc, char \*argv[]){**

**FILE \*fpSrc, \*fpDest;**

**char c;**

**fpSrc = fopen(argv[1], "r");**

**fpDest = fopen(argv[2], "w");**

**while (!feof(fpSrc)){**

**c = fgetc(fpSrc);**

**fputc(c, fpDest);**

**}**

**fclose(fpSrc);**

**fclose(fpDest);**

**}**

If you name and compile this program as fcopy.c and then compile it as :  
  
**cc fcopy.c -o fcopy**  
  
Then you run it with :  
  
**./fcopy file1.txt file2.txt**

It will copy the content of file1.txt to file2.txt. Whilst the program looks superficially correct, it has a logical error. Hint: It always produces an output file with an extra character in it. Fix this logical error, and add all the necessary error checking so that it will respond correctly if the user supplies it with the wrong number of arguments or an input source file that doesn't exist, and so on.

1. Based on what you have learnt from Task1, write a C program to compare 2 filenames supplied as arguments on the command line, and compare the contents of both the files, character by character, and then output "Identical" if they are both identical, and "Different" if they are different.
2. Based on the program in Task 1, write a program called encrypt.c which will change every alphabet character read in to the character next along the alphabet. For example 'A' will change into 'B', 'B' into 'C' and so on. When you get to 'Z', wrap around and change it to 'A'.
3. Based on Task 3, write a program called decrypt.c to reverse what encrypt.c did.