Homework 1 Report – CSE344

Mehmet Mahir Kayadelen
Student no. 210104004252

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1 Composition

For this project, I used a seperate c file for each question hw_1.c and hw1_2.c and one makefile for compile run and clean them for easy testability.

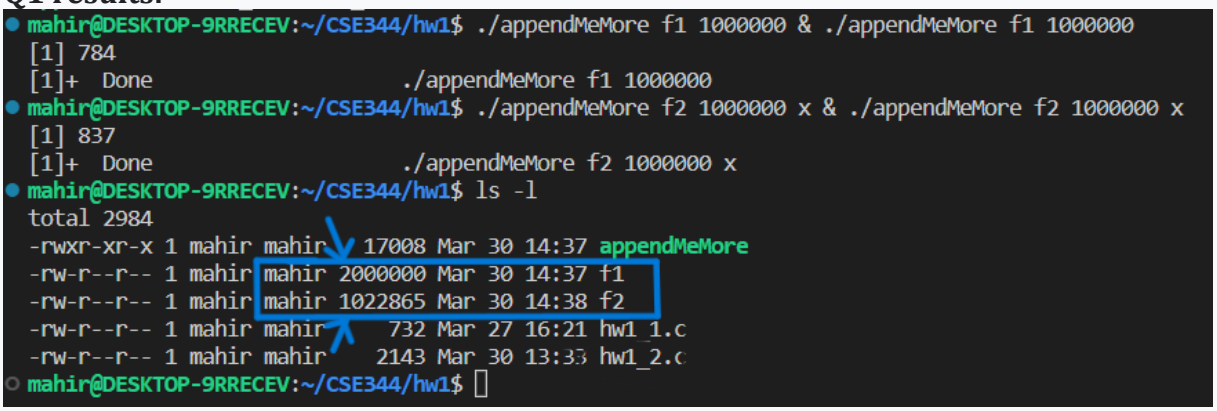
2 Program Logic

Q1) The main purpose of this question is to write a specific byte to a file in two different ways, and observe the differences when using the O_APPEND flag or manually using the lseek function. First, if there is no x argument, it means that we use the O_APPEND flag. This makes our job easier. We return as many for loops as the amount of bytes given by the user, and we write 1 byte with the write function in each loop.The second option is if the user has entered x arguments, we will not use the O_APPEND flag. That's why we take fd with lseek at the end of each loop to bring our file descriptor to the end before each loop.

Q2&3) The main purpose of this question is to implement the dup and dup2 functions using the fcntl function and then check the offsets of the duplicated file descriptors.For dup, I created new file descriptor and initialized it with fcntl function with F_DUPFD flag and checked if there is any error occur. For dup2, first checked whether oldf and newfd are the same and equal to -1, if so, I set the value of errno to EBADF and terminate the function. If it is not equal to -1, I returned newfd. Then I closed newfd with the close function (in case it was already open). Finally, I opened a new file descriptor with the value of newfd and returned it.

3 Testing

Q1 results:



Q2 results: