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Design for asgn0 Dog
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Part 1: Structure

The software called “dog”, has the implementation of the basic cat program, without support for any flags and with file arguments read in given order. This code copies data from each of the files specified on the command line to standard output in the order that they appear.The main function will take the number of arguments that the user provides from the command line. If there are no arguments given, then dog will copy standard input and display it to standard output. If there are files to read (arguments) given by the user, the program will read through each one, check if there is a dash, and display the contents of the file in the order they were given.

Part 2: Functions

Since this assignment is simple and can be completed in under a hundred lines of code, I only needed to create two functions.

```
void ReadWriteForever()
```

```
void ErrorCheck(int* fd, char* argv)
```

ReadWriteForever simply reads from standard input and writes to standard output forever.

ErrorCheck takes in a file descripter and a string and checks whether an error has occured. As I was coding this assignment I noticed that I had hard codded the same lines more than once. It was that point I realized that creating functions in order to reduce redundancy was the best thing to do.

Assignment Question:

1. The code for handling a file differs quite a bit for handling standard input. For standard input the only code we need is:

```
while(read(STDIN_FILENO, buffer, 1) > 0)
        write(STDOUT_FILENO, buffer, 1)
```

If we want to handle a file, we first have to check if there are any arguments given, open

the file, check if there is an error, read the file and put a certain amount of bytes from the file into a buffer, then write that buffer to standard output. When handling a file, we do not accept anything from standard input. I think that the concept to learn in this project is the low-level programing that C allows us to do.

2. One way to solve the issue of handling two types of inputs can be solved by using an iterative approach. With both file reading and standard input reading, I started with the base and then took small steps until the reading and writing of the input did something new. Once the code passes all the tests I repeated the process until the assignment was done.