Assignment 0 Design Document

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1 Goal

The goal of this program is to implement the cat command. The program should copy data from each of the files specified on the command line to standard output. If no files are specified the program should copy standard input to standard output.

2 Assumptions

I am assuming the user wants to output contents of files to stdout.

3 Design

The general approach I am taking is to check if the user passed arguments. Then if he did, check if the files exist and if they do open the files, read them, write to stdout, and finally close the files. If no arguments are passed, I will have a loop that will print everything passed to stdin until the user types Ctrl-D, signaling end-of-file.

4 Pseudocode

This is the core pseudocode for the program. Note that it's pseudocode, not C (or Java or Python) code.

```
procedure readFiles
        isInvalidFile ← 0
        Declare struct path_stat
        loop
                Declare buffer of size 32
                fd ← 0

                if strcmp(argv[i], "-") == 0) then
                        readstdin()
                        continue
```

```
        stat(argv[i], &path_stat)

        if S_ISDIR(path_stat.st_mode) then
                warnx("%s: Is a directory",argv[i]
                isInvalidFile ← 1
                continue

        fd ← open(arg[i], O_RDONLY)
        if fd = -1 then
                warn("%s", argv[i])
                isInvalidFile ← 1
                continue

        loop
                read(fd, buffer, 1)
                write(stdout, buffer, 1)
        close(fd)

        if isInvalidFile then
                exit(1)

procedure readstdin
        Declare buffer of size 32
        loop
                read(stdin, buffer, 1)
                write(stdout,buffer,1)
```