

# 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(argv[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)
```