

CS232 Operating Systems

Assignment 02: Introduction to System Calls

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1 Question No. 1

```
#include <stdio.h>
#include <string.h>
#include <stdlib.h>

int main(int argc, char *argv[])
{
    if (argc == 1) //Just ./mycat
    {
        do
        {
            char c = fgetc(stdin);

            if (feof(stdin))
            {
                break;
            }

            printf("%c", c);
        } while (1);
    }

    else if (argc >= 2)
    {
        if (strcmp(argv[1], "-n") != 0) //If there is -n
        {
            for (int i = 1; i < argc; i++)
            {
                FILE* fp;

                fp = fopen(argv[i], "r");
                if (fp == NULL)
                {
                    fprintf(stderr, "mycat: %s: No such file\n", argv[i]);
                    exit(1);
                }

                do
                {
                    char c = fgetc(fp);
```

```

        if (feof(fp))
        {
            break;
        }

        printf("%c", c);
    } while (1);

    fclose(fp);
}
}
else //If there is no -n
{
    int ind = 1;

    for (int i = 2; i < argc; i++)
    {
        FILE* fp;

        fp = fopen(argv[i], "r");
        if (fp == NULL)
        {
            fprintf(stderr, "mycat: %s: No such file\n", argv[i]);
            exit(1);
        }

        int filestrt = 1;

        do
        {
            char c = fgetc(fp);

            if (feof(fp))
            {
                break;
            }

            if (filestrt == 1)
            {
                printf("%d\t", ind);
                filestrt = 0;
            }

            printf("%c", c);

            if (c == '\n')
            {
                ind++;
                printf("%d\t", ind);
            }
        } while (1);

        fclose(fp);
    }
}

```

} }

2 Question No. 2

```
/**
Requirements:
    1. Cool prompt to prompt the user for input
    2.

**/

#include <stdlib.h>
#include <stdio.h>
#include <string.h>

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

    printf("\033c"); //Clear the terminal window

    printf("Greetings Master\n");
    // printf("Hey! Welcome to HUSh.\n"); // Welcome command
    char inps_by_user[100] = ""; //Contains user input

    const char prompt[] = "Master@HUSh: Your wish is my command$ "; //The co

    //main Loop: run as long as not asked to exit

    while (!(strcmp("exit", inps_by_user, 4) == 0))
    {
        printf("%s", prompt);
        scanf("%s", inps_by_user);

        //Whaeteur you intend to do with the input

        //Exit Protocol
        if (strcmp("exit", inps_by_user, 4) == 0)
        {
            printf("So be it, Master. I will wait for your return.\n");
        }
        else
        {
            printf("\nYou said: %s\n\n", inps_by_user);
        }
    }

    return 0;
}
```

3 Comments

loved it! A bit tough given the current course load but loved it all the same!

4 Appendix A: Makefile

```
compileall: mycat hush

mycat: Lec1_gp05_A2Q1_mycat.o
    clang Lec1_gp05_A2Q1_mycat.o -o mycat

hush: Lec1_gp05_A2Q2_Hush.o
    clang Lec1_gp05_A2Q2_Hush.o -o hush

Lec1_gp05_A2Q2_Hush.o: Lec1_gp05_A2Q2_Hush.c
    clang -c Lec1_gp05_A2Q2_Hush.c

Lec1_gp05_A2Q1_mycat.o: Lec1_gp05_A2Q1_mycat.c
    clang -c Lec1_gp05_A2Q1_mycat.c

wrap:
    tar -zcvf Lec1_gp05_A2.tar.gz ./Makefile ./*.c ./*.pdf

clean:
    rm *.o mycat hush
```