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Assignment No. 1

Grep

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

int main(int argc, char* argv[]) {
    if(argc != 3) {
        printf("You cannot enter more or less than 3 arguments.\n");
        return 0;
    }

    char* pat = argv[1];
    char* fn = argv[2];
    char line[5000];
    FILE* fp = fopen(fn, "r");

    if (fp == NULL) {
        perror("Error opening file");
        return 1;
    }

    while (fgets(line, sizeof(line), fp)) {
        char* match = strstr(line, pat);
        if (match) {
            *match = '\0';
            printf("%s", line);
            printf("\033[31m%s\033[0m", pat);
            printf("%s", match + strlen(pat));
        }
    }

    fclose(fp);
    return 0;
}
```

CP

```

#include<stdio.h>
#include<string.h>
#include<sys/types.h>
#include<sys/stat.h>
#include<fcntl.h>
#include<unistd.h>

int main(int argc, char* argv[]) {
    if(argc != 3) {
        printf("You can not enter more or less than 3 arguments.");
        return 0;
    }
    char* fn1;
    char* fn2;
    char line[50];
    int fp1;
    int fp2;
    int n;
    fn1 = argv[1];
    fn2 = argv[2];
    fp1 = open(fn1, O_RDONLY);
    fp2 = open(fn2, O_WRONLY);
    while ((n = read(fp1, line, 50)) > 0) {
        write(fp2, line, n);
    }
    close(fp2);
    close(fp1);
    return 0;
}

```

Assignment

```

#include<stdio.h>
#include<sys/types.h>
#include<sys/wait.h>
#include<unistd.h>
#include<stdlib.h>

```

```

int main() {
    int pid;
    int ppid;
    int fork_var;

```

```

int ch;

pid = getpid();
ppid = getppid();
printf("You are in a Parent Process\n");
printf("The PID of this process is %d\n", pid);
printf("The PID of parent process is %d\n", ppid);

do {
    printf("\nYou are welcome!!!\nChoose any one option:\n1. GREP Command\n2. CP
Command\n3. Exit\n");
    printf("Enter your choice: ");
    scanf("%d", &ch);

    switch(ch) {
    case 1: {
        fork_var = fork();
        if (fork_var == 0) {
            printf("You are in a child process.\n");
            pid = getpid();
            ppid = getppid();
            printf("The PID of child process is %d\n", pid);
            printf("The PID of parent process is %d\n", ppid);
            char pat[10];
            char fl[10];
            printf("Enter a file name: ");
            scanf("%s", fl);
            printf("Enter a pattern: ");
            scanf("%s", pat);
            printf("Running GREP command:\n");
            execlp("./122B1B235_grep", "122B1B235_grep", pat, fl, NULL);
            exit(1);
        } else if (fork_var > 0) {
            wait(NULL);
        } else {
            perror("Fork failed");
        }
        break;
    }
    case 2: {
        fork_var = fork();
        if (fork_var == 0) {
            printf("You are in a child process.\n");
            pid = getpid();

```

```

        ppid = getppid();
        printf("The PID of child process is %d\n", pid);
        printf("The PID of parent process is %d\n", ppid);
        char fl1[10];
        char fl2[10];
        printf("Enter a source file name: ");
        scanf("%s", fl1);
        printf("Enter a destination file name: ");
        scanf("%s", fl2);
        printf("Running CP command:\n");
        execlp("./122B1B235_cp", "122B1B235_cp", fl1, fl2, NULL);
        exit(1);
    } else if (fork_var > 0) {
        wait(NULL);
    } else {
        perror("Fork failed");
    }
    break;
}
case 3: {
    printf("Thank you!!!\n");
    exit(1);
}
default: {
    printf("You entered wrong option!!! Please try again.\n");
    break;
}
}
} while(ch != 3);

return 0;
}

```

Output :

```
stealth@LAPTOP-M9JA1NRR:~$ gcc -o 122B1B244 122B1B244.c
stealth@LAPTOP-M9JA1NRR:~$ ./122B1B244
```

```
You are in a Parent Process
The PID of this process is 857
The PID of parent process is 341
```

```
You are welcome!!!
```

```
Choose any one option:
```

1. GREP Command
2. CP Command
3. Exit

```
Enter your choice: 1
```

```
You are in a child process.
```

```
The PID of child process is 858
```

```
The PID of parent process is 857
```

```
Enter a file name: file1.txt
```

```
Enter a pattern: dd
```

```
Running GREP command with highlighted results:
```

```
dddd
```

```
Dkdddkdnifjvsdd
```

```
Ddjdd
```

```
Dkddd
```

```
You are welcome!!!
```

```
Choose any one option:
```

1. GREP Command
2. CP Command
3. Exit

```
Enter your choice: 2
```

```
You are in a child process.
```

```
The PID of child process is 859
```

```
The PID of parent process is 857
```

```
Enter a source file name: file1.txt
```

```
Enter a destination file name: file.txt
```

```
Running CP command:
```

```
You are welcome!!!
```

```
Choose any one option:
```

1. GREP Command
2. CP Command
3. Exit

```
You are welcome!!!  
Choose any one option:  
1. GREP Command  
2. CP Command  
3. Exit  
Enter your choice: 3  
Thank you!!!  
stealth@LAPTOP-M9JA1NRR:~$ cat file.xt  
cat: file.xt: No such file or directory  
stealth@LAPTOP-M9JA1NRR:~$ cat file.txt  
dddd  
Dkdddkdni fjvjsdd  
Ddjdd  
Dkddd  
d  
stealth@LAPTOP-M9JA1NRR:~$
```