

# Assignment - 2

## UNIX and Shell Programming

TOPIC: FILE SYSTEM COMMANDS

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1. Create two C files to print “**Hello World!**” in two different ways:
  - a. Program containing normal statement terminator - HelloWorld1.c.

```
rudra@DESKTOP-40986GA:~/MCA2023/Rudradeep_A_13$ vim HelloWorld1.c
#include <stdio.h>

int main() {
    printf("Hello World!\n");
    return 0;
}
```

- b. Program without any statement terminator - HelloWorld2.c.

```
rudra@DESKTOP-40986GA:~/MCA2023/Rudradeep_A_13$ vim HelloWorld2.c
#include <stdio.h>

int main() {
    printf("Hello World!\n")
    return 0
}
```

2. Display the contents of the files.

```
rudra@DESKTOP-40986GA:~/MCA2023/Rudradeep_A_13$ cat HelloWorld1.c
#include <stdio.h>

int main() {
    printf("Hello World!\n");
    return 0;
}
```

```
rudra@DESKTOP-40986GA:~/MCA2023/Rudradeep_A_13$ cat HelloWorld2.c
#include <stdio.h>

int main() {
    printf("Hello World!\n")
    return 0
}

rudra@DESKTOP-40986GA:~/MCA2023/Rudradeep_A_13$
```

- Concatenate the two files to a third file.

```
rudra@DESKTOP-40986GA:~/MCA2023/Rudradeep_A_13$ cat HelloWorld1.c HelloWorld2.c > CombinedHelloWorld.c
rudra@DESKTOP-40986GA:~/MCA2023/Rudradeep_A_13$
```

- Show the above file types.

```
rudra@DESKTOP-40986GA:~/MCA2023/Rudradeep_A_13$ file HelloWorld2.c
HelloWorld2.c: C source, ASCII text
rudra@DESKTOP-40986GA:~/MCA2023/Rudradeep_A_13$ file CombinedHelloWorld.c
CombinedHelloWorld.c: C source, ASCII text
rudra@DESKTOP-40986GA:~/MCA2023/Rudradeep_A_13$
```

- Copy all the files to the home directory in an interactive manner.

```
rudra@DESKTOP-40986GA:~/MCA2023/Rudradeep_A_13$ cp -i HelloWorld1.c HelloWorld2.c CombinedHelloWorld.c ~
cp: overwrite '/home/rudra/HelloWorld1.c'? y
cp: overwrite '/home/rudra/HelloWorld2.c'? y
cp: overwrite '/home/rudra/CombinedHelloWorld.c'? y
rudra@DESKTOP-40986GA:~/MCA2023/Rudradeep_A_13$
```

- Create a copy of the C file in TestA-1.

```
rudra@DESKTOP-40986GA:~/MCA2023/Rudradeep_A_13$ cp HelloWorld1.c TestA-1
rudra@DESKTOP-40986GA:~/MCA2023/Rudradeep_A_13$
```

- Copy the file to the home directory in an interactive manner.

```
rudra@DESKTOP-40986GA:~/MCA2023/Rudradeep_A_13/TestA-1$ cp -i HelloWorld1.c ~
cp: overwrite '/home/rudra/HelloWorld1.c'? y
rudra@DESKTOP-40986GA:~/MCA2023/Rudradeep_A_13/TestA-1$ ls HelloWorld1.c
HelloWorld1.c
rudra@DESKTOP-40986GA:~/MCA2023/Rudradeep_A_13/TestA-1$
```

- Remove the directories TestC & TestC-1.

```
rudra@DESKTOP-40986GA:~/MCA2023/Rudradeep_A_13$ rmdir TestC TestC-1
rudra@DESKTOP-40986GA:~/MCA2023/Rudradeep_A_13$ ls
CombinedHelloWorld.c HelloWorld1.c HelloWorld2.c TestA-1 Unix_File_System
rudra@DESKTOP-40986GA:~/MCA2023/Rudradeep_A_13$
```

- Delete the file C file from TestA-1.

```
rudra@DESKTOP-40986GA:~/MCA2023/Rudradeep_A_13/TestA-1$ ls
HelloWorld1.c TestC TestC-1
rudra@DESKTOP-40986GA:~/MCA2023/Rudradeep_A_13/TestA-1$ rm HelloWorld1.c
rudra@DESKTOP-40986GA:~/MCA2023/Rudradeep_A_13/TestA-1$ ls
TestC TestC-1
rudra@DESKTOP-40986GA:~/MCA2023/Rudradeep_A_13/TestA-1$
```

- Rename the text file in the home directory.

```
rudra@DESKTOP-40986GA:~$ vim a.txt
rudra@DESKTOP-40986GA:~$ mv a.txt new_a.txt
```

11. Create a C file for a menu driven calculator.

```
#include <stdio.h>
int main() {
    char op;
    double first, second;
    printf("Enter an operator (+, -, *, /): ");
    scanf("%c", &op);
    printf("Enter two operands: ");
    scanf("%lf %lf", &first, &second);

    switch (op) {
        case '+':
            printf("%.1lf + %.1lf = %.1lf", first, second, first + second);
            break;
        case '-':
            printf("%.1lf - %.1lf = %.1lf", first, second, first - second);
            break;
        case '*':
            printf("%.1lf * %.1lf = %.1lf", first, second, first * second);
            break;
        case '/':
            printf("%.1lf / %.1lf = %.1lf", first, second, first / second);
            break;
        default:
            printf("Error! operator is not correct");
    }

    return 0;
}
```

"calculator.c" 331, 987C 11.6.1 All

12. Show the C file in the paged manner using **more** and **less** commands.

```
hudson@DESKTOP-400000A:~/VCA2023/Audradeep_A_138$ more calculator.c
#include <stdio.h>
int main() {
    char op;
    double first, second;
    printf("Enter an operator (+, -, *, /): ");
    scanf("%c", &op);
    printf("Enter two operands: ");
    scanf("%lf %lf", &first, &second);

    switch (op) {
        case '+':
            printf("%.1lf + %.1lf = %.1lf", first, second, first + second);
            break;
        case '-':
            printf("%.1lf - %.1lf = %.1lf", first, second, first - second);
            break;
        case '*':
            printf("%.1lf * %.1lf = %.1lf", first, second, first * second);
            break;
        case '/':
            printf("%.1lf / %.1lf = %.1lf", first, second, first / second);
            break;
        default:
            printf("Error! operator is not correct");
    }

    return 0;
}
```

```
hudson@DESKTOP-400000A:~/VCA2023/Audradeep_A_138$ less calculator.c
#include <stdio.h>
int main() {
    char op;
    double first, second;
    printf("Enter an operator (+, -, *, /): ");
    scanf("%c", &op);
    printf("Enter two operands: ");
    scanf("%lf %lf", &first, &second);

    switch (op) {
        case '+':
            printf("%.1lf + %.1lf = %.1lf", first, second, first + second);
            break;
        case '-':
            printf("%.1lf - %.1lf = %.1lf", first, second, first - second);
            break;
        case '*':
            printf("%.1lf * %.1lf = %.1lf", first, second, first * second);
            break;
        case '/':
            printf("%.1lf / %.1lf = %.1lf", first, second, first / second);
            break;
        default:
            printf("Error! operator is not correct");
    }

    return 0;
}
```

calculator.c (EO)

13. Count the number of lines, words and characters separately.

```
rudra@DESKTOP-40986GA:~/MCA2023/Rudradeep_A_13$ wc -l calculator.c
31 calculator.c
rudra@DESKTOP-40986GA:~/MCA2023/Rudradeep_A_13$
rudra@DESKTOP-40986GA:~/MCA2023/Rudradeep_A_13$ wc -w calculator.c
93 calculator.c
rudra@DESKTOP-40986GA:~/MCA2023/Rudradeep_A_13$
rudra@DESKTOP-40986GA:~/MCA2023/Rudradeep_A_13$ wc -c calculator.c
987 calculator.c
rudra@DESKTOP-40986GA:~/MCA2023/Rudradeep_A_13$
```

14. Compare the two C files.

```
rudra@DESKTOP-40986GA:~/MCA2023/Rudradeep_A_13$ diff HelloWorld1.c HelloWorld2.c
1c1
< #include <stdio.h>
---
> include <stdio.h>
4,5c4,5
<     printf("Hello World!\n");
<     return 0;
---
>     printf("Hello World!\n")
>     return 0
rudra@DESKTOP-40986GA:~/MCA2023/Rudradeep_A_13$
```

15. Find what is common in two C files.

```
rudra@DESKTOP-40986GA:~/MCA2023/Rudradeep_A_13$ comm -12 <(sort HelloWorld1.c) <(sort HelloWorld2.c)
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