Assignment - 02
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.
   a. Program without any statement terminator → HelloWorld2.c.

Ans :

```
nandini@LAPTOP-F47RO73F:~/MCA2023/Monalisa_B_02$ ls
Unix_File_System
nandini@LAPTOP-F47RO73F:~/MCA2023/Monalisa_B_02$ mkdir Assignment1
nandini@LAPTOP-F47RO73F:~/MCA2023/Monalisa_B_02$ ls
Assignment1  Unix_File_System
nandini@LAPTOP-F47RO73F:~/MCA2023/Monalisa_B_02$ cd Assignment1
```

a)

```
nandini@LAPTOP-F47RO73F:~/MCA2023/Monalisa_B_02/Assignment1$ vim HelloWorld1.c
nandini@LAPTOP-F47RO73F:~/MCA2023/Monalisa_B_02/Assignment1$ gcc HelloWorld1.c -o HelloWorld1
nandini@LAPTOP-F47RO73F:~/MCA2023/Monalisa_B_02/Assignment1$ ./HelloWorld1
Hello World!
```

b)

```
nandini@LAPTOP-F47RO73F:~/MCA2023/Monalisa_B_02/Assignment1$ vim HelloWorld2.c
nandini@LAPTOP-F47RO73F:~/MCA2023/Monalisa_B_02/Assignment1$ gcc HelloWorld2.c -o HelloWorld2
nandini@LAPTOP-F47RO73F:~/MCA2023/Monalisa_B_02/Assignment1$ ./HelloWorld2
Hello World!
```

2. Display the contents of the files.

Ans :

```
nandini@LAPTOP-F47RO73F:~/MCA2023/Monalisa_B_02/Assignment1$ cat HelloWorld1.c
#include<stdio.h>
int main(){
        printf("Hello World!\n");
        return 0;
}
nandini@LAPTOP-F47RO73F:~/MCA2023/Monalisa_B_02/Assignment1$ cat HelloWorld2.c
#include<stdio.h>
int main(){
        if(printf("Hello World!\n"))
        return 0;
}
```

3. Concatenate the two files to a third file.

Ans :

```
nandini@LAPTOP-F47RO73F:~/MCA2023/Monalisa_B_02/Assignment1$ cat HelloWorld1.c HelloWorld2.c > Program.txt
nandini@LAPTOP-F47RO73F:~/MCA2023/Monalisa_B_02/Assignment1$ ls
HelloWorld1  HelloWorld1.c  HelloWorld2  HelloWorld2.c  Program.txt
nandini@LAPTOP-F47RO73F:~/MCA2023/Monalisa_B_02/Assignment1$ cat Program.txt
#include<stdio.h>
int main(){
        printf("Hello World!\n");
        return 0;
}
#include<stdio.h>
int main(){
        if(printf("Hello World!\n"))
        return 0;
}
```

4. Show the above file types.

Ans :

```
nandini@LAPTOP-F47RO73F:~/MCA2023/Monalisa_B_02/Assignment1$ file HelloWorld1.c
HelloWorld1.c: C source, ASCII text
nandini@LAPTOP-F47RO73F:~/MCA2023/Monalisa_B_02/Assignment1$ file HelloWorld2.c
HelloWorld2.c: C source, ASCII text
nandini@LAPTOP-F47RO73F:~/MCA2023/Monalisa_B_02/Assignment1$ file Program.txt
Program.txt: C source, ASCII text
```

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

Ans :

```
nandini@LAPTOP-F47RO73F:~/MCA2023/Monalisa_B_02/Assignment1$ cp -i HelloWorld1.c HelloWorld2.c Program.txt ~
```

```
nandini@LAPTOP-F47RO73F:~/MCA2023/Monalisa_B_02/Assignment1$ cd ~
nandini@LAPTOP-F47RO73F:~$ ls
0         HelloWorld1.c  NAN          TestB           assignment    classTEST3.sh  classwork3.sh  classwork7.sh  first          palindrome.sh    saha.txt    who.sh
BCAALPHA  HelloWorld2.c  Nandini.txt  TestC           class         classwork      classwork4.sh  command.sh     hello_world.py palindrome2.sh   sorting.sh
BCABETA   MCA2023        Program.txt  Unix_File_System classTEST1.sh classwork1.sh classwork5.sh  data           loggedin.sh    palindromeNum.sh users.sh
Cprog.sh  Monalisa.txt   TestA        abc.txt         classTEST2.sh  classwork2.sh  classwork6.sh  fileType.sh    monalisa.txt   prime.sh         wfile
```

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

Ans :

```
nandini@LAPTOP-F47RO73F:~/MCA2023/Monalisa_B_02/Assignment1$ cp HelloWorld1.c ~/MCA2023/Monalisa_B_02/Unix_File_System/TestA/TestA-1/
nandini@LAPTOP-F47RO73F:~/MCA2023/Monalisa_B_02/Assignment1$ ls ~/MCA2023/Monalisa_B_02/Unix_File_System/TestA/TestA-1/
HelloWorld1.c
```

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

Ans :

```
nandini@LAPTOP-F47RO73F:~/MCA2023/Monalisa_B_02/Assignment1$ cd ~/MCA2023/Monalisa_B_02/Unix_File_System/TestA/TestA-1/
nandini@LAPTOP-F47RO73F:~/MCA2023/Monalisa_B_02/Unix_File_System/TestA/TestA-1$ ls
HelloWorld1.c
nandini@LAPTOP-F47RO73F:~/MCA2023/Monalisa_B_02/Unix_File_System/TestA/TestA-1$ cp -i HelloWorld1.c ~
cp: overwrite '/home/nandini/HelloWorld1.c'? y
nandini@LAPTOP-F47RO73F:~/MCA2023/Monalisa_B_02/Unix_File_System/TestA/TestA-1$ cd ~
nandini@LAPTOP-F47RO73F:~$ ls
0         HelloWorld1.c  NAN          TestB           assignment    classTEST3.sh  classwork3.sh  classwork7.sh  first          palindrome.sh    saha.txt    who.sh
BCAALPHA  HelloWorld2.c  Nandini.txt  TestC           class         classwork      classwork4.sh  command.sh     hello_world.py palindrome2.sh   sorting.sh
BCABETA   MCA2023        Program.txt  Unix_File_System classTEST1.sh classwork1.sh classwork5.sh  data           loggedin.sh    palindromeNum.sh users.sh
Cprog.sh  Monalisa.txt   TestA        abc.txt         classTEST2.sh  classwork2.sh  classwork6.sh  fileType.sh    monalisa.txt   prime.sh         wfile
nandini@LAPTOP-F47RO73F:~$
```

8. Remove the directories TestC & TestC-1.

Ans :

```
nandini@LAPTOP-F47RO73F:~$ cd ~/MCA2023/Monalisa_B_02/Unix_File_System/TestC
nandini@LAPTOP-F47RO73F:~/MCA2023/Monalisa_B_02/Unix_File_System/TestC$ ls
TestC-1
```

```
nandini@LAPTOP-F47RO73F:~/MCA2023/Monalisa_B_02/Unix_File_System/TestC$ rmdir TestC-1
nandini@LAPTOP-F47RO73F:~/MCA2023/Monalisa_B_02/Unix_File_System/TestC$ cd ..
nandini@LAPTOP-F47RO73F:~/MCA2023/Monalisa_B_02/Unix_File_System$ rmdir TestC
nandini@LAPTOP-F47RO73F:~/MCA2023/Monalisa_B_02/Unix_File_System$ ls
TestA  TestB
```

9. Delete the file C file from TestA-1.

Ans :

```
nandini@LAPTOP-F47RO73F:~/MCA2023/Monalisa_B_02/Unix_File_System$ cd TestA/TestA-1
nandini@LAPTOP-F47RO73F:~/MCA2023/Monalisa_B_02/Unix_File_System/TestA/TestA-1$ ls
HelloWorld1.c
nandini@LAPTOP-F47RO73F:~/MCA2023/Monalisa_B_02/Unix_File_System/TestA/TestA-1$ rm HelloWorld1.c
nandini@LAPTOP-F47RO73F:~/MCA2023/Monalisa_B_02/Unix_File_System/TestA/TestA-1$ ls
nandini@LAPTOP-F47RO73F:~/MCA2023/Monalisa_B_02/Unix_File_System/TestA/TestA-1$
```

10. Rename the text file in the home directory.

Ans :

```
nandini@LAPTOP-F47RO73F:~/MCA2023/Monalisa_B_02/Unix_File_System/TestA/TestA-1$ cd ~
nandini@LAPTOP-F47RO73F:~$ ls
0            HelloWorld1.c  NAN          TestB            assignment     classTEST3.sh  classwork3.sh  classwork7.sh  first          palindrome.sh     saha.txt    who.sh
BCAALPHA     HelloWorld2.c  Nandini.txt  TestC            class          classwork      classwork4.sh  command.sh     hello_world.py palindrome2.sh    sorting.sh
BCABETA      MCA2023        Program.txt  Unix_File_System classTEST1.sh  classwork1.sh  classwork5.sh  data           loggedin.sh    palindromeNum.sh  users.sh
Cprog.sh     Monalisa.txt   TestA        abc.txt          classTEST2.sh  classwork2.sh  classwork6.sh  fileType.sh    monalisa.txt   prime.sh          wfile
nandini@LAPTOP-F47RO73F:~$ mv Program.txt C_Program.txt
nandini@LAPTOP-F47RO73F:~$ ls
0              HelloWorld1.c  Nandini.txt      abc.txt       classTEST3.sh  classwork4.sh  data           monalisa.txt     saha.txt
BCAALPHA       HelloWorld2.c  TestA            assignment    classwork      classwork5.sh  fileType.sh    palindrome.sh    sorting.sh
BCABETA        MCA2023        TestB            class         classwork1.sh  classwork6.sh  first          palindrome2.sh   users.sh
C_Program.txt  Monalisa.txt   TestC            classTEST1.sh classwork2.sh  classwork7.sh  hello_world.py palindromeNum.sh wfile
Cprog.sh       NAN            Unix_File_System classTEST2.sh classwork3.sh  command.sh     loggedin.sh    prime.sh         who.sh
nandini@LAPTOP-F47RO73F:~$
```

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

Ans :

```
nandini@LAPTOP-F47RO73F:~/MCA2023/Monalisa_B_02/Assignment1$ vim Calculator.c
nandini@LAPTOP-F47RO73F:~/MCA2023/Monalisa_B_02/Assignment1$ gcc Calculator.c -o Calculator
nandini@LAPTOP-F47RO73F:~/MCA2023/Monalisa_B_02/Assignment1$ ./Calculator

Menu :
1.Addition 2.Substraction 3.Multiplication 4.Division 5.Modulo 6.Exit
Enter your choice :
1
Enter number1 and number2 : 10
12
Addition : 22
Menu :
1.Addition 2.Substraction 3.Multiplication 4.Division 5.Modulo 6.Exit
Enter your choice :
5
Enter number1 and number2 : 10
5
Modulo : 0
Menu :
1.Addition 2.Substraction 3.Multiplication 4.Division 5.Modulo 6.Exit
Enter your choice :
6
nandini@LAPTOP-F47RO73F:~/MCA2023/Monalisa_B_02/Assignment1$
```

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

Ans :

```
nandini@LAPTOP-F47RO73F:~/MCA2023/Monalisa_B_02/Assignment1$ more Calculator.c
#include<stdio.h>
#include<stdlib.h>

int main(){
        int choice, num1, num2;
        while(1){
                printf("\nMenu : \n1.Addition 2.Substraction 3.Multiplication 4.Division 5.Modulo 6.Exit\n");
                printf("Enter your choice : \n");
                scanf("%d", &choice);
                switch(choice){
                        case 1: printf("Enter number1 and number2 : ");
                                scanf("%d %d", &num1, &num2);
                                printf("Addition : %d", num1+num2);
                                break;
                        case 2: printf("Enter number1 and number2 : ");
                                scanf("%d %d", &num1, &num2);
                                printf("Substraction : %d", num1-num2);
                                break;
                        case 3: printf("Enter number1 and number2 : ");
                                scanf("%d %d", &num1, &num2);
                                printf("Multiplication : %d", num1*num2);
                                break;
                        case 4: printf("Enter number1 and number2 : ");
                                scanf("%d %d", &num1, &num2);
                                printf("Division : %d", num1/num2);
                                break;
                        case 5: printf("Enter number1 and number2 : ");
                                scanf("%d %d", &num1, &num2);
                                printf("Modulo : %d", num1%num2);
                                break;
                        case 6:
                                exit(0);
                        default :
                                printf("Invalid choice.\n");
                                break;

                }
        }
        return 0;
}
```

```
nandini@LAPTOP-F47RO73F:~/MCA2023/Monalisa_B_02/Assignment1$ less Calculator.c
```

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

int main(){
        int choice, num1, num2;
        while(1){
                printf("\nMenu : \n1.Addition 2.Substraction 3.Multiplication 4.Division 5.Modulo 6.Exit\n");
                printf("Enter your choice : \n");
                scanf("%d", &choice);
                switch(choice){
                        case 1: printf("Enter number1 and number2 : ");
                                scanf("%d %d", &num1, &num2);
                                printf("Addition : %d", num1+num2);
                                break;
                        case 2: printf("Enter number1 and number2 : ");
                                scanf("%d %d", &num1, &num2);
                                printf("Substraction : %d", num1-num2);
                                break;
                        case 3: printf("Enter number1 and number2 : ");
                                scanf("%d %d", &num1, &num2);
                                printf("Multiplication : %d", num1*num2);
                                break;
                        case 4: printf("Enter number1 and number2 : ");
                                scanf("%d %d", &num1, &num2);
                                printf("Division : %d", num1/num2);
                                break;
                        case 5: printf("Enter number1 and number2 : ");
                                scanf("%d %d", &num1, &num2);
                                printf("Modulo : %d", num1%num2);
                                break;
                        case 6:
                                exit(0);
                        default :
                                printf("Invalid choice.\n");
                                break;

                }
        }
        return 0;
}
Calculator.c (END)
```

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

```
nandini@LAPTOP-F47RO73F:~/MCA2023/Monalisa_B_02/Assignment1$ wc Calculator.c
  41  123 1167 Calculator.c
```

14. Compare the two C files.
    Ans:

```
nandini@LAPTOP-F47RO73F:~/MCA2023/Monalisa_B_02/Assignment1$ cmp HelloWorld1.c HelloWorld2.c
HelloWorld1.c HelloWorld2.c differ: byte 32, line 3
```

15. Find what is common in two C files.
    Ans:

```
nandini@LAPTOP-F47RO73F:~/MCA2023/Monalisa_B_02/Assignment1$ comm HelloWorld1.c HelloWorld2.c
                #include<stdio.h>
                int main(){
                if(printf("Hello World!\n"))
        printf("Hello World!\n");
                        return 0;
                }
```

16. Find the difference in two C files.
    Ans:

```
nandini@LAPTOP-F47RO73F:~/MCA2023/Monalisa_B_02/Assignment1$ diff HelloWorld1.c HelloWorld2.c
3c3
<       printf("Hello World!\n");
---
>       if(printf("Hello World!\n"))
```