

Assignment – 2

UNIX and Shell Programming

TOPIC: FILE SYSTEM COMMANDS

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MCA SEM-3

SECTION A

Roll Number: 22

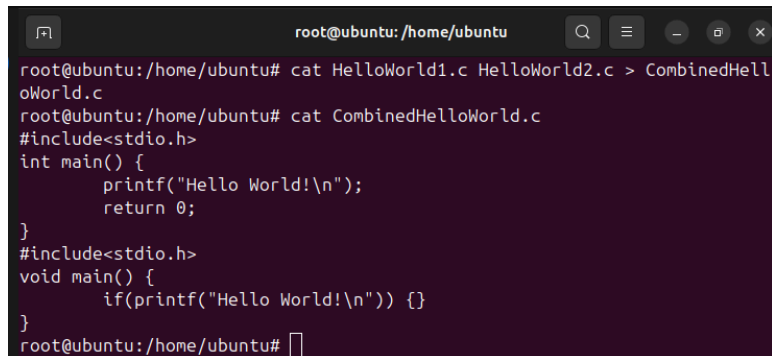
1. Create two C files to print “**Hello World!**” in two different ways:
 - a. Program containing normal statement terminator » HelloWorld1.c.
 - b. Program without any statement terminator » HelloWorld2.c.

```
root@ubuntu: /home/ubuntu
root@ubuntu:/home/ubuntu# gcc HelloWorld1.c
root@ubuntu:/home/ubuntu# ./a.out
Hello World!
root@ubuntu:/home/ubuntu# gcc HelloWorld2.c
root@ubuntu:/home/ubuntu# ./a.out
Hello World!
root@ubuntu:/home/ubuntu#
```

2. Display the contents of the files.

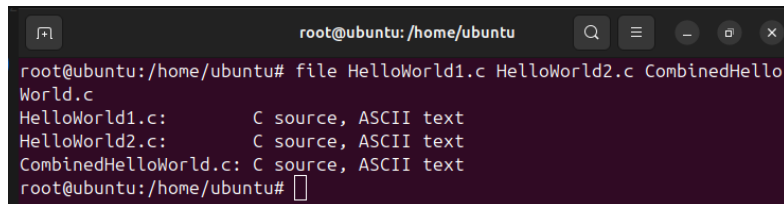
```
root@ubuntu: /home/ubuntu
root@ubuntu:/home/ubuntu# cat HelloWorld1.c HelloWorld2.c
#include<stdio.h>
int main() {
    printf("Hello World!\n");
    return 0;
}
#include<stdio.h>
void main() {
    if(printf("Hello World!\n")) {}
}
root@ubuntu:/home/ubuntu#
```

3. Concatenate the two files to a third file.



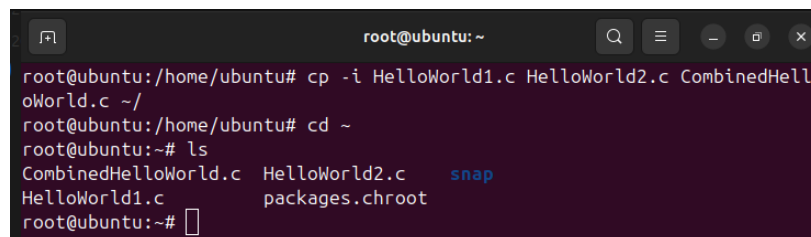
```
root@ubuntu: /home/ubuntu
root@ubuntu:/home/ubuntu# cat HelloWorld1.c HelloWorld2.c > CombinedHelloWorld.c
root@ubuntu:/home/ubuntu# cat CombinedHelloWorld.c
#include<stdio.h>
int main() {
    printf("Hello World!\n");
    return 0;
}
#include<stdio.h>
void main() {
    if(printf("Hello World!\n")) {}
}
root@ubuntu:/home/ubuntu#
```

4. Show the above file types.



```
root@ubuntu: /home/ubuntu
root@ubuntu:/home/ubuntu# file HelloWorld1.c HelloWorld2.c CombinedHelloWorld.c
HelloWorld1.c:      C source, ASCII text
HelloWorld2.c:      C source, ASCII text
CombinedHelloWorld.c: C source, ASCII text
root@ubuntu:/home/ubuntu#
```

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



```
root@ubuntu: ~
root@ubuntu:/home/ubuntu# cp -i HelloWorld1.c HelloWorld2.c CombinedHelloWorld.c ~/
root@ubuntu:/home/ubuntu# cd ~
root@ubuntu:~# ls
CombinedHelloWorld.c  HelloWorld2.c  snap
HelloWorld1.c         packages.chroot
root@ubuntu:~#
```

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

```
root@ubuntu: ~/MCA2024/Devesh_A_22/Unix_File_System/Te...
root@ubuntu:~/MCA2024/Devesh_A_22/Unix_File_System# cd ..
root@ubuntu:~/MCA2024/Devesh_A_22# cd ..
root@ubuntu:~/MCA2024# ls
Devesh_A_22
root@ubuntu:~/MCA2024# cd ..
root@ubuntu:~# cd ~
root@ubuntu:~# ls
CombinedHelloWorld.c  HelloWorld2.c  packages.chroot
HelloWorld1.c          MCA2024       snap
root@ubuntu:~# cp HelloWorld1.c ./MCA2024/Devesh_A_22/Unix_File_System/TestA/TestA-1/
root@ubuntu:~# cd MCA2024/Devesh_A_22/Unix_File_System/TestA/TestA-1
root@ubuntu:~/MCA2024/Devesh_A_22/Unix_File_System/TestA/TestA-1# ls
HelloWorld1.c
root@ubuntu:~/MCA2024/Devesh_A_22/Unix_File_System/TestA/TestA-1#
```

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

```
root@ubuntu:~/MCA2024/Devesh_A_22/Unix_File_System/Te...
root@ubuntu:~/MCA2024/Devesh_A_22/Unix_File_System/TestA/TestA-1# cp -i HelloWorld1.c ~/
cp: overwrite '/root/HelloWorld1.c'? y
root@ubuntu:~/MCA2024/Devesh_A_22/Unix_File_System/TestA/TestA-1#
```

- Remove the directories TestC & TestC-1.

```
root@ubuntu: ~/MCA2024/Devesh_A_22/Unix_File_System
root@ubuntu:~/MCA2024/Devesh_A_22/Unix_File_System# cd TestC
root@ubuntu:~/MCA2024/Devesh_A_22/Unix_File_System/TestC# ls
TestC-1
root@ubuntu:~/MCA2024/Devesh_A_22/Unix_File_System/TestC# rmdir TestC-1/
root@ubuntu:~/MCA2024/Devesh_A_22/Unix_File_System/TestC# ls
root@ubuntu:~/MCA2024/Devesh_A_22/Unix_File_System/TestC# cd ..
root@ubuntu:~/MCA2024/Devesh_A_22/Unix_File_System# rmdir TestC
root@ubuntu:~/MCA2024/Devesh_A_22/Unix_File_System# ls
TestA  TestB
root@ubuntu:~/MCA2024/Devesh_A_22/Unix_File_System#
```

- Delete the file C file from TestA-1.

```
root@ubuntu: ~/MCA2024/Devesh_A_22/Unix_File_System/Te...
root@ubuntu:~/MCA2024/Devesh_A_22/Unix_File_System/TestA/TestA-1# rm HelloWorld1.c
root@ubuntu:~/MCA2024/Devesh_A_22/Unix_File_System/TestA/TestA-1#
```

- Rename the text file in the home directory.

```
root@ubuntu: ~  
root@ubuntu:~# ls  
CombinedHelloWorld.c HelloWorld2.c packages.chroot  
HelloWorld1.c MCA2024 snap  
root@ubuntu:~# mv ~/HelloWorld1.c ~/HelloWorld1_Renamed.c  
root@ubuntu:~# ls  
CombinedHelloWorld.c HelloWorld2.c packages.chroot  
HelloWorld1_Renamed.c MCA2024 snap  
root@ubuntu:~#
```

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

```
root@ubuntu: ~  
root@ubuntu:~# ls  
calculator.c HelloWorld1_Renamed.c MCA2024 snap  
CombinedHelloWorld.c HelloWorld2.c packages.chroot  
root@ubuntu:~# head calculator.c  
#include <stdio.h>  
  
void main() {  
    int num1,num2,opt;  
    printf("Enter the first Integer :");  
    scanf("%d",&num1);  
    printf("Enter the second Integer :");  
    scanf("%d",&num2);  
    printf("\nInput your option : \n");  
    printf("1-Addition.\n2-Subtraction.\n3-Multiplication.\n4-Division.\n5-Exit.\n");  
root@ubuntu:~#
```

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

```

root@ubuntu:~# more calculator.c
#include <stdio.h>

void main() {
    int num1,num2,opt;
    printf("Enter the first Integer :");
    scanf("%d",&num1);
    printf("Enter the second Integer :");
    scanf("%d",&num2);
    printf("\nInput your option :\n");
    printf("1-Addition.\n2-Subtraction.\n3-Multiplication.\n4-Division.\n5
-Exit.\n");
    scanf("%d",&opt);

    switch(opt) {
        case 1:
            printf("The Addition of  %d and %d is: %d\n",num1,num2,num1+num2);
            break;

        case 2:
            printf("The Subtraction of %d  and %d is: %d\n",num1,num2,num1-num
2);
            break;

```

```

        case 3:
            printf("The Multiplication of %d  and %d is: %d\n",num1,num2,num1*
num2);
            break;

        case 4:
            if(num2==0) {
                printf("The second integer is zero. Divide by zero.\n");
            } else {
                printf("The Division of %d  and %d is : %d\n",num1,num2,num1/num
2);
            }
            break;

        case 5:
            break;

        default:
            printf("Input correct option\n");
            break;
    }
}
(END)

```

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

```

root@ubuntu:~# wc -l calculator.c
41 calculator.c
root@ubuntu:~# wc -w calculator.c
96 calculator.c
root@ubuntu:~# wc -c calculator.c
954 calculator.c
root@ubuntu:~#

```

14. Compare the two C files.

```
root@ubuntu: ~  
root@ubuntu:~# diff HelloWorld1_Renamed.c HelloWorld2.c  
2,4c2,3  
< int main() {  
<     printf("Hello World!\n");  
<     return 0;  
---  
> void main() {  
>     if(printf("Hello World!\n")) {}  
root@ubuntu:~#
```

15. Find what is common in two C files.

```
root@ubuntu: ~  
root@ubuntu:~# comm -12 < (sort HelloWorld1_Renamed.c) < (sort HelloWorld2.c)  
bash: syntax error near unexpected token `('  
root@ubuntu:~#
```

16. Find the difference in two C files.

```
root@ubuntu: ~  
root@ubuntu:~# diff HelloWorld1_Renamed.c HelloWorld2.c  
2,4c2,3  
< int main() {  
<     printf("Hello World!\n");  
<     return 0;  
---  
> void main() {  
>     if(printf("Hello World!\n")) {}  
root@ubuntu:~#
```