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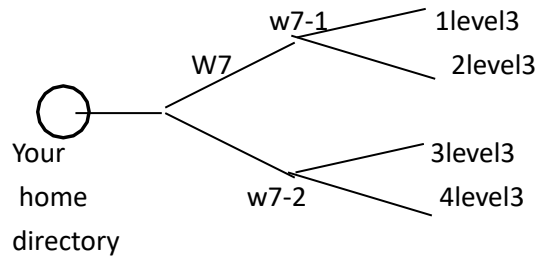
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Word Count (Where Required):

I confirm that I understand my coursework needs to be submitted online via MST Classroom under the relevant module page before the deadline in order for my assignment to be accepted and marked. I am fully aware that late submissions will be treated as non-submission and a mark of zero will be awarded

Practice in using UNIX utilities:

- 1) Create the directory structure presented in the figure below. Use **mkdir** command and relative pathnames from your home directory. Try both: no option and **-p** option, for the command.



```
anshu@DESKTOP-M5IKQ09: ~$  
anshu@DESKTOP-M5IKQ09: ~$ cd  
anshu@DESKTOP-M5IKQ09: ~$ mkdir -p w7/w7-1/{1level3,2level3,3level3}  
anshu@DESKTOP-M5IKQ09: ~$ mkdir -p w7/w7-2/4level3  
anshu@DESKTOP-M5IKQ09: ~$ tree w7  
w7  
├── w7-1  
│   ├── 1level3  
│   ├── 2level3  
│   └── 3level3  
└── w7-2  
    └── 4level3  
  
7 directories, 0 files  
anshu@DESKTOP-M5IKQ09: ~$ |
```

2. Change to the **1level3** directory by one step using a relative pathname

```
anshu@DESKTOP-M5IKQ09: ~$ cd w7/w7-1/1level3  
anshu@DESKTOP-M5IKQ09: ~/w7/w7-1/1level3$ |
```

3. Practice in changing directories in your directory structure by one command using relative pathnames, e.g., from **1level3** to **2level3**, from **2level3** to **4level3**, from **4level3** to **W7**, etc. Use names of parent and child directories (‘.’ and ‘..’) as well.

```
anshu@DESKTOP-M5IKQ09:~/w7/w7-1$ cd ~/w7
anshu@DESKTOP-M5IKQ09:~/w7$ cd w7-1/3level3
anshu@DESKTOP-M5IKQ09:~/w7/w7-1/3level3$ cd ~
anshu@DESKTOP-M5IKQ09:~$ cd ~w7/w7-1/1level3
-bash: cd: ~w7/w7-1/1level3: No such file or directory
anshu@DESKTOP-M5IKQ09:~$ cd ~/w7/w7-1/1level3
anshu@DESKTOP-M5IKQ09:~/w7/w7-1/1level3$ |
```

4. Change to **1level3** and create a text file by any tool (e.g., by **cat** or **cal** like last tutorial).

```
anshu@DESKTOP-M5IKQ09:~/w7/w7-1/1level3$ cat > myfile.txt
This is my first file in 1level3.
anshu@DESKTOP-M5IKQ09:~/w7/w7-1/1level3$ ls
myfile.txt
anshu@DESKTOP-M5IKQ09:~/w7/w7-1/1level3$
```

5. Copy this text file from **1level3** to **1level3** (with the name **file1**), **2level3**, and to **3level3** changing its name. Show that there are these files in corresponding directories.

```
anshu@DESKTOP-M5IKQ09:~/w7/w7-1/1level3$ cp myfile.txt file1
anshu@DESKTOP-M5IKQ09:~/w7/w7-1/1level3$ cp myfile.txt ../2level3/renamed_file2.txt
anshu@DESKTOP-M5IKQ09:~/w7/w7-1/1level3$ cp myfile.txt ../3level3/renamed_file3.txt
```

6. Move this file to **4level3**. Show that there is this file in **4level3** and there is not in **1level3**.

```
anshu@DESKTOP-M5IKQ09:~/w7/w7-1/1level3$ mv file1 ../../w7-2/4level3
anshu@DESKTOP-M5IKQ09:~/w7/w7-1/1level3$ ls ../../w7-2/4level3
file1
anshu@DESKTOP-M5IKQ09:~/w7/w7-1/1level3$ ls
myfile.txt
anshu@DESKTOP-M5IKQ09:~/w7/w7-1/1level3$
```

7. Print the following texts each in one **echo** or **printf** command:

- Hello! I can do it
- $5 > (20 : 8) < (30 * 2)$
- Line 1 Line 2
- a-b, A-B, -, +, <, >, #, \$, %, &.

```
anshu@DESKTOP-M5IKQ09:~/w7/w7-1/1level3$ echo "Hello! I can do it"
Hello! I can do it
anshu@DESKTOP-M5IKQ09:~/w7/w7-1/1level3$ echo "5 > (20: 8) < (30 * 2)"
5 > (20: 8) < (30 * 2)
anshu@DESKTOP-M5IKQ09:~/w7/w7-1/1level3$ echo "Line 1 Line 2 a-b, A-B, -, +, <, >, #, $, %, &."
Line 1 Line 2 a-b, A-B, -, +, <, >, #, $, %, &.
anshu@DESKTOP-M5IKQ09:~/w7/w7-1/1level3$
```

8. Give the **ls** command (without options and with **a**, **d**, **g**, **l**, **R** options) in home directory, **w7**, **w7-1**, and **1level3** directories. Explain for yourself the results received.

```
anshu@DESKTOP-M5IKQ09: ~ × + v
anshu@DESKTOP-M5IKQ09:~/w7/w7-1/1level3$ ls
myfile.txt
anshu@DESKTOP-M5IKQ09:~/w7/w7-1/1level3$ ls -a
.  ..  myfile.txt
anshu@DESKTOP-M5IKQ09:~/w7/w7-1/1level3$ ls -d */
ls: cannot access '*/': No such file or directory
anshu@DESKTOP-M5IKQ09:~/w7/w7-1/1level3$ ls -d
.
anshu@DESKTOP-M5IKQ09:~/w7/w7-1/1level3$ ls -g
total 4
-rw-r--r-- 1 anshu 34 Dec 16 09:36 myfile.txt
anshu@DESKTOP-M5IKQ09:~/w7/w7-1/1level3$ ls -l
total 4
-rw-r--r-- 1 anshu anshu 34 Dec 16 09:36 myfile.txt
anshu@DESKTOP-M5IKQ09:~/w7/w7-1/1level3$ ls -R
.:
myfile.txt
anshu@DESKTOP-M5IKQ09:~/w7/w7-1/1level3$ cd ~/w7
anshu@DESKTOP-M5IKQ09:~/w7$ ls
4level3  w7-1  w7-2
anshu@DESKTOP-M5IKQ09:~/w7$ ls -a
.  ..  4level3  w7-1  w7-2
anshu@DESKTOP-M5IKQ09:~/w7$ ls -d */
4level3/  w7-1/  w7-2/
anshu@DESKTOP-M5IKQ09:~/w7$ ls -g
total 12
drwxr-xr-x 2 anshu 4096 Dec 16 09:29 4level3
drwxr-xr-x 5 anshu 4096 Dec 16 09:15 w7-1
drwxr-xr-x 3 anshu 4096 Dec 16 09:17 w7-2
anshu@DESKTOP-M5IKQ09:~/w7$ ls -l
total 12
drwxr-xr-x 2 anshu anshu 4096 Dec 16 09:29 4level3
drwxr-xr-x 5 anshu anshu 4096 Dec 16 09:15 w7-1
```

```
drwxr-xr-x 3 anshu anshu 4096 Dec 16 09:17 w7-2
anshu@DESKTOP-M5IKQ09:~/w7$ ls -R
.:
4level3  w7-1  w7-2

./4level3:

./w7-1:
1level3  2level3  3level3

./w7-1/1level3:
myfile.txt

./w7-1/2level3:
renamed_file2.txt

./w7-1/3level3:
renamed_file3.txt

./w7-2:
4level3

./w7-2/4level3:
file1
anshu@DESKTOP-M5IKQ09:~/w7$ cd ~/w7/w7-1
anshu@DESKTOP-M5IKQ09:~/w7/w7-1$ ls
1level3  2level3  3level3
anshu@DESKTOP-M5IKQ09:~/w7/w7-1$ ls -a
.  ..  1level3  2level3  3level3
anshu@DESKTOP-M5IKQ09:~/w7/w7-1$ ls -d */
1level3/  2level3/  3level3/
anshu@DESKTOP-M5IKQ09:~/w7/w7-1$ ls -g
total 12
```

```

drwxr-xr-x 2 anshu 4096 Dec 16 09:45 1level3
drwxr-xr-x 2 anshu 4096 Dec 16 09:39 2level3
drwxr-xr-x 2 anshu 4096 Dec 16 09:39 3level3
anshu@DESKTOP-M5IKQ09:~/w7/w7-1$ ls -l
total 12
drwxr-xr-x 2 anshu anshu 4096 Dec 16 09:45 1level3
drwxr-xr-x 2 anshu anshu 4096 Dec 16 09:39 2level3
drwxr-xr-x 2 anshu anshu 4096 Dec 16 09:39 3level3
anshu@DESKTOP-M5IKQ09:~/w7/w7-1$ ls -R
.:
1level3 2level3 3level3

./1level3:
myfile.txt

./2level3:
renamed_file2.txt

./3level3:
renamed_file3.txt
anshu@DESKTOP-M5IKQ09:~/w7/w7-1$ cd ~/w7/w7-1/1level3
anshu@DESKTOP-M5IKQ09:~/w7/w7-1/1level3$ ls
myfile.txt
anshu@DESKTOP-M5IKQ09:~/w7/w7-1/1level3$ ls -a
.  ..  myfile.txt
anshu@DESKTOP-M5IKQ09:~/w7/w7-1/1level3$ ls -d */
ls: cannot access '*/': No such file or directory
anshu@DESKTOP-M5IKQ09:~/w7/w7-1/1level3$ mkdir dir1 dir2
anshu@DESKTOP-M5IKQ09:~/w7/w7-1/1level3$ ls -d */
dir1/  dir2/
anshu@DESKTOP-M5IKQ09:~/w7/w7-1/1level3$ ls -g
total 12
drwxr-xr-x 2 anshu 4096 Dec 16 10:14 dir1

```

```

drwxr-xr-x 2 anshu anshu 4096 Dec 16 10:14 dir2
-rw-r--r-- 1 anshu anshu 34 Dec 16 09:36 myfile.txt
anshu@DESKTOP-M5IKQ09:~/w7/w7-1/1level3$ ls -R
.:
dir1  dir2  myfile.txt

./dir1:

./dir2:
anshu@DESKTOP-M5IKQ09:~/w7/w7-1/1level3$ |

```

9. Change to the **W7** directory. Remove the directory files **w7-2**, **3level-3**, **4level3** and all ordinary files in them. Use the option **-i** of the **rm** and **rmdir** commands. Show that there are not these ordinary and directory files in your file structure.

```
anshu@DESKTOP-M5IKQ09:~/w7$ cd ~/w7
anshu@DESKTOP-M5IKQ09:~/w7$ ls
3level-3  4level3  w7-1  w7-2
anshu@DESKTOP-M5IKQ09:~/w7$ rm -ri w7-2
rm -ri 3level-3
rm -ri 4level3
rm: remove directory 'w7-2'? y
rm: remove directory '3level-3'? y
rm: remove directory '4level3'? y
anshu@DESKTOP-M5IKQ09:~/w7$ ls
w7-1
anshu@DESKTOP-M5IKQ09:~/w7$ |
```

10. Change to **w7-1**.
- Display access permissions for the file **file1** in **1level3**.
 - Remove all access permissions for this file.
 - Display access permissions for this file.
 - Try to read this file using any utility (e.g., **cat**).
 - Try to write into this file using any utility (e.g., **cat** with the sign **>> – append**).
 - Add read and write access permissions for yourself for this file.
 - Display access permissions for this file.
 - Try to read this file using any utility.
 - Try to write into this file using any utility.

```

anshu@DESKTOP-M5IKQ09:~/w7/w7-1/1level3$ cd ~/w7/w7-1
anshu@DESKTOP-M5IKQ09:~/w7/w7-1$ ls -l 1level3/file1
-rw-r--r-- 1 anshu anshu 0 Dec 19 18:35 1level3/file1
anshu@DESKTOP-M5IKQ09:~/w7/w7-1$ chmod 000 1level3/file1
anshu@DESKTOP-M5IKQ09:~/w7/w7-1$ ls -l 1level3/file1
----- 1 anshu anshu 0 Dec 19 18:35 1level3/file1
anshu@DESKTOP-M5IKQ09:~/w7/w7-1$ cat 1level3/file1
cat: 1level3/file1: Permission denied
anshu@DESKTOP-M5IKQ09:~/w7/w7-1$ echo "some text" >> 1level3/file1
-bash: 1level3/file1: Permission denied
anshu@DESKTOP-M5IKQ09:~/w7/w7-1$ chmod u+rw 1level3/file1
anshu@DESKTOP-M5IKQ09:~/w7/w7-1$ ls -l 1level3/file1
-rw----- 1 anshu anshu 0 Dec 19 18:35 1level3/file1
anshu@DESKTOP-M5IKQ09:~/w7/w7-1$ cat 1level3/file1
anshu@DESKTOP-M5IKQ09:~/w7/w7-1$ echo "additional text" >> 1level3/file1
anshu@DESKTOP-M5IKQ09:~/w7/w7-1$ |

```

11. (Now,)

- a. Display access permissions for **1level3**.
- b. Remove all access permissions for the **1level3** directory.
- c. Display access permissions for **1level3**.
- d. Try to read a file from **1level3** using any utility.
- e. Try to put a file into **1level3** using any utility.
- f. Try to search in **1level3** using any command (e.g., the **ls** command).
- g. Add read, write, and execute access permissions for yourself for the **1level3** directory.
- h. Display access permissions for **1level3**.
- i. Try to read a file from **1level3** using any utility.
- j. Try to put a file into **1level3** using any utility.
- k. Try to search in **1level3** using any command (e.g., the **ls** command).


```
anshu@DESKTOP-M5IKQ09:~/w7/w7-1$ ls -ld llevel3
drwxr-xr-x 4 anshu anshu 4096 Dec 19 18:35 llevel3
anshu@DESKTOP-M5IKQ09:~/w7/w7-1$ chmod 000 llevel3
anshu@DESKTOP-M5IKQ09:~/w7/w7-1$ ls -ld llevel3
d----- 4 anshu anshu 4096 Dec 19 18:35 llevel3
anshu@DESKTOP-M5IKQ09:~/w7/w7-1$ cat llevel3/file1
cat: llevel3/file1: Permission denied
anshu@DESKTOP-M5IKQ09:~/w7/w7-1$ touch llevel3/newfile
touch: cannot touch 'llevel3/newfile': Permission denied
anshu@DESKTOP-M5IKQ09:~/w7/w7-1$ ls llevel3
ls: cannot open directory 'llevel3': Permission denied
anshu@DESKTOP-M5IKQ09:~/w7/w7-1$ chmod u+rwX llevel3
anshu@DESKTOP-M5IKQ09:~/w7/w7-1$ ls -ld llevel3
drwx----- 4 anshu anshu 4096 Dec 19 18:35 llevel3
anshu@DESKTOP-M5IKQ09:~/w7/w7-1$ cat llevel3/file1
additional text
anshu@DESKTOP-M5IKQ09:~/w7/w7-1$ touch llevel3/anotherfile
anshu@DESKTOP-M5IKQ09:~/w7/w7-1$ ls llevel3
anotherfile  dir1  dir2  file1  myfile.txt
anshu@DESKTOP-M5IKQ09:~/w7/w7-1$
```