Infrastructure Engineering Assignment

Solution Approach:

Three observations guided the present work.

- **The First one is:**

For searching all the files until we don't have any subdirectory, it forms a "M-ary Tree" with our input path as "Root Node" and with all the files as "Leaf Nodes".

- **The Second one is:**

For displaying the 10 biggest files we need to store the data of those files and it is enough to store the data of only those 10 files. In "LINKED LIST" deletion and insertion of files at any location is easy and we can insert the files according to the size(Increasing order).

- **The Third one is:**

While sorting the linked list I used the technique of "INSERTION SORT".

DESCRIPTION OF FUNCTIONS USED:

- ✓ **createNode( )-** This function creates a structure of node having

data members char, char, off_t.

FOR CASE 1: Display the 10 biggest files in these folders with their size in MB.

- ✓ **nodeDirectory( )** -This function takes the path as input. Here the path which user enters is the "Root Node". This function searches for the files.
- ✓ **insert( )** - Whenever we find a file using the nodeDirectory( ) function, it sends the path, name, size of the file to enter( ) function.
- ✓ **enter( )** - This function takes the path, name, size as the inputs from insert( ) function and stores the file information in the linked list if it satisfies the conditions given in problem statement.

FOR CASE 2: All the files on the Desktop should be moved into these directories based on their file type or extension.

- ✓ **nodeDirectory_2( )** - This function takes the path as input where we have to clean and sorts the files according to there extensions by creating separate folders of each type in the documents folder.
- ✓ **move_file( ) & copy_cut_file( )-** The move_file( ) function deletes the file on the desktop and the copy_cut_file( ) function

creates the same file which is deleted on the desktop in the document folder with separate sub folders for different type of extensions i.e docs, pdf, txt etc. respectively.

Conclusion: The main objective of the question is fulfilled. Code working successfully in LINUX. A good assignment by doing this assignment i gained a few knowledge about file handlings.