Below is the documentation for all 10 operations in the in-memory file system, along with instructions on how to execute them.

How to Execute:

Open a terminal and navigate to the directory containing the script.

Run the script using the command:

python Main.py

* You will be prompted with a command-line interface (current\_path>).
* Enter the commands for the desired operations based on the usage instructions provided for each operation.
* To exit the file system, use the command: exit

1. mkdir - Create a New Directory

Description: This operation creates a new directory in the current directory.

mkdir <directory\_name>

1. cd - Change Directory

Description: This operation changes the current directory.

cd <target\_path>

Use cd / to move to the root directory.

Use cd .. to move to the parent directory.

Use cd <absolute\_path> to move to a specified absolute path.

1. ls - List Contents

Description: This operation lists the contents of the current directory or a specified directory.

ls <directory\_path>

1. grep - Search for a Pattern in a File

Description: This operation searches for a specified pattern in a file.

grep <pattern> <file\_path>

1. cat - Display Contents of a File

Description: This operation displays the contents of a file.

cat <file\_path>

1. touch - Create a New Empty File

Description: This operation creates a new empty file.

touch <file\_name>

1. echo - Write Text to a File

Description: This operation writes text to a file.

echo <file\_path> '<text>'

1. mv - Move a File or Directory

Description: This operation moves a file or directory to another location.

mv <source\_path> <target\_path>

1. cp - Copy a File or Directory

Description: This operation copies a file or directory to another location.

cp <source\_path> <target\_path>

1. rm - Remove a File or Directory

Description: This operation removes a file or directory.

rm <target\_path>

Note:

* The file system state will be saved to filesystem\_state.json upon exiting. To load the state on the next execution, use the command:

python filesystem.py "{'load\_state': 'true'}"