# Linux Commands

## Navigation and Path

* **pwd**: Print the present working directory.
* **whoami**: Display the current username.
* Linux directory structure resembles a tree with / as the root.
* **cd**: Change directory.
  + cd ~: Go to the home directory.
  + cd ..: Move to the parent directory.
  + cd -: Return to the previous directory.
  + cd ../..: Move up two levels in the directory tree.
  + cd .: Stay in the current directory.

### Path Types

* **Absolute Path**: Starts from the root (/).
  + Example: cd /data/retail\_db/departments/
* **Relative Path**: Relative to the current directory.
  + Example: cd ../departments/

### Listing Files and Directories

* **ls**: List files and directories.
  + Color coding: blue (directories), green (executables), black (normal files).
  + ls -l: Detailed listing.
  + ls -lt: List by modification time, newest first.
  + ls -ltr: List by modification time, oldest first.
  + ls -lr: List in reverse dictionary order.
  + ls -R: Recursively list all files and directories.
  + ls -a: Include hidden files.
  + ls -Ra or ls -aR: Recursively list all files and directories, including hidden ones.

### File and Directory Operations

* **touch filename**: Create an empty file or update the timestamp.
* **mkdir dirname**: Create a new directory.
* **rmdir dirname**: Remove an empty directory.
* **rm filename**: Remove a file.
  + rm -R dirname: Remove a directory and its contents.
* **cp source destination**: Copy files or directories.
  + cp -R sourcedir destdir: Recursively copy directories.
* **mv source destination**: Move or rename files or directories.
* **vi filename**: Edit a file using the vi editor.
  + Press i to enter insert mode, ESC to exit, :wq to save and quit.

### Viewing and Searching File Contents

* **cat filename**: Display the contents of a file.
  + cat > filename: Create a file and write to it.
  + cat >> filename: Append to a file.
* **head filename**: Display the first few lines of a file.
* **tail filename**: Display the last few lines of a file.
* **grep pattern filename**: Search for a pattern within a file.

## Hadoop HDFS Commands

### General Commands

* **hadoop fs -ls /**: List files and directories in HDFS root.
* **hadoop fs -mkdir /path/to/dir**: Create a directory in HDFS.
  + hadoop fs -mkdir -p /path/to/dir: Create directory with parent directories.
* **hadoop fs -put localfile /path/in/hdfs**: Copy file from local to HDFS.
* **hadoop fs -copyFromLocal localfile /path/in/hdfs**: Copy file from local to HDFS.
* **hadoop fs -get /path/in/hdfs localpath**: Copy file from HDFS to local.
* **hadoop fs -copyToLocal /path/in/hdfs localpath**: Copy file from HDFS to local.
* **hadoop fs -mv /src/path /dest/path**: Move files within HDFS.
* **hadoop fs -cp /src/path /dest/path**: Copy files within HDFS.
* **hadoop fs -df -h /path**: Show HDFS disk usage.

### File Inspection

* **hadoop fs -ls /path**: List files in a specific HDFS directory.
  + hadoop fs -ls -t -r /path: List files in reverse time order.
  + hadoop fs -ls -S -h /path: List files by size, in human-readable format.
  + hadoop fs -ls /path | grep pattern: Filter list of files using grep.
* **hadoop fsck /path/to/file -files -blocks -locations**: Check the health of HDFS files.