Current working directory  
¡ **pwd** – print working directory ¡ **cd** – change directory  
¡ Relative path vs full path

¡ File System Commands  
¡ **ls** – list directory contents ¡ **cp** – copy files  
¡ **rm** – remove files  
¡ **mv** – move files  
¡ **mkdir** – make directory  
¡ **rmdir** – remove directory

**cat** – copy the contents to the screen

* ¡  **more (less)** – display file contents in a user friendly manner
* ¡  **head** - copy the first lines of a file to the screen
* ¡  **tail** – copy the last lines of a file to the screen
* ¡  **wc** – count the number of lines, words, characters in a file
* ¡  **grep** – globally search a regular expression and print

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COMM ANDS FOR CHECKING THE SYSTEM  
S TATUS

¡ **who** – list of current users

* ¡  **whoami** – what is my user name
* ¡  **top** – list the processes using the most

resources

* ¡  **ps** – process status
* ¡  **uptime** – how long has the system been running
* ¡  **date** - current date and time
* **wc** – count the number of lines, words, characters in a file
* ¡  **grep –** output lines matching a pattern
* ¡  **sort –** sort lines of text
* ¡  **uniq –** filter out repeated lines in a file
* ¡  **cut –** cut out selected portions of each line of a file
* ¡  **tee –** sends the data to both a file and stdout
* wc  
  ¡ wc file
* ¡ wc -l file ¡ wc –w file
* ¡ grep *pattern [file]*¡ grep public \*java  
  ¡ grep include controller.cpp ¡ grep TODO src/\*  
  ¡ ls | grep –i main
* :w to write the file, or  
  ¡ :q to exit the editor, or  
  ¡ :q! to quit without saving etc.

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LET’S PRACTICE

¡ pwd ¡ ls  
¡ ls –l

¡ cd (home) ¡ cd (down) ¡ mkdir  
¡ rmdir

¡ rm  
¡ touch

¡ cp (from) (to)  
¡ mv (from) (to)  
¡ echo “this” >> target  
¡ cat  
¡ vim  
¡ grep “pattern” in-target

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HELPFUL TIPS

¡ h moves the cursor one character to the left ¡ j moves the cursor down one line

¡ k moves the cursor up one line  
¡ l moves the cursor one character to the right ¡ 0 moves the cursor to the beginning of the line ¡ $ moves the cursor to the end of the line  
¡ w move forward one word  
¡ b move backward one word  
¡ Gmovetotheendofthefile  
¡ gg move to the beginning of the file  
¡ dd deletes a record  
¡ x deletes a character

.

[]

\*

?

+

^

$

\

|

{m, n}

\b

[[: blank: ]]

**Usage**

Any one character

Any enclosed character

Zero or more of the preceding character

Zero or one of the preceding character

One or more of the preceding character

Anchor - The beginning of a string

Anchor – The end of the string

Escape character

Boolean OR

The preceding character appears **m** to **n** times

Anchor – The beginning of a word

Space or Tab

METACHARACTERS

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|  |  |
| --- | --- |
| ^ The | matches any string that starts with "The". |
| of despair$ | matches a string that ends in with "of despair". |
| ^abc$ | a string that starts and ends with "abc" - effectively an exact match comparison. |
| notice | a string that has the text "notice" in it. |
| ab\* | matches a string that has an a followed by zero or more b's ("ac", "abc", "abbc", etc. ) |
| ab+ | same, but there's at least one b ("abc", "abbc", etc., but not "ac") |
| ab? | there might be a single b or not ("ac", "abc" but not "abbc"). |
| a?b+$ | a possible 'a' followed by one or more 'b's at the end of the string:  Matches any string ending with "ab", "abb", "abbb" etc. or "b", "bb" etc. but not "aab", "aabb" etc. |

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EX AMPLES

|  |  |
| --- | --- |
| "[ab]" | matches a string that has either an a or a b (that's the same as "a|b") |
| "[a-d]" | a string that has lowercase letters 'a' through 'd' (that's equal to "a|b|c|d" and even "[abcd]") |
| "^[a-z A-Z]" | a string that starts with a letter |
| "[0-9]%" | a string that has a single digit before a percent sign |
| ",[a-zA-Z0- 9]$" | a string that ends in a comma followed by an alphanumeric character |
| "ab{2}" | matches a string that has an a followed by exactly two b's ("abb") |
| "ab{2, }" | a followed by at least two b's ("abb", "abbbb", etc.) |
| "ab{3, 5}" | a followed by from three to five b's ("abbb", "abbbb", or "abbbbb") |
| "a(bc)\*" | matches a string that has an a followed by zero or more copies of the sequence "bc" |
| "a(bc){1, 5}" | a followed by one through five copies of "bc" |
| "hi|hello" | matches a string that has either "hi" or "hello" in it |
| "(b|cd)ef" | a string that has either "bef" or "cdef" |
| "(a|b)\*c" | a string that has a sequence of alternating a's and b's ending in a c |
| "a. [0-9]" | matches a string that has an a followed by one character and a digit |
| "^. {3}$" | a string with exactly 3 characters |

awk '{print}' employee.txt  
¡ awk '/manager/ {print}' employee.txt  
¡ awk '{print $1,$4}' employee.txt  
¡ awk '{print NR,$0}' employee.txt  
¡ awk '{print $1,$NF}' employee.txt  
¡ awk 'NR==3, NR==6 {print NR,$0}' employee.txt  
¡ awk '$2 !~ /manager/ {print}' employee.txt  
¡ awk '$2 ~ /manager/ {print}' employee.txt  
¡ $ awk 'BEGIN { for(i=1;i<=6;i++) print "square of", i, "is",i\*i; }'