**UNIX Commands Cheatsheet Table**

**Assignment No.1**

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| --- | --- | --- | --- |
| **Command** | **Description** | **Syntax / Example** | **Notes** |
| cal | Displays calendar | cal cal 2 2015 cal -y | Use -m, -j, -y options |
| date | Shows system date/time | date date +%m date +"%h %m" | Custom format supported |
| echo | Displays a message | echo "Hello World" | Quotes preserve spacing |
| bc | Launches calculator | bc scale=2 17/7 | Supports precision with scale |
| script | Records terminal session | script file1 exit | Stores output in file1 |
| passwd | Changes user password | passwd | Run and follow prompts |
| who | Lists logged-in users | who | Lists current sessions |
| whoami | Displays current user | whoami | Shows your login name |
| uname | Displays OS information | uname uname -a | -a for all system info |
| tty | Displays terminal name | tty | Useful in scripts |
| clear | Clears terminal screen | clear | No arguments needed |
| man | Displays manual for commands | man ls | Full command reference |
| whatis | Gives short description of command | whatis cat whatis cp | Quick info; same as man -f |
| printf | Formatted output (like echo) | printf "Hello %s\n" "World" | Bash only |
| history | Shows command history | history | Lists previously used commands |
| stty | Displays or sets terminal settings | stty | Advanced terminal control |

**Assignment No.2**

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| **Command** | **Description** | **Syntax / Example** | **Notes** |
| pwd | Shows current working directory | pwd | Useful for navigation |
| cd | Change directory | cd foldername cd .. | .. = move one level up |
| mkdir | Creates a directory | mkdir newdir |  |
| rmdir | Removes an empty directory | rmdir mydir | Use rm -r for non-empty |
| ls | Lists files in current directory | ls ls -l ls -a | Use -l, -a for more info |
| cat | View/create files | cat > file1 → create cat file1 → view | Basic file operations |
| cp | Copies files/directories | cp file1 file2 cp chap\* progs/ cp -R dir1 dir2 | -R for recursive (dirs) |
| rm | Removes files | rm file1 rm \* | Use with caution! |
| mv | Moves or renames files/directories | mv file1 newname mv file1 file2 folder/ mv dir1 dir2 | Renames or moves |
| file | Displays file type | file filename | Text, script, binary, etc. |
| wc | Counts lines, words, characters | wc file.txt | Output format: lines words characters |
| od | Displays file in octal format | od file.txt | For raw binary inspection |
| cmp | Compares two files, byte by byte | cmp file1 file2 | Shows first difference |
| comm | Finds common & unique lines in sorted files | comm file1 file2 | Requires sorted files |
| diff | Shows line-by-line file differences | diff file1 file2 | Also used in version control |

**📁 Types of UNIX Files**

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| **Type** | **Description** |
| **Ordinary File** | Contains text, data, or programs |
| **Directory** | Container for files & subdirectories |
| **Special File** | Interface to hardware (e.g., /dev/sda1) |

**🌳 UNIX File System Structure**

UNIX follows a **hierarchical structure** (tree), where each directory has a parent, and files are stored under directories.

**🔹 1. head Command**

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| **Command** | **Description** |
| head filename | Displays first 10 lines of the file (default behavior) |
| head -n filename | Displays first n lines of the file |
| head -5 flavours.txt | Displays first 5 lines of flavours.txt |

**🔹 2. tail Command**

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| **Command** | **Description** |
| tail filename | Displays last 10 lines (default) |
| tail -n filename | Displays last n lines |
| tail -4 flavours.txt | Displays last 4 lines of flavours.txt |
| tail -f /var/log/messages | Follows the file output live (e.g., for log monitoring) |

**🔹 3. cut Command**

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| **Command** | **Description** |
| cut -c4 file.txt | Cuts the 4th character from each line |
| cut -c4,6 file.txt | Cuts the 4th and 6th characters |
| cut -c4-7 file.txt | Cuts from the 4th to the 7th character |
| cut -d' ' -f2 file.txt | Cuts the 2nd field using space as delimiter |
| cut -d' ' -f2,3 file.txt | Cuts the 2nd and 3rd fields with space as delimiter |

**🔹 4. paste Command**

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| **Command** | **Description** |
| paste file1 file2 | Combines corresponding lines from file1 and file2 (TAB separated) |
| paste file2 file1 | Same as above but order is reversed |
| `paste -d" | " file1 file2` |
| paste -s file1 file2 | Merges all lines from each file sequentially (side-by-side) |

**🔹 5. sort Command**

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| **Command** | **Description** |
| sort data.txt | Sorts contents of file alphabetically (or numerically if numbers present) |
| sort data.txt > output.txt | Saves the sorted output into output.txt instead of displaying on screen |

**🔹 6. uniq Command**

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| **Command** | **Description** |
| uniq myfile.txt | Removes adjacent duplicate lines and displays unique lines |

🔸 *Note:* uniq only removes **consecutive duplicates** – sort file first if needed.

**🔹 7. nl Command**

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| **Command** | **Description** |
| nl filename | Numbers the lines in the file and prints |
| nl list.txt > nlist.txt | Stores numbered output in a new file called nlist.txt |

**🔹 8. tr Command**

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| **Command** | **Description** |
| tr '{}' '()' < input > output | Replaces { with ( and } with ) in input file |
| echo "the geek stuff" | tr -d 't' | Deletes all t characters from the string |