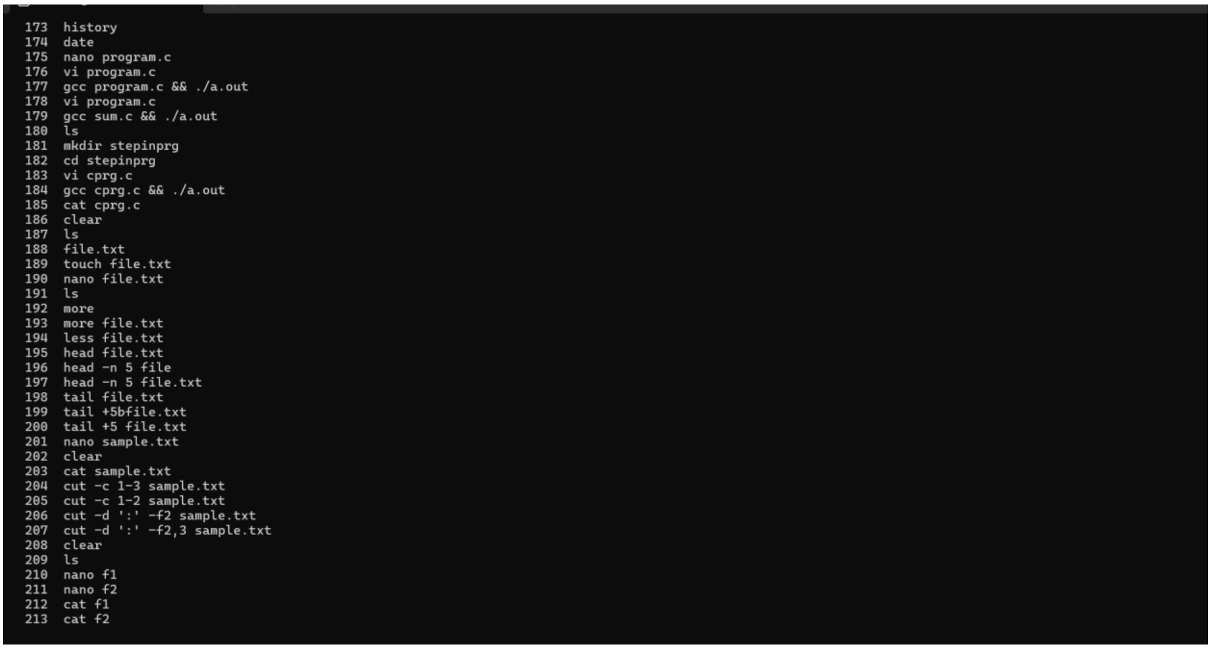
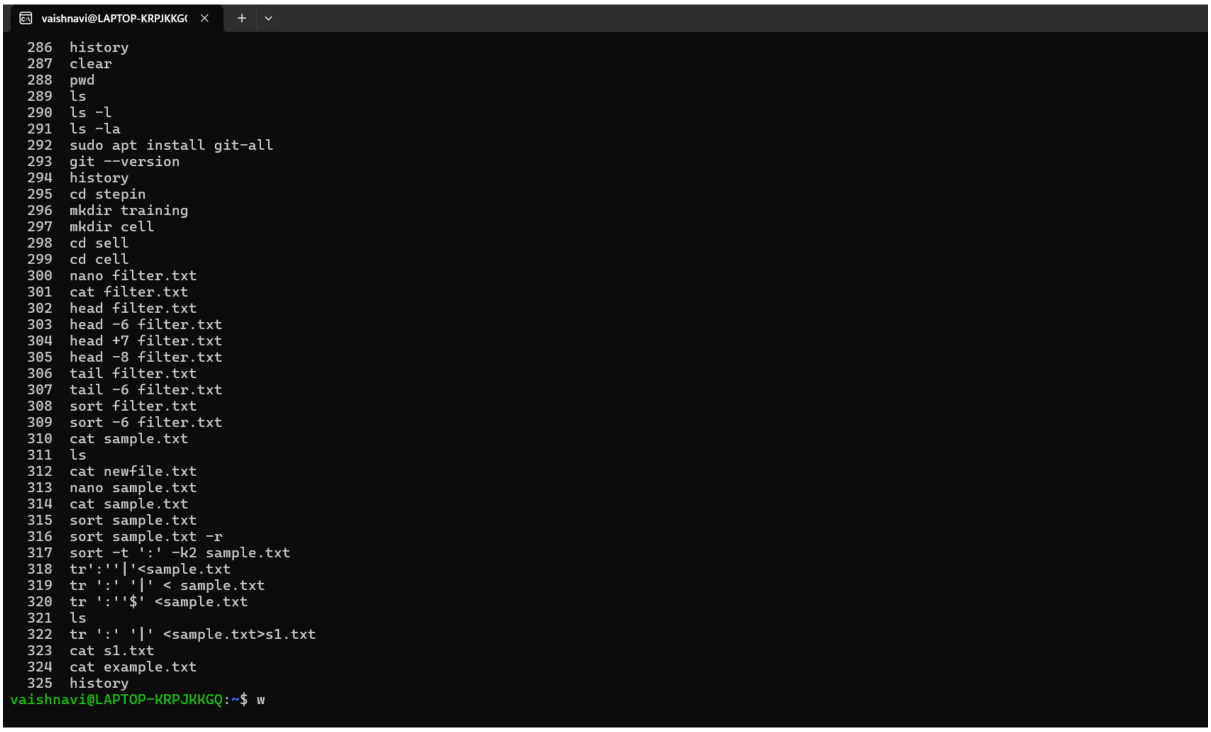
Day 2 Linux



```
  173  history
  174  date
  175  nano program.c
  176  vi program.c
  177  gcc program.c && ./a.out
  178  vi program.c
  179  gcc sum.c && ./a.out
  180  ls
  181  mkdir stepinprg
  182  cd stepinprg
  183  vi cprg.c
  184  gcc cprg.c && ./a.out
  185  cat cprg.c
  186  clear
  187  ls
  188  file.txt
  189  touch file.txt
  190  nano file.txt
  191  ls
  192  more
  193  more file.txt
  194  less file.txt
  195  head file.txt
  196  head -n 5 file
  197  head -n 5 file.txt
  198  tail file.txt
  199  tail +5bfile.txt
  200  tail +5 file.txt
  201  nano sample.txt
  202  clear
  203  cat sample.txt
  204  cut -c 1-3 sample.txt
  205  cut -c 1-2 sample.txt
  206  cut -d ':' -f2 sample.txt
  207  cut -d ':' -f2,3 sample.txt
  208  clear
  209  ls
  210  nano f1
  211  nano f2
  212  cat f1
  213  cat f2
```



```
  286  history
  287  clear
  288  pwd
  289  ls
  290  ls -l
  291  ls -la
  292  sudo apt install git-all
  293  git --version
  294  history
  295  cd stepin
  296  mkdir training
  297  mkdir cell
  298  cd sell
  299  cd cell
  300  nano filter.txt
  301  cat filter.txt
  302  head filter.txt
  303  head -6 filter.txt
  304  head +7 filter.txt
  305  head -8 filter.txt
  306  tail filter.txt
  307  tail -6 filter.txt
  308  sort filter.txt
  309  sort -6 filter.txt
  310  cat sample.txt
  311  ls
  312  cat newfile.txt
  313  nano sample.txt
  314  cat sample.txt
  315  sort sample.txt
  316  sort sample.txt -r
  317  sort -t ':' -k2 sample.txt
  318  tr':''|'<sample.txt
  319  tr ':' '|' < sample.txt
  320  tr ':''$' <sample.txt
  321  ls
  322  tr ':' '|' <sample.txt>s1.txt
  323  cat s1.txt
  324  cat example.txt
  325  history
vaishnavi@LAPTOP-KRPJKKGQ:~$ w
```

C Programming and Compilation

- vi [path]: Open [path] in vi editor.
- gcc [path] && ./a.out: Compile [path] and run the output if successful.
- gcc [path]: Compile [path] into executable (a.out).
- ./a.out: Run the compiled C program.

File Viewing and Editing

- cat [path]: Display contents of [path].
- nano [path]: Edit [path] using the nano editor.
- more [path]: View [path] one page at a time.
- less [path]: Scrollable viewer for [path].
- head [path]: Show first 10 lines of [path].
- head -n 5 [path]: Show first 5 lines of [path].
- tail [path]: Show last 10 lines of [path].
- tail +5 [path]: Show lines starting from line 5.

Cut and Paste

- cut -c 1-3 [path]: Extract characters 1 to 3.
- cut -c 4-10 [path]: Extract characters 4 to 10.
- cut -d ':' -f2 [path]: Extract 2nd field using : as delimiter.
- cut -d ':' -f2,3 [path]: Extract 2nd and 3rd fields.
- paste [path1] [path2]: Merge lines from two files.
- paste -d ':' [path1] [path2]: Merge with : as delimiter.
- paste -s [path1] [path2]: Merge serially one after another.

Sorting

- sort [path]: Sort lines alphabetically.
- sort [path] -r: Sort lines in reverse.
- sort -t ':' -k2 [path]: Sort by 2nd field.

- sort -t ':' -k3 [path]: Sort by 3rd field.
- sort -t ':' -k4 [path]: Sort by 4th field.
- sort -t ':' -k3 [path] -r: Reverse sort by 3rd field.

Translate (tr)

- tr ':' '|' < [path]: Replace : with |.
- tr ':' '|' < [path] > [path]: Save tr output to another file.
- tr ':0' '|$' < [path]: Replace : with | and 0 with $.
- tr -s '0' < [path]: Squeeze repeated 0s.
- tr -d '0' < [path]: Delete all 0s.

Uniq and Comparison

- uniq [path]: Remove adjacent duplicate lines.
- cmp [path1] [path2]: Compare two files byte by byte.
- diff [path1] [path2]: Compare two files line by line.

Grep (Pattern Search)

- grep pattern [path]: Search for pattern.
- grep ^pattern [path]: Match lines starting with pattern.
- grep \; [path]: Match lines containing a semicolon.

Sed (Stream Editor)

- sed 's/old/new/' [path]: Replace first occurrence of old with new.
- sed -i 's/old/new/' [path]: In-place replacement.
- sed 's/!/$/g' [path]: Replace all ! with $.
- sed '/word/d' [path]: Delete lines with word.
- sed '/word/a text' [path]: Append text after lines containing word.
- sed -n '/word/p' [path]: Print lines matching word.

Awk (Text Processing)

- awk '{print $0}' [path]: Print entire line.
- awk '{print $1, $3}' [path]: Print 1st and 3rd fields.
- awk '$3 > 50000 {print $1, $3}' [path]: Filter lines by field value.

- awk 'BEGIN {print "Header"} {print $1, $3}' [path]: Print header and fields.
- awk '{total+= $3} END {print total}' [path]: Calculate total of field.
- awk '{print NR, $1}' [path]: Print line number and 1st field.
- awk '{print NR, $0}' [path]: Print line number and full line.
- awk '/pattern/' [path]: Search lines with pattern.
- awk '$2 < 30 {print $1, $2}' [path]: Print lines with 2nd field < 30.
- awk '{printf "..." $1, $2, $3}' [path]: Formatted printing.
- awk 'END {print NR}' [path]: Print total number of lines.

Permissions

- ls -l: List files with permissions.
- ls -l [path]: Show permissions for file.
- chmod u+x [path]: Add execute permission to user.
- chmod o-r [path]: Remove read permission for others.
- chmod 462 [path]: Set specific permissions (owner: read/write, group: write, others: read).