
ITWS-1

Assignment-1

Due on

Answers:

1. Create directory 'Assignment1'
 - `mkdir Assignment1`
2. Go inside directory 'Assignment1'
 - `cd Assignment1`
3. Create directories 'a', 'b', 'e', 'f' using single command where 'a', 'b' are inside directory 'Assignment1' and 'e' is inside 'b' and 'f' is inside 'e'.
 - `mkdir -p a b/e/f`
4. Go inside directory 'a'
 - `cd a`
5. List all the files and folders(not hidden files) in your home directory in long listing format and store in a file named 'file.txt' in the current directory
 - `ls -l ~ > file.txt`
6. Rename 'file.txt' to 'file1.txt'
 - `mv file.txt file1.txt`
7. Copy 'file1.txt' to directory 'f' with filename as 'file2.txt'
 - `cp file1.txt ../b/e/f/file2.txt`

8. Get the fifth field(column) of the content of the file 'file1.txt' separating each field by space and display all the unique values.(Hint: you will need to replace multiple spaces by a single space)
 - `cat file1.txt | tr -s ' ' | cut -d ' ' -f 5 | sort -n | uniq`
9. Go inside directory 'f' in single command
 - `cd ../b/e/`
10. Display the path of your working directory.
 - `pwd`
11. Go back to the previous working directory
 - `cd -`
12. Change the timestamp of 'file1.txt'
 - `touch file1.txt`
13. Go back to the parent directory
 - `cd ..`
14. Create a file 'file3.txt' in the current directory with atleast 25 lines.
 - `vim file3.txt`
 - `cat > file3.txt`
15. Display the first 10 lines of 'file3.txt'
 - `cat file3.txt | head -10`
 - `cat file3.txt | head`
 - `cat file3.txt | head -n 10`
16. Display the lines from 7 through 15 in 'file3.txt'
 - `cat file3.txt | head -n 15 | tail -n 9`
 - `cat file3.txt | head - 15 | tail -9`
17. Count the number of words in 'file3.txt'

- `wc -w file3.txt`
 - `wc -w < file3.txt`
18. Print “hello world” on terminal.
- `echo “hello world”`
19. Display the path to the binary file of ``ls``
- `which ls`
20. Display the last 5 commands you ran on terminal
- `history | tail -5`
21. Create 5 empty files: `lab1.txt`, `lab2.txt`, `lab3.txt`, `lab4.txt`, `lab5.txt` in a single command.
- `for i in `seq 1 5`; do touch lab$i.txt; done`
 - `touch file1.txt file2.txt file3.txt file4.txt file5.txt`
22. Rename the above files to `lab1.c`, `lab2.c`, `lab3.c`, `lab4.c`, `lab5.c` in a single command.
- `for i in `seq 1 5`; do mv lab$i.txt lab$i.c; done`
 - `Rename “s/txt/c/g” *`
23. List the content of your directory in a tree-like format
- `tree`
24. List the content of your current directory in long list format sorted by modification time.
- `ls -lrt` (Oldest first, `-r` for reverse)
25. List the content of your current directory in long list format sorted in increasing order of file size.
- `ls -lSr .` (S is for sorting, r for reverse, `.` denotes the current directory, h is for human readable format)

26. Display all files and folders inside directory 'Assignment1' up to two levels of depth such that full path is displayed for each file/folder with respect to current directory.

- `find ./ -maxdepth 2`

27. Display all '.txt' files inside directory 'Assignment1' such that full path is displayed for each file/folder with respect to current directory.

- `find <path_to_Assignment1> -name "*.txt"`

28. Clear the terminal:

- `clear`

29. Find out the name of current user logged in.

- `whoami`

30. Check if server "intranet.iiit.ac.in" is on-line

- `ping intranet.iiit.ac.in`

31. SSH to your mirage account

- `ssh <username>@mirage.iiit.ac.in`

32. Find out who else is logged in to mirage at that time

- `who`

33. Create an empty file named 'server.txt' on the mirage server

- `touch server.txt`

34. Get back to your home folder on the local machine

- `exit`

35. Get only `process_ids` of all running processes and save it in file 'pid.txt'.

- `ps -aux | tr -s " " | cut -d ' ' -f 2 > pid.txt`
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36. Show directory's free space usage in human readable format of the current directory.

- `df -h`

37. Count the number of words are there in the dictionary which have "work" as a substring. (Hint: There is a dictionary file in the system)

- `cat /usr/share/dict/words | grep work | wc -l`

38. Copy 'Assignment1' and all its contents to the home folder on your mirage account.

- `scp -r ../Assignment1 <username>@mirage.iiit.ac.in:`
- `scp -r <abs_path_of_Assignment1>`
`<username>@mirage.iiit.ac.in:`

39. Compress the folder 'Assignment1' and save the output as Assignment1_RollNumber.tar.gz (Where "RollNumber" is your IIIT roll number).

- `tar -czvf Assignment1_<RollNo>.tar.gz Assignment1`

BONUS QUESTIONS

1. Display the name of your Operating System (Hint: use command for system information)

- `uname -o`

2. Display the calendar for 2017

- `cal 2017`
- `cal -y 2017`

3. Display today's date in the format 'yyyy-mm-dd'

- `date "+%F"`

4. Send "hello world" message to every online user on mirage.

- `wall "hello world"`

5. Generate all the multiples of 8 from 0 to 1,00,000 and find the number of integers that do not have the digit 6, but do have the digit 4 or 5. (do this in one command)
 - `seq 0 8 100000 | grep -v '6' | grep '4|5' | wc -l`
6. Write a command to find the current IPv4 /1 IPv6, Broadcast address and subnet mask of the ethernet connection of your computer.
 - `ifconfig | grep -A 2 enp1s0 | grep -A 2 "inet addr"`
 - Note: Here `enp1s0` is the name of your ethernet interface, it can have some other name such as `eth0`.
7. Automatically retrieve all files modified on that day and back them up to different location.
 - `find <search_location> -mtime -1 -type f -exec cp {} <backup_location> \;`
 - `<search_location>` is the directory where you want to cat case search, can be `~`.
 - `<backup_location>` is directory where you want to backup, eg: `~/Backup`
8. Retrieve all files modified last week and replace the phrase “this week” with “next week” in those files.
 - `find <search_location> -mtime -7 -type f | xargs sed -i "s/this week/next week/g"`
 - `ifconfig | grep -A 2 enp1s0 | grep -A 2 "inet addr"`
9. Merge five sets of user lists into a single one.
 - `cat list{1..5}.txt | sed "s/[^a-zA-Z]/ /g" | tr -s " " | sort uniq`
 - Note: The files contain some whitespace characters at the end, hence we first replace all of them with spaces first and

suppress spaces using tr.