

UNIX LAB QUESTIONS WITH SOLUTIONS

1	<p>a) Write a shell script program to swap the values in two variables.</p> <p>b) Explain following vi editor commands: - quit the file with/without saving the changes.</p> <p>c) Explain following commands:- echo, hostname, head, ping</p>
---	--

A)

```
echo -n "Enter the value of x: "
read x
echo -n "Enter the value of y: "
read y
echo -n "Before swapping X=$x and Y=$y"
t=$x
x=$y
y=$t
echo -n "After swapping X=$x and Y=$y"
```

B)

Saving and quitting the file

```
:wq          Saves the file and quit.
:q!          Unsave the file and quit
```

C)

1.echo

Description: Prints String

Syntax: echo "string"

2.hostname

Description: It is a label assigned to a device connected to a computer network & is used to identify the device in various forms.

Syntax: hostname: displays machine host name.
 hostname -f: displays fully qualified host and domain name.
 hostname -i: displays ip address of current machine.

3.head

Description: Shows no of lines in the file from head

Syntax: head -n filename.extension

4.ping

Description: It is a basic internet program that allows a user to verify that a particular ip address exists & can accept requests. If you do ping www.google.com it will display its ip address. Use ctrl+c to stop.

Syntax: ping website _address

2	<p>a) Write a shell script program to perform all arithmetic operations on two numbers.</p> <p>b) Explain following vi editor commands: - display & hide line numbers.</p> <p>c) Explain following commands:- create users,group,add users to group,change group id.</p>
---	--

A)

```

echo -n "Enter first number"
read a
echo -n "Enter second number"
read b
val1=`expr $a + $b`
val2=`expr $a - $b`
val3=`expr $a \* $b`
val4=`expr $a / $b`
echo "Addition=$val1"
echo "Subtraction=$val2"
echo "Multiplication=$val3"
echo "Division=$val4"

```

B)**Displaying and hiding line numbers**

```

:set nu           Shows line number
:set nonu        Hide line numbers

```

C)**1. Creating a user**

Description: It will create new user in the system.

Syntax: useradd iamjrkoo6

2. Create a group

Description: It will create new group in the system.

Syntax: groupadd public

3. Adding user to the groups

Description: It will add specific to specific group.

Syntax: usermod -a -G public facebook

4. Changing group id of group

Description: It will change group id of a group.

Syntax: groupmod -g 122 static

3	a) Write a shell script program to print first n numbers of Fibonacci series. b) Explain following vi editor commands: - copy paste specified no.of lines. c) Explain following commands:-netstat,calculator, nslookup, create a file
---	---

A)

```

a=0
b=1
echo -n "Enter nth term"
read n
for ((i=0;i<=n;i++))
do
echo -n "$a "
c=$((a+b))
a=$b
b=$c
done

```

B)**Copy - Paste**

y/Y	Copy(Yank)
p/P	Paste
4yy	No of lines copy

C)**Netstat**

Description: Most useful and very versatile tool for finding connection to and from the host.

Syntax: netstat
 netstat -a:Displays all the connections.
 netstat -l:Lists only listening ports.
 netstat -g:Display all multicast network subscribed by host.

calculator

Description: Single math operation

Syntax: bc

Name Server Lookup

Description :It is useful tool for finding information about a named domain.

Syntax: nslookup website_address:Displays name & address.
 nslookup ip_address:Displays address & name.

Creating file in Vi Editor

Description: Through this method we can create file in Vi Editor

Syntax: vi filename.extension

create a file

Description: Creating file

Syntax: cat>filename.extension

4	<p>a) Write a shell script program to simulate a simple calculator.</p> <p>b) Explain following vi editor commands: - to delete a word & complete line.</p> <p>c) Explain following sed commands:- view range of a file, replace a word, insert a blank line, delete a line.</p>
---	--

A)

```

echo -n "Enter first number"
read a
echo -n "Enter second number"
read b
val1=`expr $a + $b`
val2=`expr $a - $b`
val3=`expr $a \* $b`
val4=`expr $a / $b`
echo "Addition=$val1"
echo "Subtraction=$val2"
echo "Multiplication=$val3"
echo "Division=$val4"

```

B)**Deleting Commands**

dw	Deletes the current word
dd	Deletes the current line

C)**Viewing a range of line of document**

Description: It will show the lines to and from.

Syntax: sed -n 'to,fromp' filename.extension

Replacing words or characters

Description: It will replace words/characters with/without ignoring case in a line.

Syntax: sed 's/oldcharacter/newcharacter/g' filename.extension

or sed 's/oldcharacter/newcharacter/gi' filename.extension

Inserting spaces in files.

Description: It will insert spaces between each lines.

Syntax: sed G filename.extension (single blank line will be inserted)

or sedG:Gfilename.extension (two blank line will be inserted)

Deleting specific line.

Description: It will delete specific line.

Syntax: sed 'linenod' filename.extension

6	<p>a) Write a shell script program to input a number and check whether it is even or odd</p> <p>b) Explain following vi editor commands:- to delete a word & complete line</p> <p>c) Explain following sed commands:- print a line, delete a line, duplicate the lines, change a line.</p>
---	--

A)

```

echo "Enter a number"
read n
b=`expr $n % 2`
if [ $b -eq 0 ]
then
echo "$n is even"
else
echo "$n is odd"
fi

```

B)**Deleting Commands**

dw	Deletes the current word
dd	Deletes the current line

C)**Printing specific line**

Description: It will the line of given no or it will print the lines having that specific word/character.

Syntax: sed -n 'linenop' filename.extension
or sed -n '/word/p' filename.extension

Deleting specific line.

Description: It will delete specific line.

Syntax: sed 'linenod' filename.extension

Printing each line twice.

Description: It will print all the lines of file twice.

Syntax: sed 'p' filename.extension

Changing whole line.

Description: It will change the line having specific word.

Syntax: sed '/specificword/c newline' filename.extension

7	<p>a) Write a shell script program to three numbers and find the largest among them.</p> <p>b) Explain following vi editor commands: - join the lines & undo the changes.</p> <p>c) Explain following commands:- findsmb, remove a file, ifconfig, head</p>
---	---

A)

```

echo -n "Enter first number"
read a
echo -n "Enter second number"
read b
echo -n "Enter third number"
read c
if [ $a -gt $b ] && [ $a -gt $c ]
then
echo -n "$a is greater"
elif [ $b -gt $a ] && [ $b -gt $c ]
then
echo -n "$b is greater"
elif [ $c -gt $a ] && [ $c -gt $b ]
then
echo -n "$c is greater"
fi

```

B)

Shift+j	Joins the two lines
:u	Undo Changes

C)**Findsmb**

Description: It is used to list information about machines that respond to SMB name queries.
e.g: Windows based machines sharing their hard disks.
Syntax: findsmb

Remove a file

Description: Remove a file.
Syntax: rm filename.extension

Interface configuration

Description: ifconfig is a system administration utility in UNIX like OS for network interface configuration. It displays current network configuration information.
Syntax: ifconfig

head

Description: Shows no of lines in the file from head
Syntax: head -n filename.extension

8	<p>a) Write a shell script program to concatenate two strings and display the resultant string along with its length.</p> <p>b) Explain following vi editor commands:- to delete a word & complete line.</p> <p>c) Explain following sed commands:- add a line before & after a match, replace a word inside the range, change a line.</p>
---	--

A)

```

echo "Enter string 1"
read name1
echo "Enter string 2"
read name2
name3=$name1$name2
echo "Concatenated string is $name3 "
len=`expr length $name3`
echo "Length=$len"

```

B)**Deleting Commands**

dw	Deletes the current word
dd	Deletes the current line

C)**Adding a line before a specific word.**

Description: It will insert a line above given specific word.

Syntax: sed '/specificword/i newline' filename.extension

Adding a line after a specific word.

Description: It will insert a line below given specific word.

Syntax: sed '/specificword/a newline' filename.extension

Replacing word/character inside the range.

Description: It will replace word/character within a given range.

Syntax: sed 'to,from s/oldword/newword/g' filename.extension

or sed 'to,from s/oldword/newword/gi' filename.extension

Changing whole line.

Description: It will change the line having specific word.

Syntax: sed '/specificword/c newline' filename.extension

9	a) Write a shell script program to check whether given string is palindrome or not. b) Explain following vi editor commands:- copy paste specified no.of lines c) Explain following commands:- hostname, tail, ping, calculator,
---	--

A)

```

echo "Enter a string"
read name
name1=$( echo $name | rev )
if [ $name = $name1 ]
then
echo "$name is palindrome"
else
echo "$name is not palindrome"
fi

```

B)

```

p/P          Paste
4yy          No of lines copy

```

C)**hostname**

Description: It is a label assigned to a device connected to a computer network & is used to identify the device in various forms.

Syntax: hostname: displays machine host name.
 hostname -f: displays fully qualified host and domain name.
 hostname -i: displays ip address of current machine.

tail

Description: Shows no of lines in the file from bottom

Syntax: tail -n filename.extension

ping

Description: It is a basic internet program that allows a user to verify that a particular ip address exists & can accept requests. If you do ping www.google.com it will display its ip address. Use ctrl+c to stop.

Syntax: ping website _address

calculator

Description: Single math operation

Syntax: bc

10	<p>a) Write a shell script program to enter a number and find its reverse.</p> <p>b) Explain following vi editor commands: - quit the file with/without saving the changes.</p> <p>c) Explain following sed commands:- view non-consecutive lines, view a range of lines, view entire file except a given range , print specific line.</p>
----	--

A)

```

echo "Enter a number"
read n
d=0
r=0
m=$n
while [ $n -gt 0 ]
do
d=$(( $n % 10 ))
r=$(( $r * 10 + $d ))
n=$(( $n / 10 ))
done
echo "Reverse of $m = $r "
```

B)**Saving and quitting the file**

```

:wq          Saves the file and quit.
:q!         Unsave the file and quit
```

C)**Viewing non-consecutive lines and ranges.**

Description: It will display all the lines of different ranges.

Syntax: sed -n -e 'to1,from1p' -e 'to2,from2p' filename.extension

Viewing a range of line of document

Description: It will show the lines to and from.

Syntax: sed -n 'to,fromp' filename.extension

Viewing entire file except the given range.

Description: It will display all the lines except the given range.

Syntax: sed 'to,fromd' filename.extension

Printing specific line

Description: It will the line of given no or it will print the lines having that specific word/character.

Syntax: sed -n 'linenop' filename.extension

or sed -n '/word/p' filename.extension

11	a) Write a shell script program to check whether given number is palindrome or not. b) Explain following vi editor commands: - display & hide line numbers. c) Explain following commands:- ipconfig, change directory, traceroute,tail
----	---

A)

```

echo "Enter a number"
read n
d=0
r=0
m=$n
while [ $n -gt 0 ]
do
d=$((($n % 10))
r=$((($r*10 + $d))
n=$((($n / 10))
done
if [ $m -eq $r ]
then
echo "$m is Palindrome"
else
echo "$m is not Palindrome"
fi

```

B)**Displaying and hiding line numbers**

```

:set nu           Shows line number
:set nonu        Hide line numbers

```

C)**Interface configuration**

Description: ifconfig is a system administration utility in UNIX like OS for network interface configuration. It displays current network configuration information.

Syntax: ifconfig

Change directory

Description: Changes the directory

Syntax: cd foldername

Trace Route

Description: Trace the route the packets take between your system & the host named. A hand utility to view no of hops & response time to get a remote system or website is traceroute, you need an internet connection to make use of this tool.

Syntax: traceroute website:Displays the all possible roots.

tail

Description: Shows no of lines in the file from bottom

Syntax: tail -n filename.extension

12	<p>a) Write a shell script program to check whether given number is Armstrong or not.</p> <p>b) Explain following vi editor commands: - to delete a word & complete line.</p> <p>c) Explain following grep commands:- display n lines after, before and around the match, display line numbers.</p>
----	---

A)

```

echo "Enter a number"
read n
d=0
sum=0
r=0
m=$n
while [ $n -gt 0 ]
do
d=$(( $n % 10 ))
r=`expr $d*$d*$d`
n=$(( $n / 10 ))
sum=$(( $sum + $r ))
done
if [ $m -eq $sum ]
then
echo "$m is Armstrong"
else
echo "$m is not Armstrong"
fi

```

B)**Deleting Commands**

dw	Deletes the current word
dd	Deletes the current line

C)**Display n lines before, after and around a match.**

Description: It will display lines before, after and around the match.

Syntax: `grep -B 2 -i "string" filename.extension`

or `grep -A 2 -i "string" filename.extension`

or `grep -C 2 -i "string" filename.extension`

Displaying line numbers.

Description: It will display lines having specific string.

Syntax: `grep -n "string*" filename.extension`

13	<p>a) Write a shell script program to print first n numbers of Fibonacci series.</p> <p>b) Explain following vi editor commands:- copy paste specified no.of lines.</p> <p>c) Explain following commands:- tracepath, head, netstat, list all directories.</p>
----	--

A)

```

a=0
b=1
echo -n "Enter nth term"
read n
for ((i=0;i<=n;i++))
do
echo -n "$a "
c=$((a+b))
a=$b
b=$c
done

```

B)

```

p/P          Paste
4yy          No of lines copy

```

C)**Trace Path**

Description: It shows the shortest path for reaching to that website.

Syntax: tracepath website

head

Description: Shows no of lines in the file from head

Syntax: head -n filename.extension

Netstat

Description: Most useful and very versatile tool for finding connection to and from the host.

Syntax: netstat

netstat -a: Displays all the connections.

netstat -l: Lists only listening ports.

netstat -g: Display all multicast network subscribed by host.

ls

Description: It shows directory

Syntax: ls

14	<p>a) Write a shell script program to perform all arithmetic operations on two numbers.</p> <p>b) Explain following vi editor commands:- display & hide line numbers.</p> <p>c) Explain following awk commands:- Insert the records of 10 employees with the fields : Name, Designation,Department, Salary. Print all the lines, count no. of lines, display line numbers.</p>
----	--

A)

```

echo -n "Enter first number"
read a
echo -n "Enter second number"
read b
val1=`expr $a + $b`
val2=`expr $a - $b`
val3=`expr $a \* $b`
val4=`expr $a / $b`
echo "Addition=$val1"
echo "Subtraction=$val2"
echo "Multiplication=$val3"
echo "Division=$val4"

```

B)**Displaying and hiding line numbers**

```

:set nu           Shows line number
:set nonu        Hide line numbers

```

C)

Create a file employee with field name, designation, department, salary
 Insert at least 10 records.
 >>>vi employee.txt

Default behavior of awk.

Description: By default the awk prints the data from specified file.
 Syntax: awk '{print}' filename.extension

Count the no of line in a file.

Description: It will result the no of lines in the file.
 Syntax: awk 'END {print NR}' filename.extension

Display line number to & from.

Description: It displays line numbers only to and from
 Syntax: awk 'NR==to,NR==from {print NR,\$0}' filename.extension

15	a) Write a shell script program to print sum of first n natural numbers. b) Explain following vi editor commands:- copy paste specified no.of lines. c) Explain following commands:- nslookup, create a file, ifconfig, remove a file,
----	--

A)

```

echo "Enter nth term"
read n
s=0
for ((i=1;i<=n;i++))
do
s=`expr $s + $i`
done
echo "Sum of first $n term=$s"

```

B)

```

p/P          Paste
4yy          No of lines copy

```

C)**Name Server Lookup**

Description :It is useful tool for finding information about a named domain.

Syntax: nslookup website_address:Displays name & address.
 nslookup ip_address:Displays address & name.

Creating file in Vi Editor

Description: Through this method we can create file in Vi Editor

Syntax: vi filename.extension

create a file

Description: Creating file

Syntax: cat>filename.extension

Interface configuration

Description: ifconfig is a system administration utility in UNIX like OS for network interface configuration. It displays current network configuration information.

Syntax: ifconfig

Remove a file

Description: Remove a file.

Syntax: rm filename.extension

16	<p>a) Write a shell script program to check whether given number is palindrome or not.</p> <p>b) Explain following vi editor commands:- display & hide line numbers.</p> <p>c) Explain following PERL commands:- display a string using program and command line.</p>
----	---

A)

```

echo "Enter a number"
read n
d=0
r=0
m=$n
while [ $n -gt 0 ]
do
d=$(( $n % 10 ))
r=$(( $r * 10 + $d ))
n=$(( $n / 10 ))
done
if [ $m -eq $r ]
then
echo "$m is Palindrome"
else
echo "$m is not Palindrome"
fi

```

B)**Displaying and hiding line numbers**

```

:set nu           Shows line number
:set nonu        Hide line numbers

```

C)**Printing a name**

Program:

```

print "Enter your name";
$name=<STDIN>;
print "Hello, ${name} .....Welcome To PERL\n";
Syntax: perl program.pl

```

Command line

Description: It will print perl file directly via command line.

Syntax: perl -e 'print "string\n"' filename.extension

17	a) Write a shell script program to enter a number and find its reverse. b) Explain following vi editor commands: - join the lines & undo the changes. c) Explain following commands:-hostname, remove a directory, ping, create a directory
----	---

A)

```

echo "Enter a number"
read n
d=0
r=0
m=$n
while [ $n -gt 0 ]
do
d=$(( $n % 10 ))
r=$(( $r * 10 + $d ))
n=$(( $n / 10 ))
done
echo "Reverse of $m = $r "

```

B)

Shift+j	Joins the two lines
:u	Undo Changes

C)**hostname**

Description: It is a label assigned to a device connected to a computer network & is used to identify the device in various forms.

Syntax: hostname: displays machine host name.
 hostname -f: displays fully qualified host and domain name.
 hostname -i: displays ip address of current machine.

Remove folder(empty)

Description: Removes folder which is empty.

Syntax: rm foldername
or rmdir foldername

Remove folder(non-empty)

Description: Removes folder which is non-empty.

Syntax: rm -rf foldername

make directory

Description: Creates new directory

Syntax: mdir folder_name

ping

Description: It is a basic internet program that allows a user to verify that a particular ip address exists & can accept requests. If you do ping www.google.com it will display its ip address. Use ctrl+c to stop.

Syntax: ping website _address

18	<p>a) Write a shell script program to concatenate two strings and display the resultant string along with its length.</p> <p>b) Explain following vi editor commands:- quit the file with/without saving the changes.</p> <p>c) Explain following PERL commands:- Program to perform all arithmetic operations.</p>
----	---

A)

```

echo "Enter string 1"
read name1
echo "Enter string 2"
read name2
name3=$name1$name2
echo "Concatenated string is $name3 "
len=`expr length $name3`
echo "Length=$len"

```

B)**Saving and quitting the file**

```

:wq          Saves the file and quit.
:q!         Unsave the file and quit

```

C)**Program:**

```

print "Enter two numbers\n";
$a=<STDIN>;
$b=<STDIN>;
$m=$a + $b;
$n=$a - $b;
$o=$a * $b;
$p=$a / $b;
print "Addition=${m}\n";
print "Subtraction=${n}\n";
print "Multiplication=${o}\n";
print "Division=${p}\n";

```

Syntax: perl program.pl

19	<p>a) Write a shell script program to check whether given string is palindrome or not.</p> <p>b) Explain following vi editor commands: - display & hide line numbers.</p> <p>c) Explain following commands:- traceroute, list all directories,</p>
----	--

A)

```

echo "Enter a string"
read name
name1=$( echo $name | rev )
if [ $name = $name1 ]
then
echo "$name is palindrome"
else
echo "$name is not palindrome"
fi

```

B)**Displaying and hiding line numbers**

```

:set nu           Shows line number
:set nonu        Hide line numbers

```

C)**Trace Route**

Description: Trace the route the packets take between your system & the host named. A hand utility to view no of hops & response time to get a remote system or website is traceroute, you need an internet connection to make use of this tool.

Syntax: traceroute website:Displays the all possible roots.

ls

Description: It shows directory

Syntax: ls

20	a) Write a shell script program to swap the values in two variables. b) Explain following vi editor commands: - copy paste specified no.of lines. c) Explain following commands:- tracepath, whoami, ping, change a directory.
----	--

A)

```

echo -n "Enter the value of x: "
read x
echo -n "Enter the value of y: "
read y
echo -n "Before swapping X=$x and Y=$y"
t=$x
x=$y
y=$t
echo -n "After swapping X=$x and Y=$y"

```

B)**Copy - Paste**

y/Y	Copy(Yank)
p/P	Paste
4yy	No of lines copy

C)**Trace Path**

Description: It shows the shortest path for reaching to that website.

Syntax: tracepath website

whoami

Description: Shows who logged in

Syntax: whoami

ping

Description: It is a basic internet program that allows a user to verify that a particular ip address exists & can accept requests. If you do ping www.google.com it will display its ip address. Use ctrl+c to stop.

Syntax: ping website _address

Change directory

Description: Changes the directory

Syntax: cd foldername

21	a) Write a shell script program to check whether given number is Armstrong or not. b) Explain following vi editor commands:- join the lines & undo the changes. c) Write a PERL program to fetch the user name given as the input.
----	--

A)

```

echo "Enter a number"
read n
d=0
sum=0
r=0
m=$n
while [ $n -gt 0 ]
do
d=$(( $n % 10 ))
r=`expr $d*$d*$d`
n=$(( $n / 10 ))
sum=$(( $sum + $r ))
done
if [ $m -eq $sum ]
then
echo "$m is Armstrong"
else
echo "$m is not Armstrong"
fi

```

B)

Shift+j	Joins the two lines
:u	Undo Changes

C)**Printing a name****Program:**

```

print "Enter your name";
$name=<STDIN>;
print "Hello, ${name} .....Welcome To PERL\n";

```

Syntax: perl program.pl

22	a) Write a shell script program to perform all arithmetic operations on two numbers. b) Explain following vi editor commands:- display & hide line numbers. c) Explain following commands:- nslookup, who, netstat, display contents of a file,
----	---

A)

```

echo -n "Enter first number"
read a
echo -n "Enter second number"
read b
val1=`expr $a + $b`
val2=`expr $a - $b`
val3=`expr $a \* $b`
val4=`expr $a / $b`
echo "Addition=$val1"
echo "Subtraction=$val2"
echo "Multiplication=$val3"
echo "Division=$val4"

```

B)**Displaying and hiding line numbers**

```

:set nu           Shows line number
:set nonu        Hide line numbers

```

C)**Name Server Lookup**

Description :It is useful tool for finding information about a named domain.

Syntax: nslookup website_address:Displays name & address.
 nslookup ip_address:Displays address & name.

who

Description: Show who is logged in.

syntax: who

Netstat

Description: Most useful and very versatile tool for finding connection to and from the host.

Syntax: netstat
 netstat -a:Displays all the connections.
 netstat -l:Lists only listening ports.
 netstat -g:Display all multicast network subscribed by host.

Display content of file

Description: It will display the contents of file.

Syntax: vi filename.extension
Or cat filename.extension

23	<p>a) Write a shell script program to enter a number and find its reverse.</p> <p>b) Explain following vi editor commands:- join the lines & undo the changes.</p> <p>c) Explain following awk commands:- Insert the records of 10 employees with the fields : Name, Designation, Department, Salary. Print all the lines, count no. of lines, display line numbers.</p>
----	--

A)

```

echo "Enter a number"
read n
d=0
r=0
m=$n
while [ $n -gt 0 ]
do
d=$(( $n % 10 ))
r=$(( $r * 10 + $d ))
n=$(( $n / 10 ))
done
echo "Reverse of $m = $r "

```

B)

Shift+j	Joins the two lines
:u	Undo Changes

C)

Create a file employee with field name, designation, department, salary
Insert at least 10 records.
>>>vi employee.txt

Default behavior of awk.

Description: By default the awk prints the data from specified file.
Syntax: awk '{print}' filename.extension

Count the no of line in a file.

Description: It will result the no of lines in the file.
Syntax: awk 'END {print NR}' filename.extension

Display line number to & from.

Description: It displays line numbers only to and from
Syntax: awk 'NR==to,NR==from {print NR,\$0}' filename.extension

24	<p>a) Write a shell script program to concatenate two strings and display the resultant string along with its length.</p> <p>b) Explain following vi editor commands:- to delete a word & complete line.</p> <p>c) Explain following commands:- findsmb, create a directory, hostname, remove a directory, process id.</p>
----	--

A)

```

echo "Enter string 1"
read name1
echo "Enter string 2"
read name2
name3=$name1$name2
echo "Concatenated string is $name3 "
len=`expr length $name3`
echo "Length=$len"

```

B)**Deleting Commands**

dw	Deletes the current word
dd	Deletes the current line

C)**Findsmb**

Description: It is used to list information about machines that respond to SMB name queries.
e.g: Windows based machines sharing their hard disks.

Syntax: findsmb

make directory

Description: Creates new directory

Syntax: mkdir folder_name

hostname

Description: It is a label assigned to a device connected to a computer network & is used to identify the device in various forms.

Syntax: hostname: displays machine host name.
 hostname -f: displays fully qualified host and domain name.
 hostname -i: displays ip address of current machine.

Remove folder(empty)

Description: Removes folder which is empty.

Syntax: rm foldername
or rmdir foldername

Remove folder(non-empty)

Description: Removes folder which is non-empty.

Syntax: rm -rf foldername

Process

ps pid - Checking for the process status of single status.

25	<p>a) Write a shell script program to print first n numbers of Fibonacci series.</p> <p>b) Explain following vi editor commands:- to delete a word & complete line.</p> <p>c) Explain following awk commands:- :- Insert the records of 10 employees with the fields : Name, Designation, Department, Salary. Display line numbers from 3 to 7, print lines with more than 30 characters, display all lines.</p>
----	--

A)

```

a=0
b=1
echo -n "Enter nth term"
read n
for ((i=0;i<=n;i++))
do
echo -n "$a "
c=$((a+b))
a=$b
b=$c
done

```

B)**Deleting Commands**

dw	Deletes the current word
dd	Deletes the current line

C)

Create a file employee with field name, designation, department, salary
Insert at least 10 records.
>>>vi employee.txt

Display line number to & from.

Description: It displays line numbers only to and from

Syntax: awk 'NR==3,NR==7 {print NR,\$0}' filename.extension

Printing the line more than number of characters.

Description: It will print all the lines having more than number of characters.

Syntax: awk 'length(\$0)>nooflines' filename.extension

Default behavior of awk.

Description: By default the awk prints the data from specified file.

Syntax: awk '{print}' filename.extension

26	a) Write a shell script program to print sum of first n natural numbers. b) Explain following vi editor commands:- join the lines & undo the changes. c) Explain following commands:- ping, remove a file, kill, nslookup, top
----	--

A)

```

a=0
b=1
echo -n "Enter nth term"
read n
for ((i=0;i<=n;i++))
do
echo -n "$a "
c=$((a+b))
a=$b
b=$c
done

```

B)

Shift+j	Joins the two lines
:u	Undo Changes

C)**ping**

Description: It is a basic internet program that allows a user to verify that a particular ip address exists & can accept requests. If you do ping www.google.com it will display its ip address. Use ctrl+c to stop.

Syntax: ping website _address

Remove a file

Description: Remove a file.

Syntax: rm filename.extension

kill pid - To kill any process.

Name Server Lookup

Description :It is useful tool for finding information about a named domain.

Syntax: nslookup website_address:Displays name & address.
nslookup ip_address:Displays address & name.

Top

Description: It will show all running processes on Linux Machine.

Syntax: top

27	<p>a) Write a shell script program to check whether given number is palindrome or not.</p> <p>b) Explain following vi editor commands:- to delete a word & complete line.</p> <p>c) Explain following commands:- Insert the records of 10 employees with the fields : Name, Designation, Department, Salary. Display employees of IT department, Employees whose salary is greater than Rs.50000/-</p>
----	--

A)

```

echo "Enter a number"
read n
d=0
r=0
m=$n
while [ $n -gt 0 ]
do
d=$(( $n % 10 ))
r=$(( $r * 10 + $d ))
n=$(( $n / 10 ))
done
if [ $m -eq $r ]
then
echo "$m is Palindrome"
else
echo "$m is not Palindrome"
fi

```

B)**Deleting Commands**

dw	Deletes the current word
dd	Deletes the current line

C)

Create a file employee with field name, designation, department, salary

Insert at least 10 records.

>>>vi employee.txt

Prints the lines which matches the given pattern.

Description: It prints all the lines having matching string.

Syntax: awk '/IT/ {print}' filename.extension

Find the employees having salary greater than amount

Description: It will result the name of employees having salary greater than amount.

Syntax: awk '\$4>50000' filename.extension

28	<p>a) Write a shell script program to enter a number and find its reverse.</p> <p>b) Explain following vi editor commands:- quit the file with/without saving the changes.</p> <p>c) Explain following commands:-netstat, create a file, nice, ping, head</p>
----	---

A)

```

echo "Enter a number"
read n
d=0
r=0
m=$n
while [ $n -gt 0 ]
do
d=$(( $n % 10 ))
r=$(( $r * 10 + $d ))
n=$(( $n / 10 ))
done
echo "Reverse of $m = $r "

```

B)**Saving and quitting the file**

```

:wq          Saves the file and quit.
:q!         Unsave the file and quit

```

C)**Netstat**

Description: Most useful and very versatile tool for finding connection to and from the host.

```

Syntax:      netstat
              netstat -a:Displays all the connections.
              netstat -l:Lists only listening ports.
              netstat -g:Display all multicast network subscribed by host.

```

create a file

Description: Creating file

```
Syntax:      cat>filename.extension
```

Nice

Description: Linux can run lot of processes at a time which can slow down the speed of some high priority processes and results in poor performance. To avoid this you can tell your machine to prioritize process as per your requirement. This priority is called as niceness in Linux. It has value between -20 to 19. The lower niceness value is higher priority given to the task. Default value of all the process is zero.

```

Syntax: nice -n niceness_value process_name - To start process with niceness value
        sudo renice niceness_value -p process_id - To change the niceness value

```

ping

Description: It is a basic internet program that allows a user to verify that a particular ip address exists & can accept requests. If you do ping www.google.com it will display its ip address. Use ctrl+c to stop.

```
Syntax: ping website_address
```

head

Description: Shows no of lines in the file from head

```
Syntax: head -n filename.extension
```

29	<p>a) Write a shell script program to check whether given string is palindrome or not.</p> <p>b) Explain following vi editor commands: - copy paste specified no.of lines.</p> <p>c) Explain following commands:- Insert the records of 10 employees with the fields : Name, Designation, Department, Salary. Search a specific string (with & without ignoring case), display last field.</p>
----	--

A)

```

echo "Enter a string"
read name
name1=$( echo $name | rev )
if [ $name = $name1 ]
then
echo "$name is palindrome"
else
echo "$name is not palindrome"
fi

```

B)**Copy - Paste**

y/Y	Copy(Yank)
p/P	Paste
4yy	No of lines copy

C)

Create a file employee with field name, designation, department, salary
Insert at least 10 records.
>>>vi employee.txt

Search a string in a file.

Description: It will result all the lines having specified string.

Syntax: grep "string" filename.extension

Or grep -i "string" filename.extension

Use of NF built-in variables

Description: This command gives records of first and last field.

Syntax: awk '{print \$1,\$NF}' filename.extension

30	<p>a) Write a shell script program to concatenate two strings and display the resultant string along with its length.</p> <p>b) Explain following vi editor commands:- display & hide line numbers.</p> <p>c) Explain following commands:- hostname, tail, df, free</p>
----	---

A)

```

echo "Enter string 1"
read name1
echo "Enter string 2"
read name2
name3=$name1$name2
echo "Concatenated string is $name3 "
len=`expr length $name3`
echo "Length=$len"

```

B)**Displaying and hiding line numbers**

```

:set nu           Shows line number
:set nonu        Hide line numbers

```

C)**hostname**

Description: It is a label assigned to a device connected to a computer network & is used to identify the device in various forms.

Syntax: hostname: displays machine host name.
 hostname -f: displays fully qualified host and domain name.
 hostname -i: displays ip address of current machine.

tail

Description: Shows no of lines in the file from bottom

Syntax: tail -n filename.extension

Disk Free

Description: It shows free space.

Syntax: df - It shows free space on disk.
 df -h - It shows information in readable format.

Free

Description: It is use to display free space on Linux.

Syntax: free - It shows free as well as utilized space.
 free -m - It shows information in megabytes.
 free -g - It shows information in gigabytes.