UNIX LAB QUESTIONS WITH SOLUTONS

|  |  |
| --- | --- |
| 1 | 1. Write a shell script program to swap the values in two variables. 2. Explain following vi editor commands: - quit the file with/without saving the changes. 3. Explain following commands:- echo, hostname, head, ping |

**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 | 1. Write a shell script program to perform all arithmetic operations on two numbers. 2. Explain following vi editor commands: - display & hide line numbers. 3. Explain following commands:- create users,group,add users to group,change group id. |

**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 | 1. Write a shell script program to print first n numbers of Fibonacci series. 2. Explain following vi editor commands: - copy paste specified no.of lines. 3. 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 | 1. Write a shell script program to simulate a simple calculator. 2. Explain following vi editor commands: - to delete a word & complete line. 3. Explain following sed commands:- view range of a file, replace a word, insert a blank line, delete a line. |

**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

|  |  |
| --- | --- |
| 5 | 1. Write a shell script program to print sum of first n natural numbers 2. Explain following vi editor commands:- change the case of character 3. Explain following commands:-traceroute, display contents of file, tracepath, remove a directory |

**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)**

|  |  |
| --- | --- |
| Shift+~ | Changes case of characters |

**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.

**Display content of file**

Description: It will display the contents of file.

Syntax: vi filename.extension

Or cat filename.extension

**Trace Path**

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

Syntax: tracepath website

**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

|  |  |
| --- | --- |
| 6 | 1. Write a shell script program to input a number and check whether it is even or odd 2. Explain following vi editor commands:- to delete a word & complete line 3. Explain following sed commands:- print a line, delete a line, duplicate the lines, change a line. |

**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.

Synatx: sed ‘/specificword/c newline’ filename.extension

|  |  |
| --- | --- |
| 7 | 1. Write a shell script program to three numbers and find the largest among them. 2. Explain following vi editor commands: - join the lines & undo the changes. 3. Explain following commands:- findsmb, remove a file, ifconfig, head |

**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 informationabout machines thatrespond to SMB name queries.

e.g: Windows based machinessharing 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 | 1. Write a shell script program to concatenate two strings and display the resultant string along with its length. 2. Explain following vi editor commands:- to delete a word & complete line. 3. Explain following sed commands:- add a line before & after a match, replace a word inside the range, change a line. |

**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.

Synatx: sed ‘/specificword/i newline’ filename.extension

**Adding a line after a specific word.**

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

Synatx: 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/oldwrord/newword/g’ filename.extension

or sed ‘to,from s/oldwrord/newword/gi’ filename.extension

**Changing whole line.**

Description: It will change the line having specific word.

Synatx: sed ‘/specificword/c newline’ filename.extension

|  |  |
| --- | --- |
| 9 | 1. Write a shell script program to check whether given string is palindrome or not. 2. Explain following vi editor commands:- copy paste specified no.of lines 3. 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 | 1. Write a shell script program to enter a number and find its reverse. 2. Explain following vi editor commands: - quit the file with/without saving the changes. 3. Explain following sed commands:- view non-consecutive lines, view a range of lines, view entire file except a given range , print specific line. |

**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 | 1. Write a shell script program to check whether given number is palindrome or not. 2. Explain following vi editor commands: - display & hide line numbers. 3. 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 | 1. Write a shell script program to check whether given number is Armstrong or not. 2. Explain following vi editor commands: - to delete a word & complete line. 3. Explain following grep commands:- display n lines after, before and around the match, display line numbers. |

**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 | 1. Write a shell script program to print first n numbers of Fibonacci series. 2. Explain following vi editor commands:- copy paste specified no.of lines. 3. Explain following commands:- tracepath,head, netstat, list all directories. |

**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 | 1. Write a shell script program to perform all arithmetic operations on two numbers. 2. Explain following vi editor commands:- display & hide line numbers. 3. 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. |

**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 | 1. Write a shell script program to print sum of first n natural numbers. 2. Explain following vi editor commands:- copy paste specified no.of lines. 3. 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 | 1. Write a shell script program to check whether given number is palindrome or not. 2. Explain following vi editor commands:- display & hide line numbers. 3. Explain following PERL commands:- display a string using program and command line. |

**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 | 1. Write a shell script program to enter a number and find its reverse. 2. Explain following vi editor commands: - join the lines & undo the changes. 3. 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 | 1. Write a shell script program to concatenate two strings and display the resultant string along with its length. 2. Explain following vi editor commands:- quit the file with/without saving the changes. 3. Explain following PERL commands:- Program to perform all arithmetic operations. |

**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 | 1. Write a shell script program to check whether given string is palindrome or not. 2. Explain following vi editor commands: - display & hide line numbers. 3. Explain following commands:- traceroute, list all directories, |

**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 | 1. Write a shell script program to swap the values in two variables. 2. Explain following vi editor commands: - copy paste specified no.of lines. 3. 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 | 1. Write a shell script program to check whether given number is Armstrong or not. 2. Explain following vi editor commands:- join the lines & undo the changes. 3. 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 | 1. Write a shell script program to perform all arithmetic operations on two numbers. 2. Explain following vi editor commands:- display & hide line numbers. 3. 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 loged 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 | 1. Write a shell script program to enter a number and find its reverse. 2. Explain following vi editor commands:- join the lines & undo the changes. 3. 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. |

**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 | 1. Write a shell script program to concatenate two strings and display the resultant string along with its length. 2. Explain following vi editor commands:- to delete a word & complete line. 3. Explain following commands:- findsmb, create a directory, hostname, remove a directory, process id. |

**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 informationabout machines thatrespond to SMB name queries.

e.g: Windows based machinessharing their hard disks.

Syntax: findsmb

**make directory**

Description: Creates new directory

Syntax: mdir 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 | 1. Write a shell script program to print first n numbers of Fibonacci series. 2. Explain following vi editor commands:- to delete a word & complete line. 3. 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. |

**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 | 1. Write a shell script program to print sum of first n natural numbers. 2. Explain following vi editor commands:- join the lines & undo the changes. 3. 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 | 1. Write a shell script program to check whether given number is palindrome or not. 2. Explain following vi editor commands:- to delete a word & complete line. 3. 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/- |

**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 | 1. Write a shell script program to enter a number and find its reverse. 2. Explain following vi editor commands:- quit the file with/without saving the changes. 3. Explain following commands:-netstat, create a file, nice, ping, head |

**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 | 1. Write a shell script program to check whether given string is palindrome or not. 2. Explain following vi editor commands: - copy paste specified no.of lines. 3. 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. |

**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 | 1. Write a shell script program to concatenate two strings and display the resultant string along with its length. 2. Explain following vi editor commands:- display & hide line numbers. 3. Explain following commands:- hostname, tail, df, free |

**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.