Date: 25-03-2021

Session 1

Add a new administrator and enter through that user.

Keyboard shortcuts -

ctrl+alt+t terminal

windows+e home folder

windows +f firefox browser

Long term support (LTS)

1. lsb\_release -a

Output : No LSB modules are available.

Distributor ID: Ubuntu

Description: Ubuntu 20.04.2 LTS

Release: 20.04

Codename: focal

.bashrc

* Commands entered will be first searched in bashrc file.

2. sudo apt install vim git gcc g++ nodejs npm terminator python3-dev python3-pip python3-setuptools neofetch vlc

* To install required packages.

3.

To get path of working directory

pwd

/home/divyah/Desktop/Exp

To get into home directory

cd ~

echo $PATH

/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/usr/games:/usr/local/games:/snap/bin

sudo vim ~/.bashrc

[sudo] password for divyah:

At the end of the file add the following

export MYPATH=/home/divyah/Desktop/Exp

export PATH=$PATH:$MYPATH

Esc :wq to save

source ~/.bashrc

echo $PATH

/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/usr/games:/usr/local/games:/snap/bin:/home/divyah/Desktop/Exp

neofetch

Lists all parameters

uname -a

Linux admin1-HP-280-G4-MT-Business-PC 5.8.0-45-generic #51~20.04.1-Ubuntu SMP Tue Feb 23 13:46:31 UTC 2021 x86\_64 x86\_64 x86\_64 GNU/Linux

Create a file

gedit first.c

See contents

file first.c

first.c: empty

To see the permissions

ls -l first.c

-rw-rw-r-- 1 divyah divyah 0 Mar 25 09:56 first.c

To change/add permissions

sudo chmod u+x first.c

ls -l first.c

-rwxrw-r-- 1 divyah divyah 0 Mar 25 09:56 first.c

To list all the hardwares

sudo lspci

00:00.0 Host bridge: Intel Corporation 8th Gen Core 4-core Desktop Processor Host Bridge/DRAM Registers [Coffee Lake S] (rev 08)

00:02.0 VGA compatible controller: Intel Corporation 8th Gen Core Processor Gaussian Mixture Model

00:12.0 Signal processing controller: Intel Corporation Cannon Lake PCH Thermal Controller (rev 10)

00:14.0 USB controller: Intel Corporation Cannon Lake PCH USB 3.1 xHCI Host Controller (rev 10)

00:14.2 RAM memory: Intel Corporation Cannon Lake PCH Shared SRAM (rev 10)

00:15.0 Serial bus controller [0c80]: Intel Corporation Cannon Lake PCH Serial IO I2C Controller #0 (rev 10)

00:15.1 Serial bus controller [0c80]: Intel Corporation Cannon Lake PCH Serial IO I2C Controller #1 (rev 10)

00:16.0 Communication controller: Intel Corporation Cannon Lake PCH HECI Controller (rev 10)

00:17.0 SATA controller: Intel Corporation Cannon Lake PCH SATA AHCI Controller (rev 10)

00:1c.0 PCI bridge: Intel Corporation Cannon Lake PCH PCI Express Root Port #6 (rev f0)

00:1c.6 PCI bridge: Intel Corporation Cannon Lake PCH PCI Express Root Port #7 (rev f0)

00:1e.0 Communication controller: Intel Corporation Cannon Lake PCH Serial IO UART Host Controller (rev 10)

00:1f.0 ISA bridge: Intel Corporation H370 Chipset LPC/eSPI Controller (rev 10)

00:1f.3 Audio device: Intel Corporation Cannon Lake PCH cAVS (rev 10)

00:1f.4 SMBus: Intel Corporation Cannon Lake PCH SMBus Controller (rev 10)

00:1f.5 Serial bus controller [0c80]: Intel Corporation Cannon Lake PCH SPI Controller (rev 10)

01:00.0 PCI bridge: Integrated Technology Express, Inc. IT8893E PCIe to PCI Bridge (rev 52)

03:00.0 Ethernet controller: Realtek Semiconductor Co., Ltd. RTL8111/8168/8411 PCI Express Gigabit Ethernet Controller (rev 15)

To know storage related information

sudo fdisk -l

Disk /dev/loop0: 54.97 MiB, 57614336 bytes, 112528 sectors

Units: sectors of 1 \* 512 = 512 bytes

Sector size (logical/physical): 512 bytes / 512 bytes

I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk /dev/loop1: 55.48 MiB, 58159104 bytes, 113592 sectors

Units: sectors of 1 \* 512 = 512 bytes

Sector size (logical/physical): 512 bytes / 512 bytes

I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk /dev/loop2: 62.9 MiB, 65105920 bytes, 127160 sectors

Units: sectors of 1 \* 512 = 512 bytes

Sector size (logical/physical): 512 bytes / 512 bytes

I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk /dev/loop3: 218.102 MiB, 229629952 bytes, 448496 sectors

Units: sectors of 1 \* 512 = 512 bytes

Sector size (logical/physical): 512 bytes / 512 bytes

I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk /dev/loop4: 64.79 MiB, 67915776 bytes, 132648 sectors

Units: sectors of 1 \* 512 = 512 bytes

Sector size (logical/physical): 512 bytes / 512 bytes

I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk /dev/loop5: 49.8 MiB, 52203520 bytes, 101960 sectors

Units: sectors of 1 \* 512 = 512 bytes

Sector size (logical/physical): 512 bytes / 512 bytes

I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk /dev/loop6: 240.82 MiB, 252493824 bytes, 493152 sectors

Units: sectors of 1 \* 512 = 512 bytes

Sector size (logical/physical): 512 bytes / 512 bytes

I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk /dev/loop7: 27.9 MiB, 28405760 bytes, 55480 sectors

Units: sectors of 1 \* 512 = 512 bytes

Sector size (logical/physical): 512 bytes / 512 bytes

I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk /dev/sda: 931.53 GiB, 1000204886016 bytes, 1953525168 sectors

Disk model: WDC WD10EZEX-60W

Units: sectors of 1 \* 512 = 512 bytes

Sector size (logical/physical): 512 bytes / 4096 bytes

I/O size (minimum/optimal): 4096 bytes / 4096 bytes

Disklabel type: gpt

Disk identifier: C049F5B5-F868-46BB-B0B8-28D9FF7EEBE9

Device Start End Sectors Size Type

/dev/sda1 2048 1050623 1048576 512M EFI System

/dev/sda2 1050624 1953523711 1952473088 931G Linux filesystem

Disk /dev/loop8: 51.4 MiB, 53522432 bytes, 104536 sectors

Units: sectors of 1 \* 512 = 512 bytes

Sector size (logical/physical): 512 bytes / 512 bytes

I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk /dev/loop9: 32.28 MiB, 33841152 bytes, 66096 sectors

Units: sectors of 1 \* 512 = 512 bytes

Sector size (logical/physical): 512 bytes / 512 bytes

I/O size (minimum/optimal): 512 bytes / 512 bytes

Task Manager

sudo top

top - 10:06:42 up 1:17, 1 user, load average: 0.45, 0.42, 0.44

Tasks: 231 total, 1 running, 230 sleeping, 0 stopped, 0 zombie

%Cpu(s): 1.2 us, 0.3 sy, 0.0 ni, 98.3 id, 0.2 wa, 0.0 hi, 0.1 si, 0.0 st

MiB Mem : 7797.4 total, 2433.2 free, 2153.9 used, 3210.3 buff/cache

MiB Swap: 2048.0 total, 2048.0 free, 0.0 used. 4661.0 avail Mem

PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND

11288 divyah 20 0 3074320 414752 150616 S 4.3 5.2 1:07.50 Web Content

18758 divyah 20 0 819884 53400 39760 S 2.0 0.7 0:12.38 gnome-terminal-

9446 divyah 20 0 861804 77860 46000 S 1.7 1.0 3:03.16 Xorg

9629 divyah 20 0 4642928 352792 105096 S 1.0 4.4 3:08.65 gnome-shell

10347 divyah 20 0 4160568 519960 216264 S 0.7 6.5 8:49.74 firefox

10742 divyah 20 0 2898488 357352 135396 S 0.7 4.5 3:50.36 Web Content

18706 divyah 20 0 2470288 147480 99224 S 0.7 1.8 0:14.55 Web Content

11 root 20 0 0 0 0 I 0.3 0.0 0:09.94 rcu\_sched

1 root 20 0 167532 11452 8348 S 0.0 0.1 0:02.10 systemd

2 root 20 0 0 0 0 S 0.0 0.0 0:00.00 kthreadd

3 root 0 -20 0 0 0 I 0.0 0.0 0:00.00 rcu\_gp

4 root 0 -20 0 0 0 I 0.0 0.0 0:00.00 rcu\_par\_gp

6 root 0 -20 0 0 0 I 0.0 0.0 0:00.00 kworker/0:0H-kblockd

9 root 0 -20 0 0 0 I 0.0 0.0 0:00.00 mm\_percpu\_wq

10 root 20 0 0 0 0 S 0.0 0.0 0:00.10 ksoftirqd/0

12 root rt 0 0 0 0 S 0.0 0.0 0:00.01 migration/0

13 root -51 0 0 0 0 S 0.0 0.0 0:00.00 idle\_inject/0

14 root 20 0 0 0 0 S 0.0 0.0 0:00.00 cpuhp/0

15 root 20 0 0 0 0 S 0.0 0.0 0:00.00 cpuhp/1

16 root -51 0 0 0 0 S 0.0 0.0 0:00.00 idle\_inject/1

17 root rt 0 0 0 0 S 0.0 0.0 0:00.11 migration/1

18 root 20 0 0 0 0 S 0.0 0.0 0:00.11 ksoftirqd/1

20 root 0 -20 0 0 0 I 0.0 0.0 0:00.00 kworker/1:0H-kblockd

21 root 20 0 0 0 0 S 0.0 0.0 0:00.00 cpuhp/2

22 root -51 0 0 0 0 S 0.0 0.0 0:00.00 idle\_inject/2

23 root rt 0 0 0 0 S 0.0 0.0 0:00.11 migration/2

24 root 20 0 0 0 0 S 0.0 0.0 0:00.06 ksoftirqd/2

25 root 20 0 0 0 0 I 0.0 0.0 0:00.88 kworker/2:0-mm\_percpu\_wq

Changing ownerships

ls -l first.c

-rw-rw-r-- 1 divyah divyah 0 Mar 25 09:56 first.c

sudo chmod u+x first.c

ls -l first.c

-rwxrw-r-- 1 divyah divyah 0 Mar 25 09:56 first.c

ls -l first.c

-rwxrw-r-- 1 divyah divyah 0 Mar 25 09:56 first.c

ls

first.c

ls -l

total 0

-rwxrw-r-- 1 divyah divyah 0 Mar 25 09:56 first.c

chown- change ownership

sudo chown admin1 first.c

[sudo] password for divyah:

ls -l

total 0

-rwxrw-r-- 1 admin1 divyah 0 Mar 25 09:56 first.c

divyah@admin1-HP-280-G4-MT-Business-PC:~/Desktop$ ls -l

total 4

drwxrwxr-x 2 divyah divyah 4096 Mar 25 09:56 Exp

divyah@admin1-HP-280-G4-MT-Business-PC:~/Desktop$ gedit xc.txt

divyah@admin1-HP-280-G4-MT-Business-PC:~/Desktop$ sudo chown -R admin1 xc.txt

R- recursive

divyah@admin1-HP-280-G4-MT-Business-PC:~/Desktop$ ls -l xc.txt

-rw-rw-r-- 1 admin1 divyah 0 Mar 25 10:17 xc.txt

divyah@admin1-HP-280-G4-MT-Business-PC:~/Desktop$ mkdir dummy

divyah@admin1-HP-280-G4-MT-Business-PC:~/Desktop$ sudo chown -R admin1 dummy

divyah@admin1-HP-280-G4-MT-Business-PC:~/Desktop$ ls -l dummy

total 0

(Admin1 will get ownership of files present in dummy directory)

Install MongoDB

mongo

MongoDB shell version v4.4.4

connecting to: mongodb://127.0.0.1:27017/?compressors=disabled&gssapiServiceName=mongodb

Error: couldn't connect to server 127.0.0.1:27017, connection attempt failed: SocketException: Error connecting to 127.0.0.1:27017 :: caused by :: Connection refused :

connect@src/mongo/shell/mongo.js:374:17

@(connect):2:6

exception: connect failed

exiting with code 1

divyah@admin1-HP-280-G4-MT-Business-PC:~$ sudo systemctl enable mongod

Created symlink /etc/systemd/system/multi-user.target.wants/mongod.service → /lib/systemd/system/mongod.service.

divyah@admin1-HP-280-G4-MT-Business-PC:~$ sudo systemctl restart mongod

mongo

MongoDB shell version v4.4.4

connecting to: mongodb://127.0.0.1:27017/?compressors=disabled&gssapiServiceName=mongodb

Implicit session: session { "id" : UUID("8302a83e-db56-4ced-8db4-5ae304fe2895") }

MongoDB server version: 4.4.4

Welcome to the MongoDB shell.

For interactive help, type "help".

For more comprehensive documentation, see

https://docs.mongodb.com/

Questions? Try the MongoDB Developer Community Forums

https://community.mongodb.com

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The server generated these startup warnings when booting:

2021-03-25T10:31:09.613+05:30: Using the XFS filesystem is strongly recommended with the WiredTiger storage engine. See http://dochub.mongodb.org/core/prodnotes-filesystem

2021-03-25T10:31:11.489+05:30: Access control is not enabled for the database. Read and write access to data and configuration is unrestricted

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Enable MongoDB's free cloud-based monitoring service, which will then receive and display

metrics about your deployment (disk utilization, CPU, operation statistics, etc).

The monitoring data will be available on a MongoDB website with a unique URL accessible to you

and anyone you share the URL with. MongoDB may use this information to make product

improvements and to suggest MongoDB products and deployment options to you.

To enable free monitoring, run the following command: db.enableFreeMonitoring()

To permanently disable this reminder, run the following command: db.disableFreeMonitoring()

---

To exit

> exit

bye

Hierarchy

Database -> collection(table) -> records? Documents (one entry of json array or obj / one row)

db - object of mongodb class used to access functions in mongodb

1. Check databases present

> show dbs;

admin 0.000GB

company 0.000GB

config 0.000GB

local 0.000GB

mydb 0.000GB

1. Create database

>use mydb;

switched to db mydb

object.collection.function

> db.student.insert({

... name:"abc",

... usn:"1NT18IS001"

... });

WriteResult({ "nInserted" : 1 })

> db.student.insert({

... semester:6});

WriteResult({ "nInserted" : 1 })

nInserted - no. of documents inserted

1. To display

db.collection.find();

> db.student.find();

{ "\_id" : ObjectId("605c1d5add959ba3ab0a1be7"), "name" : "abc", "usn" : "1NT18IS001" }

{ "\_id" : ObjectId("605c1d93dd959ba3ab0a1be8"), "semester" : 6 }

1. To make display look better

> db.student.find().pretty();

{

"\_id" : ObjectId("605c1d5add959ba3ab0a1be7"),

"name" : "abc",

"usn" : "1NT18IS001"

}

{ "\_id" : ObjectId("605c1d93dd959ba3ab0a1be8"),

"semester" : 6

}

To install vscode

1. Download vs code deb file in browser
2. Open downloads and open terminal
3. sudo apt install gdebi
4. sudo gdebi code\_1.54.3-1615806378\_amd64.deb