

Python with Django

Day 1 Task

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Sem: 7th / Information technology

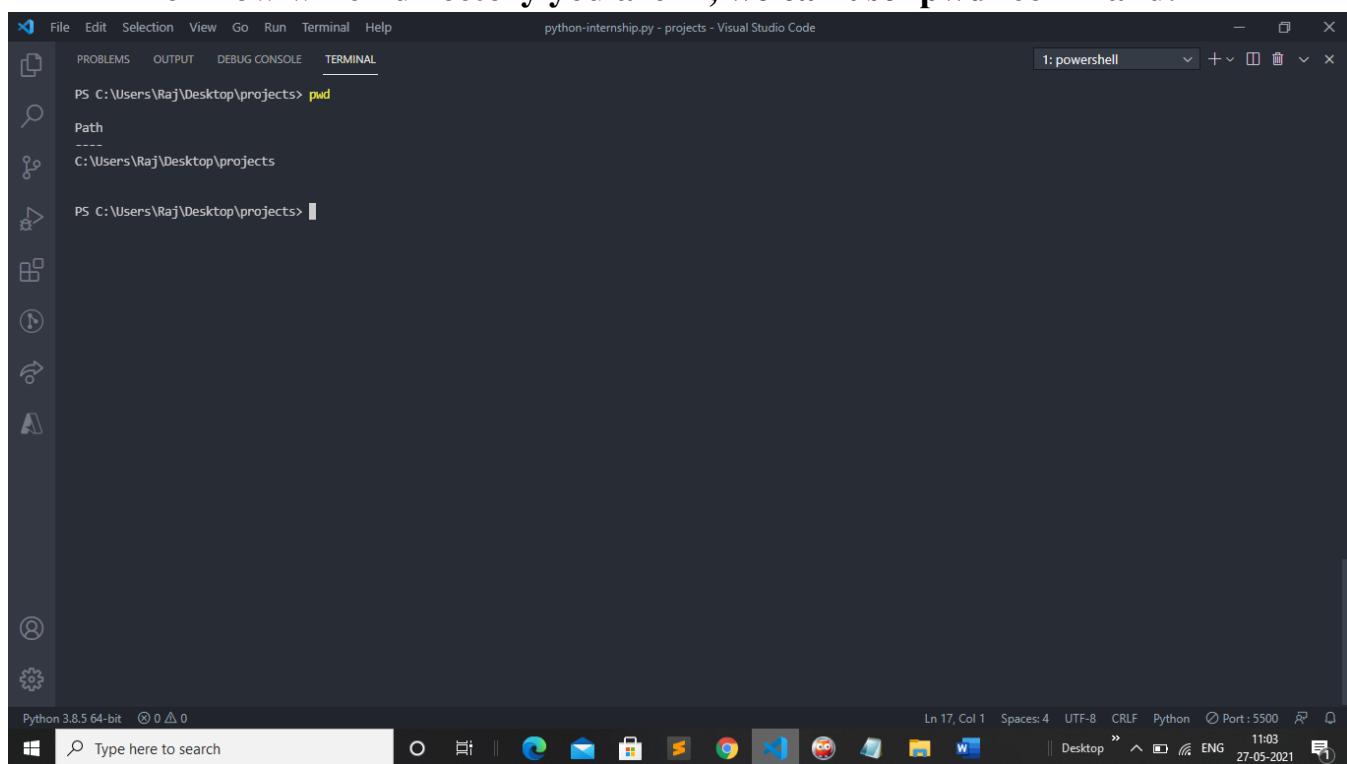
Course: Bachelor of Engineering

(1) Write 20 Linux commands with example

i. **pwd**

Get-Location

To know which directory you are in, we can use ‘pwd’ command.

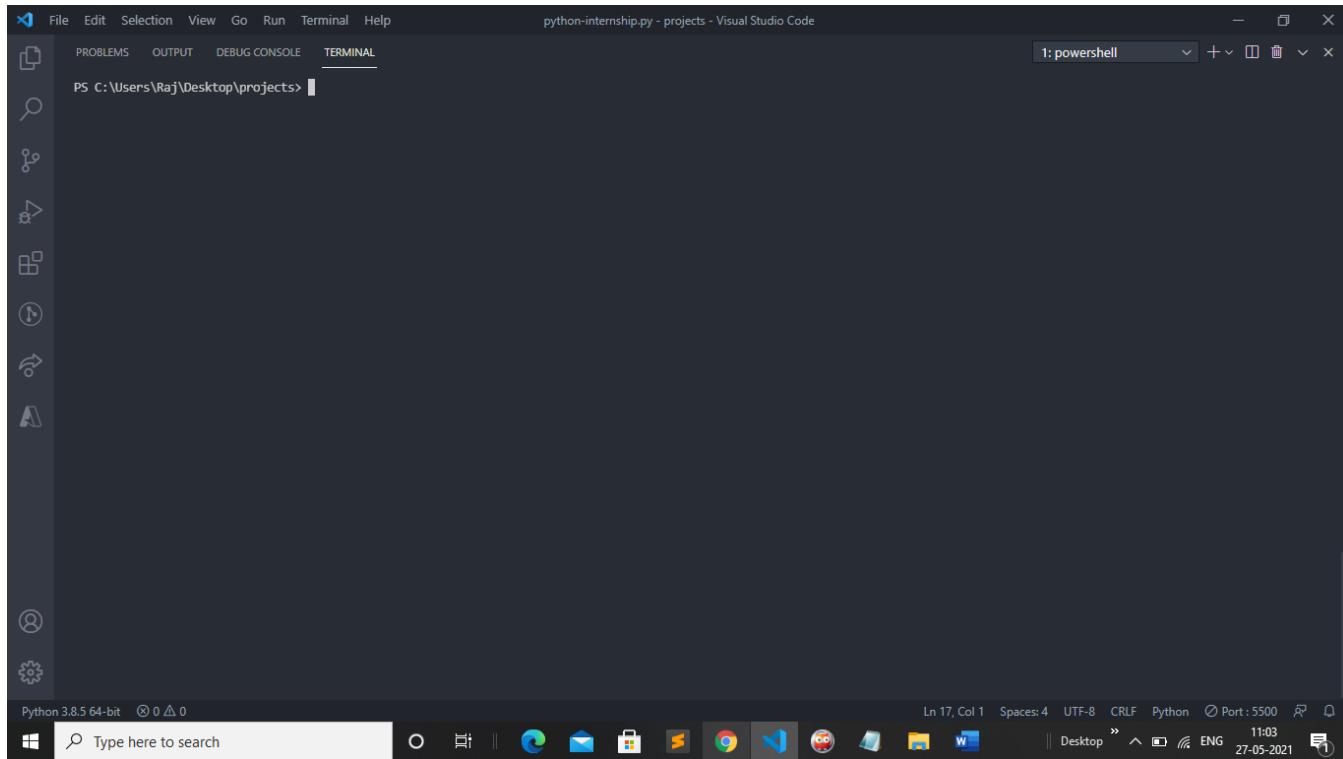


```
File Edit Selection View Go Run Terminal Help
python-internship.py - projects - Visual Studio Code
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
1: powershell
PS C:\Users\Raj\Desktop\projects> pwd
Path
-----
C:\Users\Raj\Desktop\projects

PS C:\Users\Raj\Desktop\projects>
```

ii. **clear** clear is a standard operating system command which is used to clear the terminal screen.

Syntax- \$ clear



iii. zip, unzip — Use zip to compress files into a zip archive, and unzip to extract files from a zip archive.

iv. ls

The ls command lists files and directories within the file system, and shows detailed information about them.

Syntax: \$ ls [OPTIONS] [FILES]

```

File Edit Selection View Go Run Terminal Help
python-internship.py - projects - Visual Studio Code
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
1: powershell + - ×
PS C:\Users\Raj\Desktop\projects> ls

Directory: C:\Users\Raj\Desktop\projects

Mode                LastWriteTime     Length Name
----                <-----           ----- 
-a---    26-05-2021 21:14          1458 index.html
-a---    27-05-2021 11:02          266 python-internship.py
-a---    26-05-2021 21:12          1498 style.css
-a---    26-05-2021 21:13         2728 to-do.js

PS C:\Users\Raj\Desktop\projects>

```

Python 3.8.5 64-bit ⑧ 0 △ 0

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Type here to search

v. exit

Exits from the terminal.

```

Windows PowerShell
PS C:\Users\Raj> exit

```

Type here to search

vi. mkdir mkdir command in Linux allows the user to create directories.

Syntax:

mkdir [options...] [directories ...]

```
File Edit Selection View Go Run Terminal Help
python-internship.py - projects - Visual Studio Code
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
1: powershell - X
PS C:\Users\Raj\Desktop\projects> mkdir newPractical
Directory: C:\Users\Raj\Desktop\projects
Mode LastWriteTime Length Name
---- ----- ----- ----
d---- 27-05-2021 11:05 newPractical
PS C:\Users\Raj\Desktop\projects>
```

Python 3.8.5 64-bit 0 △ 0

Type here to search

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vii. rmdir

The **rmdir** command removes the directory, specified by the Directory parameter, from the system.

Syntax:**rmdir [options...] [directories ...]**

```

Select Windows PowerShell (x86)
d----- 27-05-2021 11:19      projects
d----- 16-04-2021 12:53      SE_practical
-a---- 08-04-2021 15:32      162267 190163116003 AWP.pdf
-a---- 08-04-2021 15:33      141608 190163116003 AWP2.pdf
-a---- 08-04-2021 15:38      224055 190163116003 AWP_practical-exam.pdf
-a---- 05-09-2020 12:24      471214 190163116003 CHAVDA RAJ.pdf
-a---- 09-04-2021 15:17      419467 190163116003 Practical-1.pdf
-a---- 09-04-2021 15:26      348697 190163116003 Practical-2.pdf
-a---- 09-04-2021 15:22      238223 190163116003 Practical-3.pdf
-a---- 07-04-2021 13:59      281708 190163116003 practical_exam.pdf
-a---- 23-04-2021 17:34      763053 190163116013 SE_Assignment-2.pdf
-a---- 11-09-2020 13:11      1320 Cisco Packet Tracer.lnk
-a---- 02-09-2020 16:56      428 clock.html
-a---- 15-03-2021 11:48      318 date.html
-a---- 03-12-2020 19:34      1263 Firefox.lnk
-a---- 27-11-2020 00:54      76542 group list.pdf
-a---- 26-01-2021 17:06      499 hello.html
-a---- 24-05-2021 18:07      145647 keyboard-shortcuts-windows.pdf
-a---- 29-10-2020 19:26      308 login.html
-a---- 10-04-2021 18:24      1081064 MAJD.pdf
-a---- 27-11-2020 01:53      9229306 Mini_project-2.zip
-a---- 27-11-2020 01:47      9289778 mini-project ppt.pptx
-a---- 06-09-2020 16:35      1036 Nmap - Zmap GUI.lnk
-a---- 27-11-2020 01:51      1447203 output.pdf
-a---- 29-12-2020 14:27      196 prac-1.css
-a---- 29-12-2020 14:41      1458 prac-1.html
-a---- 17-09-2020 17:30      484736 PRACTICAL_exam.pdf
-a---- 09-09-2020 15:12      50292 PRITESH PATEL.pdf
-a---- 22-05-2021 14:47      341896 Raj Chavda_Fresher.pdf
-a---- 03-12-2020 19:49      2288550 scholarship-2020.pdf
-a---- 16-02-2021 16:55      117102 sem-6 tu.fee.pdf
-a---- 26-05-2021 17:11      138 SUMMER-INTERNSHIP.txt
-a---- 22-04-2021 18:06      1929 This PC.lnk
-a---- 01-03-2021 20:14      2695 WordPress.com.lnk

PS C:\Users\Raj\Desktop> rmdir clock.html
PS C:\Users\Raj\Desktop> ls

Directory: C:\Users\Raj\Desktop

Mode                LastWriteTime       Length Name
----                <-----           <----- 
d----- 27-05-2021 11:33            1
d----- 27-05-2021 11:33        1313
d----- 27-05-2021 11:33            2
d----- 27-05-2021 11:33            3
d----- 27-05-2021 11:33          31

Windows PowerShell
Type here to search
O Desktop 11:34 ENG 27-05-2021

```

viii. touch

touch — The touch command is used to create a file. It can be anything, from an empty txt file to an empty zip file. For example, “touch new.txt”.

Syntax: touch file_name

ix. man & --help man command in Linux is used to display the user manual of any command that we can run on the terminal. It provides a detailed view of the command which includes NAME, SYNOPSIS, DESCRIPTION, OPTIONS, EXIT STATUS, RETURN VALUES, ERRORS, FILES, VERSIONS, EXAMPLES, AUTHORS and SEE ALSO.

The screenshot shows the Visual Studio Code interface with the terminal tab active. The command 'man cd' is run, displaying detailed documentation for the Set-Location cmdlet. The output includes sections for NAME, SYNTAX, ALIASES, and REMARKS. The REMARKS section notes that Get-Help cannot find the Help files for this cmdlet on the computer and provides links for download and online viewing.

```

File Edit Selection View Go Run Terminal Help
python-internship.py - projects - Visual Studio Code
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
1: powershell
PS C:\Users\Raj\Desktop\projects> man cd
NAME
Set-Location

SYNTAX
Set-Location [[-Path] <string>] [-PassThru] [-UseTransaction] [<CommonParameters>]
Set-Location -LiteralPath <string> [-PassThru] [-UseTransaction] [<CommonParameters>]
Set-Location [-PassThru] [-StackName <string>] [-UseTransaction] [<CommonParameters>]

ALIASES
s1
cd
chdir

REMARKS
Get-Help cannot find the Help files for this cmdlet on this computer. It is displaying only partial help.
-- To download and install Help files for the module that includes this cmdlet, use Update-Help.
-- To view the Help topic for this cmdlet online, type: "Get-Help Set-Location -Online" or
go to https://go.microsoft.com/fwlink/?LinkID=113397.

PS C:\Users\Raj\Desktop\projects>

```

Python 3.8.5 64-bit ① 0 △ 0 Ln 17, Col 1 Spaces:4 UTF-8 CRLF Python ② Port : 5500 ③ Desktop 11:08 ENG 27-05-2021

x. cp

cp stands for copy. This command is used to copy files or group of files or directory. It creates an exact image of a file on a disk with different file name. **cp** command require at least two filenames in its arguments.

Syntax: \$ cp [OPTION] Source Destination

- xi.** **mv** **mv** stands for move. **mv** is used to move one or more files or directories from one place to another in a file system like UNIX.

Syntax: \$ mv [Option] source destination

- xii.** **locate** locate command in Linux is used to find the files by name.

Syntax: \$ locate [OPTION]... PATTERN...

xiii. ping

The Linux ping command is a simple utility used to check whether a network is available and if a host is reachable. With this command, you can test if a server is up and running. It also helps with troubleshooting various connectivity issues.

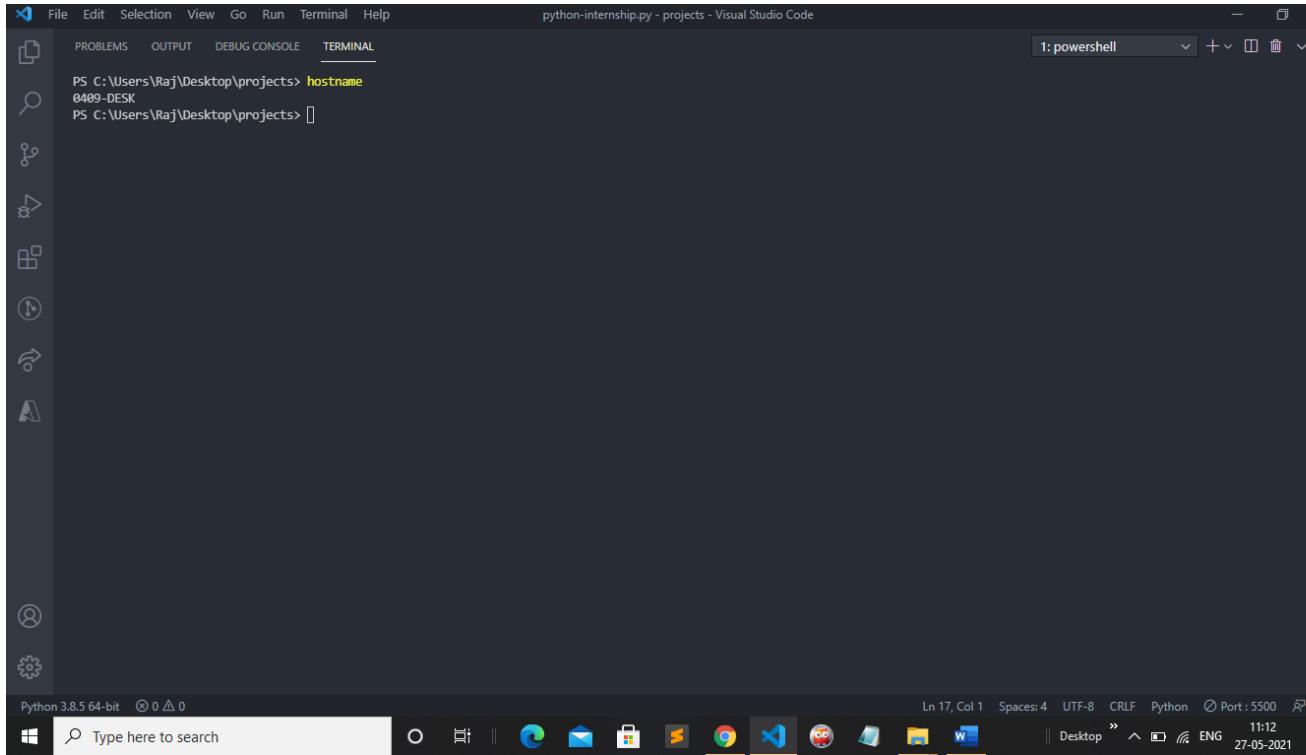
```
PS C:\Users\Raj\Desktop\projects> ping google.com

Pinging google.com [2404:6800:4009:81b::200e] with 32 bytes of data:
Reply from 2404:6800:4009:81b::200e: time=83ms
Reply from 2404:6800:4009:81b::200e: time=108ms
Reply from 2404:6800:4009:81b::200e: time=90ms
Reply from 2404:6800:4009:81b::200e: time=103ms

Ping statistics for 2404:6800:4009:81b::200e:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 83ms, Maximum = 108ms, Average = 96ms
PS C:\Users\Raj\Desktop\projects>
```

- xiv. **hostname** **hostname command in Linux is used to obtain the DNS (Domain Name System) name and set the system's hostname or NIS(Network Information System) domain name.** A hostname is a name which is given to a computer and it attached to the network. Its main purpose is to uniquely identify over a network.

Syntax: \$ hostname -[option] [file]



python-internship.py - projects - Visual Studio Code

File Edit Selection View Go Run Terminal Help

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

PS C:\Users\Raj\Desktop\projects> hostname
0409-DESK
PS C:\Users\Raj\Desktop\projects> []

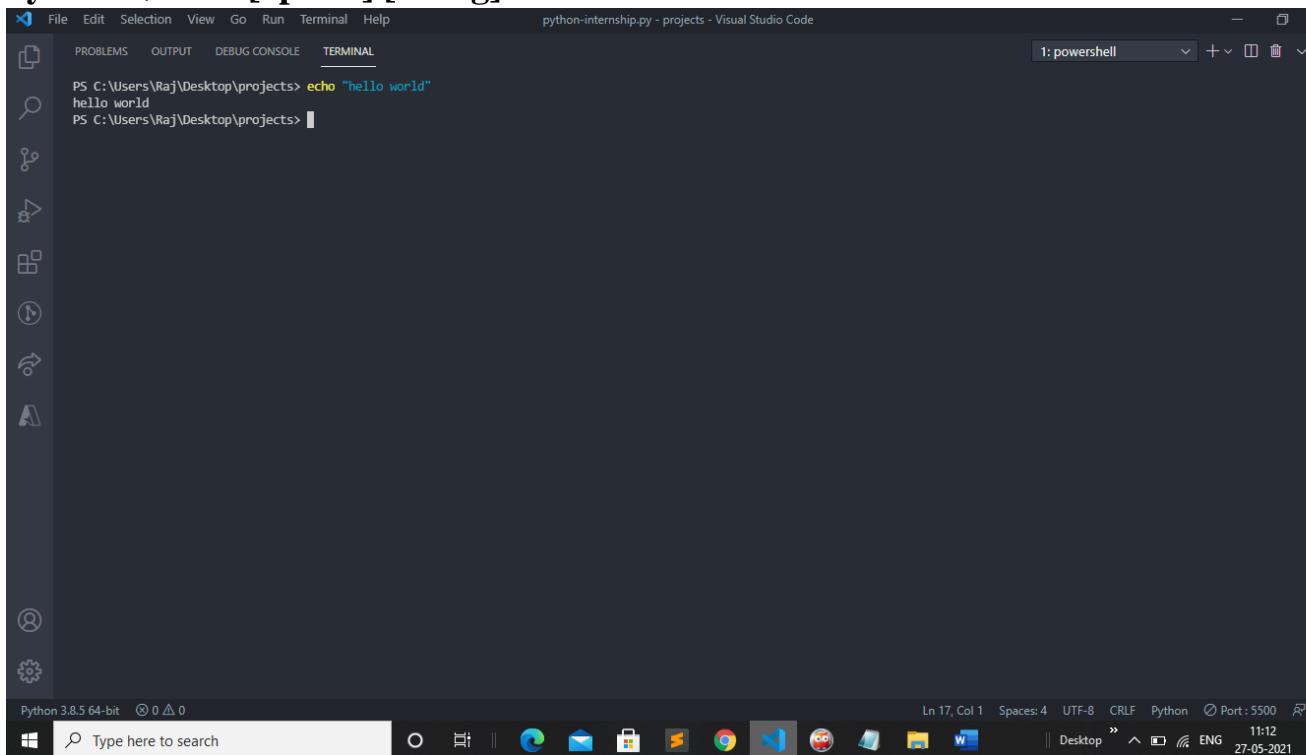
Python 3.8.5 64-bit Type here to search

Ln 17, Col 1 Spaces: 4 UTF-8 CRLF Python Port: 5500 11:12 || Desktop ENG 27-05-2021

xv. echo

echo command in Linux is used to display line of text/string that are passed as an argument. This is a built-in command that is mostly used in shell scripts and batch files to output status text to the screen or a file.

Syntax: \$ echo [option] [string]



python-internship.py - projects - Visual Studio Code

File Edit Selection View Go Run Terminal Help

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

PS C:\Users\Raj\Desktop\projects> echo "hello world"
hello world
PS C:\Users\Raj\Desktop\projects> []

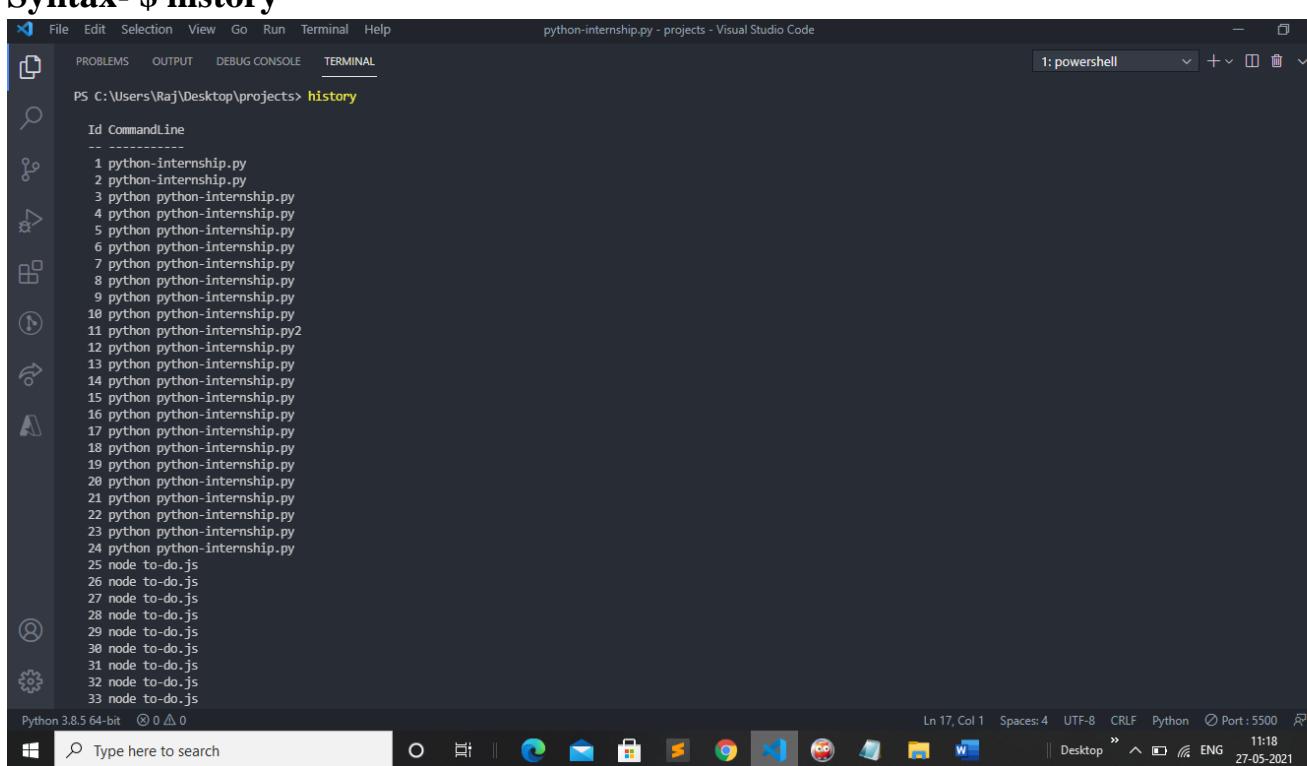
Python 3.8.5 64-bit Type here to search

Ln 17, Col 1 Spaces: 4 UTF-8 CRLF Python Port: 5500 11:12 || Desktop ENG 27-05-2021

xvi. cat

Cat(concatenate) command is very frequently used in Linux. It reads data from the file and gives their content as output. It helps us to create, view, concatenate files. So let us see some frequently used cat commands.

- xvii. sudo** sudo (Super User DO) command in Linux is generally used as a prefix of some command that only superuser are allowed to run. If you prefix “sudo” with any command, it will run that command with elevated privileges or in other words allow a user with proper permissions to execute a command as another user, such as the superuser.
- xviii. History history** command displays all previously used commands since the session was started.

Syntax- \$ history


The screenshot shows a Visual Studio Code interface with a terminal window open. The terminal tab is selected, and the status bar indicates it is a PowerShell session. The command `history` has been run, and the output shows a list of 33 previous commands. Most of the commands are variations of running Python scripts named `python-internship.py`, while others are node.js scripts like `node to-do.js`. The terminal also shows the Python version as `Python 3.8.5 64-bit`.

```
PS C:\Users\Raj\Desktop\projects> history
Id CommandLine
-----
1 python-internship.py
2 python-internship.py
3 python python-internship.py
4 python python-internship.py
5 python python-internship.py
6 python python-internship.py
7 python python-internship.py
8 python python-internship.py
9 python python-internship.py
10 python python-internship.py
11 python python-internship.py2
12 python python-internship.py
13 python python-internship.py
14 python python-internship.py
15 python python-internship.py
16 python python-internship.py
17 python python-internship.py
18 python python-internship.py
19 python python-internship.py
20 python python-internship.py
21 python python-internship.py
22 python python-internship.py
23 python python-internship.py
24 python python-internship.py
25 node to-do.js
26 node to-do.js
27 node to-do.js
28 node to-do.js
29 node to-do.js
30 node to-do.js
31 node to-do.js
32 node to-do.js
33 node to-do.js
```

- xix. cat command** cat (concatenate) command reads the data from the file and displays the content of the file as an output on the terminal.

Syntax: \$ cat [option] file_name

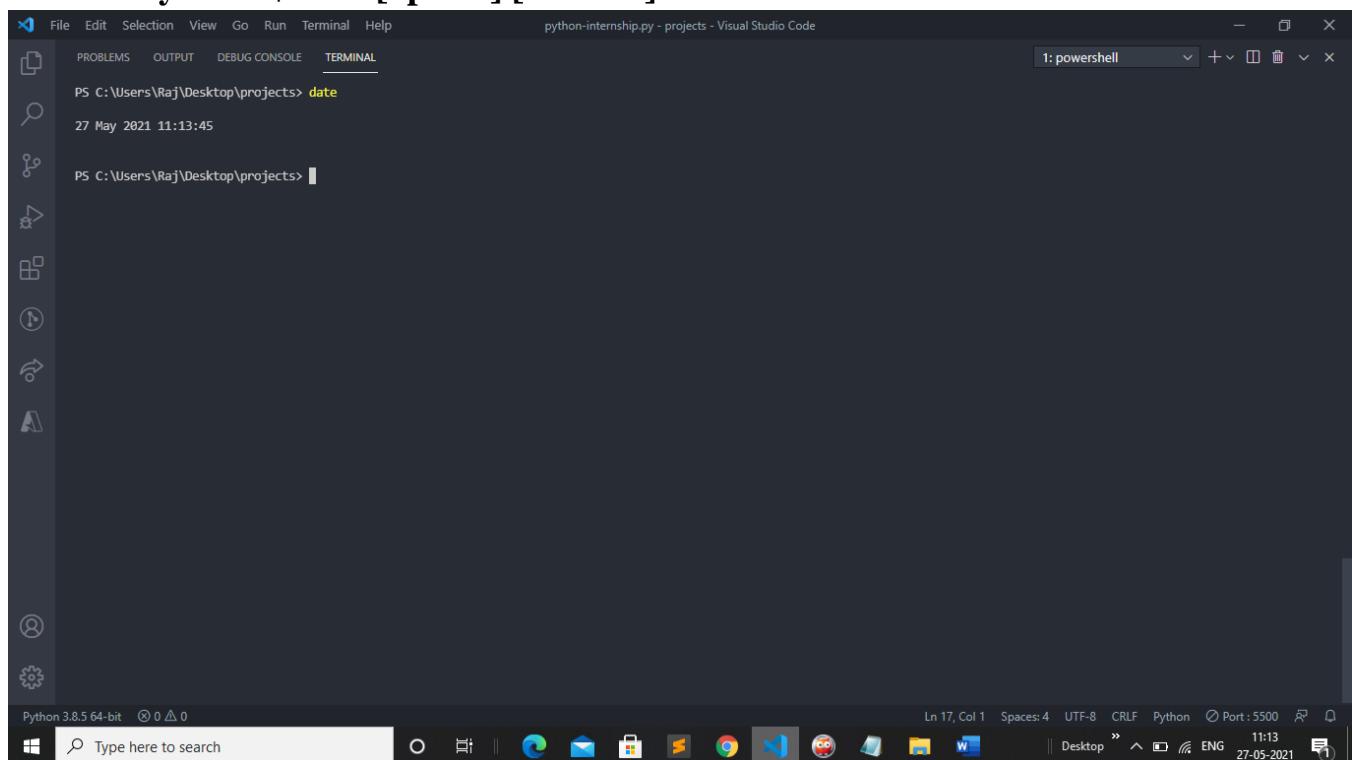


```
Windows PowerShell (x86)
PS C:\Users\Raj\Desktop\projects> cat abc.txt
hello world
PS C:\Users\Raj\Desktop\projects>
```

xx. date

The ‘date’ command is used to display the current date and time of the system.

Syntax: \$ date [option] [Format]



```
File Edit Selection View Go Run Terminal Help
python-internship.py - projects - Visual Studio Code
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
1: powershell
PS C:\Users\Raj\Desktop\projects> date
27 May 2021 11:13:45
PS C:\Users\Raj\Desktop\projects>
```

(2) Data structures of python with methods.

Data Structure- There are Four Types of Data Structure.

- 1. List**
- 2. Tuple**
- 3. Set**
- 4. Dictionary**

- Lists are used to store multiple items in a single variable.
- Lists are one of 4 built-in data types in Python used to store collections of data, the other 3 are Tuple, Set, and Dictionary, all with different qualities and usage.

- Lists are created using square brackets:

```
list = ["A", "B", "C"]
```

Syntax & Example

```
list = ["A", "B", "C"] print(list)
```

Output:-

File Edit Selection View Go Run Terminal Help python-internship.py - projects - Visual Studio Code

python-internship.py X

python-internship.py > ...

```
1  list = ['A', 'B', 'C']
2  print(list)
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL 1: powershell

```
PS C:\Users\Raj\Desktop\projects> python python-internship.py
['A', 'B', 'C']
PS C:\Users\Raj\Desktop\projects>
```

Python 3.8.5 64-bit 0 △ 0

Type here to search

List Item

- List items are ordered, changeable, and allow duplicate values.
 - List items are indexed, the first item has index [0], the second item has index [1] etc.

type()

- From Python's perspective, lists are defined as objects with the data type

'list':

Example

```
list = ["A", "B", "C"]  
print(type(mylist))
```

Set:-

- Sets are used to store multiple items in a single variable.
- Set is one of 4 built-in data types in Python used to store collections of data,
- the other 3 are List, Tuple, and Dictionary, all with different qualities and usage.
- A set is a collection which is both unordered and unindexed.

Sets are written with curly brackets.

```
set = {"A", "B", "C"}
```

Syntax & Example set =

```
{"A", "B", "C"}
```

```
print(set)
```

Output-

The screenshot shows a Visual Studio Code interface. On the left, there's a file tree with a file named 'python-internship.py'. The code in the editor is:

```
python-internship.py
python-internship.py > ...
1  # List  = ['A', 'B', 'C'];
2  # print(list)
3
4  set = {"A", "B", "C"}
5  print(set)
```

Below the editor, there are tabs for PROBLEMS, OUTPUT, DEBUG CONSOLE, and TERMINAL. The TERMINAL tab is selected, showing the command-line output:

```
PS C:\Users\Raj\Desktop\projects> python python-internship.py
{'C', 'B', 'A'}
PS C:\Users\Raj\Desktop\projects>
```

At the bottom, the taskbar shows the Python version (Python 3.8.5 64-bit) and system status (Windows 10, battery level, network, etc.).

Set Items

- Set items are unordered, unchangeable, and do not allow duplicate values.

`type()`

- From Python's perspective, sets are defined as objects with the data type

`'set':`

Tuple

- Tuples are used to store multiple items in a single variable.
- Tuple is one of 4 built-in data types in Python used to store collections of data, the other 3 are List, Set, and Dictionary, all with different qualities and usage.
 - A tuple is a collection which is ordered and unchangeable.
 - Tuples are written with round brackets.

`tuple = ("X", "y", "123")`

Example

```
tuple = ("X", "y", "123") print(tuple)
```

Output-

The screenshot shows a Visual Studio Code interface. In the top left, there are tabs for 'File', 'Edit', 'Selection', 'View', 'Go', 'Run', 'Terminal', and 'Help'. The main area displays a Python file named 'python-internship.py' with the following code:

```

1 # list = ['A', 'B', 'C'];
2 # print(list)
3
4 # set = {"A", "B", "C"}
5 # print(set)
6
7 tuple = ["2", 3, "add"]
8 print(tuple)

```

Below the code editor is a terminal window titled 'powershell' showing the output of running the script:

```

PS C:\Users\Raj\Desktop\projects> python python-internship.py
['C', 'B', 'A']
PS C:\Users\Raj\Desktop\projects> python python-internship.py
['2', 3, 'add']
PS C:\Users\Raj\Desktop\projects>

```

At the bottom of the screen is a taskbar with icons for various applications like File Explorer, Task View, Start, Taskbar settings, and a search bar. The system tray shows the date and time as 27-05-2021 10:57.

Tuple Items

- Tuple items are ordered, unchangeable, and allow duplicate values.
- Tuple items are indexed, the first item has index [0], the second item has index [1] etc.

`type()`

- From Python's perspective, tuples are defined as objects with the data type 'tuple':

Dictionary

- Dictionaries are used to store data values in key:value pairs.

- A dictionary is a collection which is ordered*, changeable and does not allow duplicates.
- Dictionaries are written with curly brackets, and have keys and values
- : Example

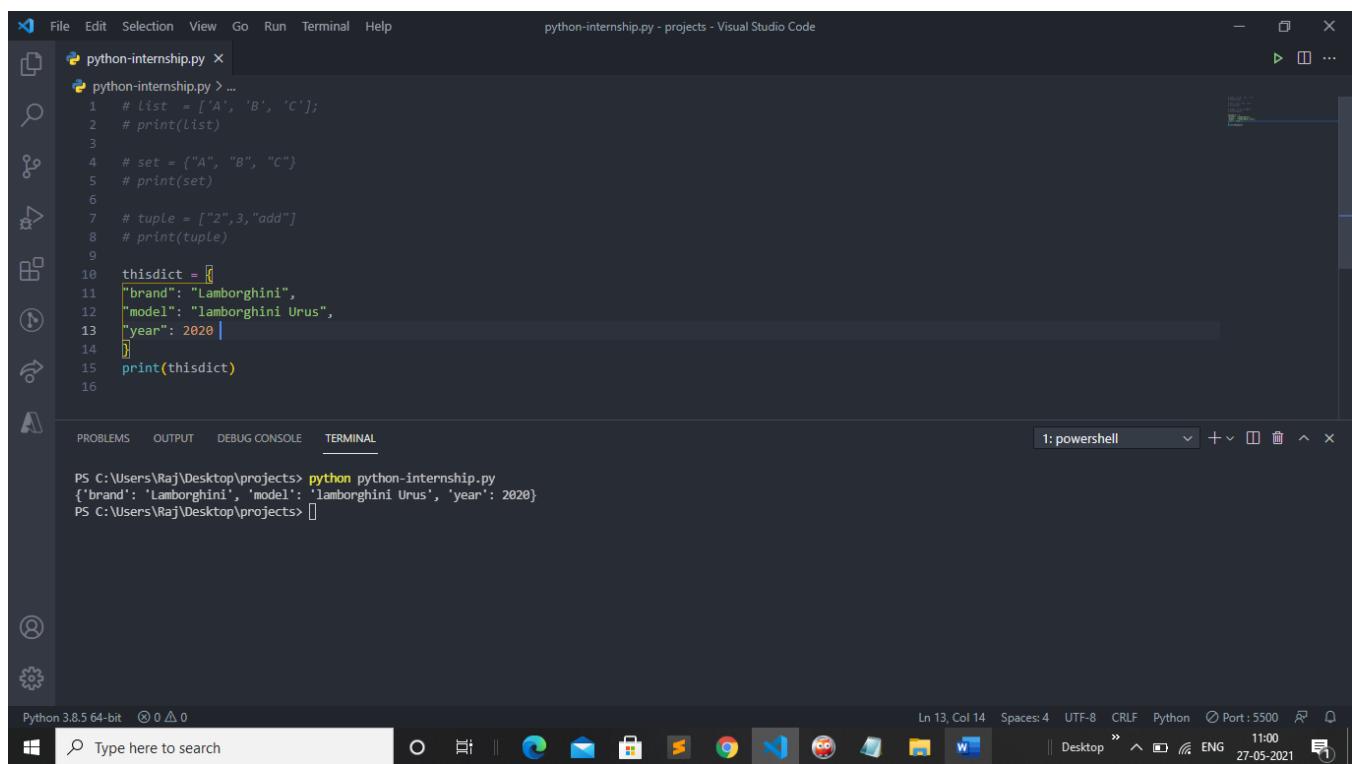
```
thisdict = {

    "brand": "Ford",
    "model": "Mustang",
    "year": 1964

}

print(thisdict)
```

Output-



The screenshot shows a Visual Studio Code interface. On the left is the code editor with a file named 'python-internship.py'. The code contains several commented-out sections (List, Set, Tuple) and a main dictionary definition:

```
python-internship.py
# List  = ['A', 'B', 'C'];
# print(list)
#
# set = {"A", "B", "C"}
# print(set)
#
# tuple = ("2",3,"add")
# print(tuple)
#
thisdict = {
    "brand": "Lamborghini",
    "model": "Lamborghini Urus",
    "year": 2020
}
print(thisdict)
```

Below the code editor is a terminal window titled 'powershell' showing the execution of the script:

```
PS C:\Users\Raj\Desktop\projects> python python-internship.py
{'brand': 'Lamborghini', 'model': 'Lamborghini Urus', 'year': 2020}
PS C:\Users\Raj\Desktop\projects>
```

The taskbar at the bottom of the screen also displays the Python 3.8.5 64-bit icon and other application icons.

- When we say that dictionaries are ordered, it means that the items have a defined order, and that order will not change.

- Unordered means that the items does not have a defined order, you cannot refer to an item by using an index.

`type()`

- From Python's perspective, dictionaries are defined as objects with the data type 'dict':
- We Can Find Length, Data Type & Not Allowed Duplicate Values in List, Set, Tuple & Dictionary.