

Q) list and explain any five string used in python

→ 1) `split()`:

Python string `split()` function is used to split a string into list of strings based on a delimiter. If the delimiter are considered, the delimiters.

2) `strip()`:

Python string `strip()` function is used to remove whitespaces from the string object. It returns a new string after removing any leading and trailing whitespaces including tabs (`\t`).

3) `upper()`:

We can convert a string to uppercase in python using `str.upper()` function. This function creates another string with uppercase characters and returns it.

4) `lower()`

We can convert a string to lowercase in python using `str.lower()` function. This function creates another string with lowercase characters and returns it.

3) replace():

Python string replace() function is used to create a new string by replacing some parts of another string.

2) Explain different types of errors:

→ 1) IndexError: - Index Error is thrown when trying to access an item at an invalid index.
→ 2) Module Not found Error: - It is thrown when module is not found.

3) Key Error: - It is thrown when key is not found.

4) Import Error: - It is thrown if specified function not found.

5) Type Error: - It is thrown when an operation or function is applied to an object or an inappropriate type.

6) Value Error: - It is thrown when function's argument is of an inappropriate type.

7) Name Error: - It is thrown when object not found.

8) Zero Division Error: - It is thrown when second operation in division is zero.

3) Mention five benefits of using python

1) Presence of third party modules: -

The Python package index (PyPI) contains numerous third party software modules that make Python capable of interacting with most of the other

languages and platforms.

2) Extensive support libraries: - Python provides a large standard library which

include areas like Internet protocol
String operators, web scraping tools and
operating system interfaces

3) Learning ease and supporting available. Python
offers excellent readability and uncluttered
syntax helps beginners to
utilize this programming language.

4) User friendly data structure.

Python has built-in list and dictionary
data structure which can be used to
construct fast runtime data structures.

5) Python has lean object oriented design
protocols, enhanced process control capability
etc which contribute to the increase in
speed and productivity.

W) Write a python program to reverse each word

in "Go Corona.txt", r)

line = []

for each in file:

line = each[::-1]

lines.append(line)

lines = lines[::-1]

os.unlink('Go-corona.txt')

with open("Go-corona.txt", "w") as out:

for i in lines:

out.write(i)

out.close()

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Output:

Before

to connect

Hello

your Id

After

down

on net

Q) Discuss the following methods associated with the file object : i) read()

ii) readlines()

iii) tell()

iv) readline()

v) seek()

i) read(): The read method returns the specified number of bytes from the file.

Q) Syntax - file.read()

ii) readline(): Returns one line from the file. You can also specify how many bytes from the line to return by using the size of parameter.

Q) Syntax - file.readline() or file.readline(size)

iii) readlines(): Returns a list of line from the file. Use the hint parameter to limit to the number of lines returned.

Syntax - file.readlines(hint)

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v) tell(): Returns the current file position of a file stream.

Syntax: file.tell()

v) seek(): Changes the file position. It also returns the new position of file.

Syntax: file.seek(offset)

Q) Write a python program to create a file with contents and print the contents of file. Get the filename and contents to write from the user.

→ a = input("Enter filename: ")

a = str(a) + ".txt"

with open('f' + a, 'w') as out:

out.write(input("write content: "))

out.close()

file = open(f"2031171")

print("Reading the content")

for each in file:

print(each.strip())

Output:-

Enter filename: myfile

Write content: Go Corona, Go Corona! Go Corona!

Reading the content.

Go Corona, Go Corona
Corona Go. Corona Go!!.

2) Explain directory methods in python

2.1) os.mkdir():

i) os.mkdir() method in python is used to create a directory named path with the specified numeric mode.

ii) This method raise FileNotFoundError if the directory to be created already exists.

Syntax - os.mkdir(path, mode)

2.2) os.rmdir():

i) os.rmdir method in python is used to remove or delete a empty directory.

ii) OsError will be raised if the specified path is not an empty directory.

Syntax - os.rmdir(path)

3) os.listdir():

i) os.listdir() method in python is used to get the list of all files and directories in the specified directory.

ii) If we dont specify any directory then list of file and directories in the current working directory will be given.

Syntax: os.listdir(path)

Q) os.path.exists()

- i) os.path.exists() method in python is used to check whether the specified path exists or not.
- ii) This method can be used to check whether the given path refers to an open file descriptor or not.

Syntax: os.path.exists(path)

Q) Explain how to create a directory, how to change a directory and how to remove directory in python.

→ A) Creating a datatype

1) mkdir() method is helpful to create directory

2) Before creating a directory check whether it already exists or not

3) If not then import the os module & specify your path in the os.mkdir()

import os

os.mkdir('C:/Npvw')

B) Change a directory -

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- 1) os.chdir() method is helpful to change a directory.
- 2) firstly import the os module then specify your directory path where you want to place the directory in os.chdir() method as follows:

import os

os.chdir("C:/NewFolder")

- 3) You can get the current directory location using the os.getcwd() method.

- 4) Removing a directory:

- 1) To remove a directory os.rmdir() method is useful.

- 2) Make sure that the directory you want to remove exists.

- 3) it means atleast 1 or more language characters can be allowed.

- 4) What is regular expression? State and explain regular expression patterns.

- 1) A regular expression, regor or regex is a sequence of characters that define a search pattern.

- 2) It is a technique developed in theoretical computer science and formal language theory.

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A) "d{0-9}{10}":

- i) It is a pattern used to check 10 digit contact numbers used in string.
- ii) d means that the following string contains only digits.
- iii) {0-9} is a set which defines range of numbers from 0-9.
- iv) {10} means the string should contain exact 10 digits.

B) "w{A-Z}{0-2}":

- i) It is a pattern used to check names in a string.

ii) w suggests that the string contains only words.

- iii) {A-Z} is a set which defines all characters in uppercase (in appearance).

iv) {0-2} means the character should be lower case.

C) "d{4-5}{0-9}{S}":

- i) It is used to check postal codes in a string.

ii) d refers only digits.

iii) {4-5} refers only 4 or 5 digits.

iv) {0-9} is a set of 0 to 9 digits/numbers.

v) {S} specifies the number of digits should be counted i.e 5.

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ANSWER

- i) Discuss the following methods supported by compiled regular expression object,
- ii) Search ()

→ i) Search () :

- i) The search() function searches the string for a match and returns a match object if there is a match.
- ii) If there is more than one match, only the first occurrence of match will be returned.
- iii) If no matches are found, the value null is returned.

2) findall() method :

- i) The findall() function returns a list containing matches.
- ii) The list contains the matches in the order they are formed.
- iii) If no matches are found an empty list is returned.

Ques 1

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- (1) What are different types of message boxes?
Ans - The `showinfo()` is used to show the information to the user.
- (2) `showwarning()` Is used to display the warning message.
`showerror()`. This is used to display the error message.
- (3) `askquestion()` This is used to ask some question to the user.
- (4) `askokcancel()`. This is used to confirm the user action regarding application.
- (5) `askyesno()`. This type is used to ask the user about some action to which user answers yes or no.

Q2 Explain GUI in python and state its advantages and disadvantages

- Python offers multiple options for developing GUI but of all the GUI methods, Tkinter is the most commonly used method.
- 2) Tkinter is a standard python interface to the GUI toolkit shipped with python.
- 3) Python with Tkinter is often used and easiest way to create GUI applications.

Advantages

- (1) Open source approach to python GUI development.
- (2) Advantages of Tk library.
- (3) Accessibility of Python GUI is high.

- 3) Python scripts that can use Tkinter do not
reject the application
- 4) Tkinter is now available to any Python developer

Disadvantages

- 1) The multi-layered approach taken in discussing the GUI have disadvantages for the execution
- 2) this could cause confusion in problem with different machines mouse compatibility
- 3) Write a short note on Layout Manager
- 4) The layout managers enable us to control the way in which visual components are arranged in the GUI forms by determining the static position of components used in static
- 5) these are software components used to build toolkit which have the ability to layout group have control elements by fixing relative position
- 6) There are 6 types
 - a) flow layout
 - b) border layout
 - c) card layout
 - d) grid layout
 - e) grid bag layout
 - f) layout manager

- 7) Write a python program to create a login form display message for successful or unsuccessful
- 8) from Tkinter import *
- from tkinter import messagebox

```
win = Tk()
```

```
win.geometry("500x500")
```

```
win.title("Login Form")
```

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win["bg"] = def

username = Label(win, text="Username", bg="#FFF", font="helvetica 20",
fg="#000")

username.place(x=80, y=80)

password = Label(win, text="Password", bg="#FFF", font="helvetica 20",
fg="#000")

password.place(x=80, y=150)

Ent = Entry(win, bg="#FFF", font="helvetica 20")

Ent.place(x=80, y=130)

Ent2 = Entry(win, bg="#FFF", font="helvetica 20")

Ent2.place(x=80, y=250)

def k():

a = ent.get()

b = ent2.get()

if len(a) == 8 and len(b) == 8:

messagebox.showinfo(" ", "Login Successful")

else:

messagebox.showwarning(" ", "Login Unsuccessful")

btn = Button(win, command=k, text="Login", bg="#FFF",
font="helvetica 20")

btn.place(x=200, y=300)

win.mainloop()

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- Q) Write the syntax, use and example of lambda
- Syntax → Lambda arguments: expression

Uses:

1) Lambda functions are used when you need a function for a short period of time.

2) This is commonly used when you want to pass a function as an argument to higher order functions that is, a function takes each other function as the argument.

Example:

`k = lambda (num1, num2): print(num1 + num2)`
`print(k(5, 7))`

Output:

12

- 6) Make a program to enter two numbers by widgets and display its addition on a label

- How Tkinter imports the window from Tkinter import * message

from Tk

from gravity ("500x500")

from 0.74 ("Ardhi")

from "bg": INH

refers to Apr 12

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b. baby (con. cont. " behtha 20")
in part (x: 20 days - 10)

c. baby (con. cont. " behtha 20")
ent part (x: 20 days - 16)

det & 3 (cont.)

a. ent get()

b. ent get()

i) a. Det(1b): true and b is det(1) : be
sem. Det(2. int(1b))
\blinking (true. {Error})

else:

message showing ("around spot")

d. Butta (con. "x: "Add", bg "black", bg "white")
w/o matching()

e. with the help of proper example make why
to chose

f. baby (behtha 10)

gather ("local star")

gather ("list")

gather ("list")

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```
l1 = listBox( width, bg="white", fg="black"),  
l1.place(x=500, y=100)
```

```
like = ['python', 'css', 'html', 'Java', 'Ruby', 'PHP', 'JavaScript']
```

```
for i in like:  
    l1.insert(0, i)  
l1.insert(0, "css")  
win.mainloop()
```

Output:

listbox	-	Entry
(css,		
python		
html		
Java		
Ruby		
PHP		

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- 8) Write a python GUI program to create a window
display to view the windows using them. code
from Tkinter import *
from Tkinter import messagebox

winter = Tk()

winter.geometry("500x500")

winter.title("Windows")

winter["bg"] = "white"

winter.resizable(0, 0)

winter.mainloop()

- 9) With the help of pages after Scrolling up
in this:

• winter = Tk()

winter.geometry("500x500")

winter.title("Windows")

winter["bg"] = "white"

• .scrollbar (width= 140, orient = HORIZONTAL)

• .Scrollbar (width= 140, orient = VERTICAL)

• .Text (winter, width= 20, height= 5, font="helvetica
bg: "white")

• .Text (x = 200, y = 150)

• .Scrollbar (width= 140, command= .text.y.set)

Meeting Agenda

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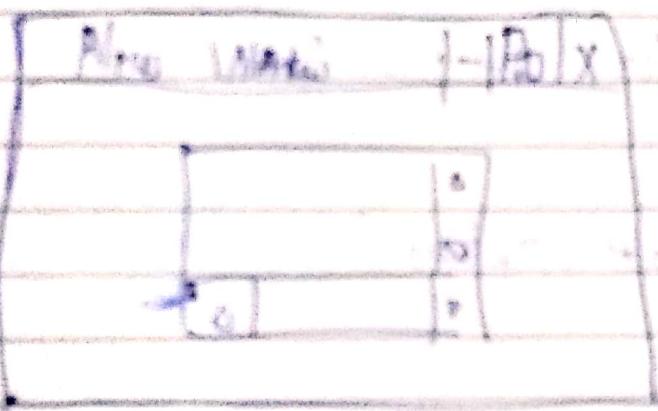
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1. Configuration - (1 - 4 hrs)

2. Working (Normal - test - review)

3. Walks - review (1)

4. Output -



Q10) What is Tkinter? Explain any 4 widgets of Tkinter.

- 1) Tkinter is the standard GUI library for python.
- 2) Python code written with Tkinter provides a fast and easy way to create GUI applications.
- 3) Tkinter provides a powerful object-oriented interface to the Tk GUI toolkit.

Tkinter widgets

1) This widget implements a display for where you can place text or images. It is also possible to use this widget for file input and output.

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Syntax:

wt. lobj (master options)

2) frame

- i) It is a long widget & used to group text strings both & var.
- ii) It is the first widget.

Syntax:

wt. lobj (master options)

3) form

The form widget is used as a container to organize other widgets.

Syntax:

wt. form (master options)

- 1) What is cursor? Explain it with example
- 2) The cursor of SQL connector Python is used to execute statement to communicate with SQL database.
- 3) Using the methods of it you can execute SQL statements. fetch operation from the result sets an procedure.
- 4) You can create cursor object using the cursor() method of the connection object/ class.

For example

```
conn = sqlite3.connect('new.db')
cur = conn.cursor()
# executing query
cur.execute('create table num (age int)')
# committing query
conn.commit()
```

- 2) Explain URL with example
- 3) URL is the abbreviation of uniform resource locator and is defined as the global address of documents and other resources on the world wide web.
 - 1) It is an address that sends users to a specific resource on line such as a webpage video or other document or resource.
 - 2) For example the URLs before point is different files at the domain (subsites)
 - https://

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3) What is exception upon any true database?

- If an exception is an event which classifies the programs execution of program that disrupts the normal flow of the program instruction.
- In general when a python script encounters a situation that it cannot cope with, it raises an exception.
- 3) An exception is a python object that represents an error.

Following are some database exceptions:

① Integrity Error:

Subjects of Database Error that refers to the instant to the database module goes such as case no longer being active.

② NotSupportedError:

Subjects of Database Error that refers to trying to use unsupported functionality.

③ OperationError:

Subjects of Database Error that refers to errors such as the loss of connection to the database. These errors are generally outside of the control of the python script.

④ DatabaseError:

Subject for errors in the database. Most subjects

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Ques Write a python program to send mails

Ans code

```
import smtplib
```

```
s = smtplib.SMTP('smtp.gmail.com', 587)
```

```
s.starttls()
```

```
a = input("Enter Email address: ")
```

```
b = input("Enter Password: ")
```

```
s.login(a, b)
```

```
c = input("Write Message: ")
```

```
d = input("Enter receiver email: ")
```

```
s.sendmail(a, d, c)
```

```
s.quit()
```

```
print("Mail Sent!")
```

Output

```
Enter Email address: appanineeraj@gmail.com
```

```
Enter Password: 12345678
```

```
Write Message: Linux
```

```
Enter Receiver email: yashgupta@gmail.com
```

```
Mail Sent
```

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Q) Write a python program to receive email using
pop3 protocol

→ import poplib

```
box = poplib.POP3_SSL('pop.gmail.com', 1995)
a = input('Enter your mail: ')
b = input('Enter Password: ')
box = user(a)
box = pass(b)
N = len(box.list())
for i in range(N):
    for msg in box.retr(i)[1]:
        print(msg)
        break
    break
```

Output:

Enter your email: appani@njit.edu@gmail.com

Enter password: 123456789

Delivered-to: appani@gmail.com → HAIP

Q) How to execute different types of SQL statement
Explain with an example
→ Code / Example

import sqlite3

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```
conn = sqlite3.connect('ne.db')
cur = conn.cursor()
# creating a table
cur.execute("create table num ('val' int);")
# inserting data into table
for i in range(1,6):
    cur.execute("insert into num values (%d)" % i)
# uploading value
cur.execute("update num set 'val'=6 where 'val=5'")
# selecting value from table
sel = cur.execute("select * from num")
for i in sel:
    print(i[0])
# dropping table
cur.execute("drop table num;")
# committing statements
conn.commit()
```

Output:
1
2
3
4
5

- Q) Write a python program that creates a new database and execute the following SQL statements
- 1. Create table number (val INTEGER)
 - 2. Insert into number) value(1)
 - 3. Select * from number; value 1/0
 - 4. Select * from number; value 1/0

-> Contd.

```
import sqlite3 as sq
con = sq.connect('new.db')
cur = con.cursor()
```

```
cur.execute("Create table numbers ('id' int);")
cur.execute("Insert into numbers values (1);")
cur.execute("Select * from numbers where id = 100 and
            id > 200")
cur.execute("Select * from numbers where id = 100 and
            id < 200")
con.commit()
```

Q) Give one line description of the following SQLite data type
i) NULL ii) INTEGER iii) REAL iv) TEXT
v) BLOB

i) NULL - It is a datatype used to represent a missing value

ii) INTEGER - It is a datatype used to hold positive and negative integer values

iii) REAL - It is a datatype used to store real numbers (with decimal values) that is represented by floats

iv) TEXT - It is a datatype used to store binary data

v) BLOB - It is a datatype used to store binary data as value

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- Q) Write a python program to create a table "student" with records and insert records in that table first. Select all rows from the table and display that record.
- Ans) Code

```
import sqlite3 as sq
```

```
(1) - sq.connect('nrao.db')
```

```
(2) - cur = cursor()
```

```
(3) - cur.execute('create table student record (name char,'  
'Age' int, 'roll' int, marks int);')
```

```
names = ['Ajay', 'Om', 'Yash', 'Neeraj', 'Sachin']
```

```
ages = [20, 18, 17, 19, 16]
```

```
marks = [80, 73, 81, 76, 89]
```

```
for i in range(0, 5):
```

```
(4) - cur.execute('insert into Student record values  
(? , ? , ? , ?)', [names[i], ages[i], roll[i],  
marks[i]])
```

```
(5) - cur.execute('select * from student record;')
```

```
for i in cur:
```

```
print(i)
```

Output :-

(1) (Ajay, 20, 1, 80)

(2) (Om, 18, 2, 73)

(3) (Yash, 17, 3, 81)

(4) (Neeraj, 19, 4, 76)

(5) (Sachin, 16, 5, 89)

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10) Write a Python program to input a list and perform selection sort on the list

→ def select(n):

l = len(n)

for i in range(l-1):

n[i] = n[i]

for i in range(l-1):

if n[min-1] < n[n[j]]:

n[min-1], n[j] = n[j], n[min]

print(n)

select([(1, 14), 24, 70, 46, 18, 3, 10, 10, 29, 47])

Output

(1, 3, 4, 7, 8, 10, 14, 19, 24, 29, 46, 48)