		Classmate Date
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1	Q+1112Z	Assignment No. 2
K		
	10	Define class, object and attributes, Demonstrate the
P		concept of functions and modifiers with con
1	Ans	class - A user- defined prototype for an object the
1		defines a set of attributes that characterize any
		object of the class.
		Object - A unique instance of a data structure that
		defined by its class. An object comprises both datomen
1		and methods
		Attributes - Assigning Values to named elements of on
1		object. These elements are called attributes
		example: >>> blank.x=3.0
-7-		>>> blank, y=4.0
-		Junctions and modifiers
T		class Time:
		time = Time() time, how=11
		time, minute = 59
		time, seconds=30
~		timel = Time()
		timel, hour = 2
		timel, minutes = 30
-		timel, seconds = 40
-		done = add_time(time, time1)
		print-time(done)
1		deg add-time (t1, t2):
1		sum: Time()
17		sum. how = t'. how + t2. how
1		sum, minute: t!, minute + t2, minute
		sum. seconds = +1, seconds + +2, seconds
W.		retwin sum

output:

13:89:70

using modifiers the function can written in such a way that proper time or valid time is displayed, def add\_time (+1, +2):

sum = Time ()

sum, how: ti, hour + t2, hour sum, minute: +1. minute + +2, minute sum. seconds = tl. seconds + t2, seconds

if sum. seconds > = 60; sum, seconds -= 60 sum, minute +=1

if sum, minute>= 60; sum, minute -= 60 sum. how += 1

return sum aggasses

done : add\_time (time, time) print-time (done)

output:

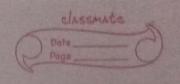
14:30:10

Explain -- init -- and -- str -- methods with an example? -- init -- method The init method is a special method that gets invoked when an object is instantiated. deg class Time: Ex: def \_-init -- (self, hour = 0, minute = 0, second = 0); self. how = how

segiminute : minute self . second = second

time = Time() time . print-time () output: 00:00:00 The --str -- method: This method returns a string representation of an object, when we print an object python invokes the Str method. class Time: Ex; def--str-- (self): return '1.2d; 1.2d; 1.2d' 1. (self. how, self. minute, self. second) time = Time (9,54) print(time) output: 09:54:00 3. Explain operator overloading and polymorphism with examples Ans operator overloading: Python allows programmers to redefine the meaning of operators when they operate on class objects this genture is called operator overloading. -add--sub\_ -mul-- truediv --pow\_ 0/0 -mod-- rshift --and-

Scanned with CamScanner



Example:

class Time;

deg time\_to\_int (time);

minutes = time . how \*60 + time . minute

seconds = minutes \* 60 + time, seconds

return seconds

def int to time (seconds);

time = Time()

minutes, time second = divmod (seconds, 60)

time, how, time, minute: divmod (minute,

return time

def add-time (t1, t2);

seconds = time\_to\_int(4) + time\_to\_int(t2)

return int-to time (seconds)

t1= Time (9, 45)

t2: Time (1,35)

print (t1+t2)

output pount

11:20:00

polymorphism:

polymorphism refers to having several different

forms. It enables the programmers to assign a

different meaning or usage to a variable, function

or an object in different contexts

when polymorphism is applied to a function or

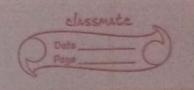
method depending on the given parameters, a particular

form of the function can be selected for execution.

method overriding in one way of implementing

polymorphism

Example: class India(): des capital (sels): print ("New Delhi") def language (self): print(" Hindi and English") class usaco: deg capital (selg): print (" washing ton, D.C") def language (seig): print ("English") obj-ind = Indial) objusa = USAC) for country in lobjind, objusa): (ountry, capital() country, longuage () output; New Delhi Hindi and English Washington, D.C English 4. Illustrate the concept of inheritance with exem code Ans Inheritance The process of creating the new class by extending



existing class is called inheritance or the process of inheriting the geatures of base case is called as inheritance Example:

class Person (object):

deg -- init -- (seig, name); selfiname = name

des getName (seig): return selfiname

deg is Employee (selg): return False

class Employee (person):

def is Employee (self): return True

emp = Person ( "Anu") print (emp. getNamel), emp. is Employee ())

emp = Employee ("Abi") print (emp. getNAMe), emp. is Employed))

output:

Anu False Abi True

5. Explain the process of downloading files from the web with request module and also saving downloade -d files to handdrive with example?



And sownloading a web page with the requests mon . The requests module lets you easily download files from the web without having to worry ob complicated issues such as network errors, connec problems, and data compression.

. The requests, get () function takes a string of a un to download, By calling type() one requests, getti's return value, you can see that it returns a Response object which contains the response that web server gave for your request Example:

>>> import requests

>>> res = requests, get ('http://www.gutenberg.org/och epub/1112/pg1112, txt')

>>> type(res)

< class ' requests, models, Response's

>>> res. status\_code == requests\_codes. ox

>>> lencres, text) 178981

>>> print (res, text[ :250])

The project Gutenberg Ebook of Romeo and Julies by william shakespare

. The URL goes to a text webpage for the entire play of Romeo and Juliet, provided by project Gutenbergu. You can less that the request for this web page succeeded by thecking status code attribute of the Response object . If it is equal to value of request codes ok, the request is succeeded, the downloaded web page is stored as a string in the Response object's text vourable, and we can display how a many characters we want by

specifying index

saving dowloaded files to the hourd drive we can save the web pages to a file on your hard drive with the standard open of function and writer) method. we should open the file in write binary mode. Example: >>> import requests

cachelpubl 1112 (pg1112, txt)

>>> res. raise\_ for\_status()

>>> playFile = open ('Romeo And Julie L. txt', 'wb')

>>> for chunk in res. iter\_content (100000); playFile. write (chunk)

100000

>>> play File. close()

The iter content() method returns chunks of the content on each iteration through the loop. Each chunk is of the bytes data type, and you get to specify how many bytes each chunk will contain. The write() method returns the number of bytes written to the file.

process for downloading & saving.

- 1. (all requests, get () to download the gib
- 2. (all open() with who to create a new gite in write binary
- 3. Loop over the Response objects iter-content of method
- 4. (all write() on each iteration to write the content to the
- 5. (all closers to close the gile



6. Describe the get Text() function used for getting full text from a docx file with example code Ans If we want only the text, not the Styling in journal in the word document, you can use getText() function the word of ilename of a docx file and returns a string value of its text.

Example:

#!python 3
import docx

def getText(filename):

doc = docx. document (filename)

full Text = []

for para in doc. paragraphs;
fullText.append (para. text)
retur'in'. join(fullText)

sove this file as read Dorx, py

The get Text() function opens the word document, loop over all the paragraph objects in the paragraphs let, and then appends their text to the list is sull Text. After the loop, the String in full Text are joined together with newline character.

ony othe module.

>>> import read Docx

>>> print(readDocx. getText('demo.docx'))
Document Title

A plain paragoaph with some bold and some italic Heading, level 1 some guote

girst item in unordered

You can also adjust getText() to modify the string before

returning it

Example:

Jo indent each paragraph,

gullText.append(' '+ para.text)

Jo add a double space in between paragraphs
return'InIn', join (full-Text)

with sample code?

Ans Json

Javascript object Notation is a popular way to format data as a single human-readable string. Isolv is the native way that Java Script programs write their data structure and usually resembles with python's pprint() function would produce.

The joon module

Python's json module handles all the details of translating between a string with Json data and python values for the json loads() and json dumps() function Json can't store every kind of python value, at can contain values of on the following datatypes; Strings, integers, floats, Booleans, lists, dictionaries, and None Type.

Reading Json with the loads() function (load string)

Jo translate a string containing Json data into a python value, pass it to the json loads() function

Example:

>>> string of Json Data = ' & "name": "Zophie", "is lat":
true, "mice laught": 0, "feline 10": mull 3'

>>> import json

>>> js on Data As Python Value:

json, loads (string of Json Data)

>>> j'son Data As Python Value

& 'iscat': True, 'mice (aught': 0, 'nome': 'Zophie', 'gelinelo': writing Json with the dumps () function (dump string Jhe json.dumps () function will branslate a pythen value into a string of Json-formatted data Example:

>>> pythonvalue = & 'iscat'; True, 'mice (aught': 0, 'name, 'Zophie', 'gelinela'; None}

>>> import json

>>> String of jsondata = json: dumps (python Value)

>)) string of ison data

' & "iscat": true, "felinela": null, "mice Caught":0, "nome";

"zophie";

8. Discuss the creation, encryption and decryptions a pdg?

Ans Creating PDF's

PyPDF2's counterpart to Paggile Reader objects is Paggile writer objects, which can create new PDF files But PyPDF2 cannot write orbitrary text to a PDF like pythol can do with plaintext files. Instead, PyPDF2's PDF writing capabilities are limited to copying pages from other PDF's, rotating pages, overlaying pages on encrypting files.

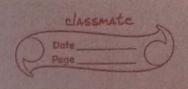
Instead you have to create a new por and then copy content over from an existing document.

The general apprach

objects one or more existing pors into paggile Reader

2. create a new Possilewriter object

3. Copy pages from the paggile Reader objects into the paggile writer object



. Finally, use the possilewriter object to write the output PDF

Encrypting PDFs

A paggilewriter object can also add encryption to a por document.

## Example:

- >>> import PyPDF2
- >>> paggile = open(' meetingminutes.pag', rb')
- >>> pdg Readen = PyPDF2. PdgFileReader (pdgFile)
- >>> pdg Writer = Py PDF2, Pdg File Writer()
- >>> for pageNum in range (PdgReadur. numPages): possuriter, add Page (pols Readu, get Page (Bge Num))
- >>> pagwriter. encrypt ('sword gish')
- >>> resultPdg = open ('encryptedminutes. pdg', 'wb')
- >>> pogwriter, write (result Pog)
- >>) result Pdg, close()

Decrypting PDFs

Some PDF documents have an encryption geature that will keep them from being read until whoever is opening the document provides a passoword

## Example:

- >>> import PYPDF 2
- >>> pdgReader = PyPDF. PdgFile Reader (open l'encrypted. pdg';
- >>> pdg Reader, is Encrypted

True

- >>> pogReader. decrypt ('sword fish')
- >>> pageobj = pdg Reader. get Page(0)