HomeWork _Holiday_Christmas_NewYear

QUESTIONS

Question1. Write a function which will take a string and return a length of it without using the inbuilt function len().

Question2. Write a function which will be able to print index of all primitive elements which you will pass.

Question3. Write a function which will take input as a dictionary and give output as a list of all the values. (NOTE: The function should work even in the case of a level 2 nesting.)

Question4. Write a function which will take another function as input and return an output.

Question5. Write a function which will take multiple list as an input and give concatenation of all the elements as an output.

Question6. Write a function which will be able to take a list as an input and return index of each element as an output, like an inbuilt index function, but even if the list has repetitive elements, the created function should their index too.

Question7. Write a function which would return list of all the file names from a directory

Question8. Write a function which will be able to show your system configuration.

Question9. Write a function which will be able to show date and time.

Question10. Write a function which will be able to read an image file and show it to you.

Question11. Write a function which will be able to read a video file and play it for you.

Question12. Write a function which can move a file from one directory to another directory.

Question13. Write a function which will be able to shut down your system.

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Question15. Write a function by which i can send a mail to anyone.

Question16. Write a function to read a complete pdf file.

Question17. Write a function to read a word file.

Question18. Write a function which can help you to filter only word file from a directory.

Question19. Write a function by which can print the IP address of your system.

Question20. Write a function which you will be able to append two pdf files.

Question1. Write a function which will take a string and return a length of it without using the inbuilt function len().

Answer:

In [ ]:

```
def LEN(s):
```

```
def LEN(s):

    """
    It is a function to give the length of a string.
    Any input from your side would be considered as a string only.
    You would be able to get the output as an integer representing the length of the stri
ng.
    """

    a=0
    for i in s:
        a=a+1
    return a

s=input("Enter any string as input:- ")
print("Length of the string input by you is", LEN(s))
```

Question2. Write a function which will be able to print index of all primitive elements which you will pass.

Answer:

In [ ]:

```
def INDEX(*args):

    """
    It is a function to give the index of each primitive elements.
    You can give multiple number of inputs.
    You would be able to get output as an integer representing the index for each of the
input you have made.
    """

    List = []
    a=0
    for i in args:
        if type(i) not in List:
            List.append(type(i))
        else:
            pass
        print(a, "is the index of ", i)
        a=a+1
```

In [ ]:

```
INDEX(["dfdssd", 34567, 5678.56789, 456+5678j, [1,2,3,4,5]], 12,13,14, True)
```

Question3. Write a function which will take input as a dictionary and give output as a list of all the values.

(NOTE: The function should work even in the case of a level 2 nesting.)

Answer:

In [ ]:

```
def VALUES(d):

    """
    It is a function to give the list of all the values you give as input.
    You can give input as a dictionary only to get desired output.
```

```
    You would be able to get output as a list of the values of the dictionary.
    NOTE: The function can work only upto level 2 nesting.
    """

    l=[]
    if type(d)==dict:
        for i in d.values():
            if type(i)!=dict:
                l.append(i)
            elif type(i)==dict:
                for j in i.values():
                    l.append(j)
        return l
    else:
        print("WARNING: Please! input as a dictionary")
```

In [ ]:

```
VALUES({"a":213, "b": "fvadsf", "c":{1,2,3,4}, "d":{"aa":1234, "bb":"sdfgh", "cc":[6,7,8
,9]}})
```

Question4. Write a function which will take another function as input and return an output.

Answer:

In [ ]:

```
def FUNCTION1(s):

    """
    It is a function to convert lowercase characters of a string into uppercase.
    It takes any string as an input.
    It gives output as a string in uppercase.
    """

    return s.upper()



def FUNCTION2(argument):

    """
    This  function takes another function, caleed as FUNCTION1  as an input.
    It is a function to print whatever is returned by the FUNCTION1.
    """

    v = argument(input())
    print(v)


FUNCTION2(FUNCTION1)
```

Question5. Write a function which will take multiple list as an input and give concatenation of all the elements as an output.

Answer:

In [ ]:

```
def LIST_CONCATENATOR(INPUT):
```

```
    """
    It is a function designed for the purpose of concatenation.
    It can take multiple lists as an input.
    It gives concatenation of all the elements of the lists as an output in the form of a
string.
    """

    s=""
    for i in INPUT:
          if type(i)==list:
                for j in i:
                    s=s+str(j)
    return s
```

In [ ]:

```
LIST_CONCATENATOR(([213,1234,123], {1,2,3,4}, ["sd",213,123.23]))
```

Question6. Write a function which will be able to take a list as an input and return index of each element as an output, like an inbuilt index function, but even if the list has repetitive elements, the created function should their index too.

Answer:

In [ ]:

```
def LIST_ALL_INDEX(List):

    """
    It is a function to give index of element present in a given list.
    It takes a single list as an input.
    It would return index as an integer for each and every element present in the list, e
ven if the elements are repetitive.
    """

    if type(List)==list:
        a=0
        for i in List:
            print(a, " is the index of ", i )
            a=a+1
    else:
        print("WARNING!!!  :  Please give input as a list ")
```

In [ ]:

```
LIST_ALL_INDEX([213,21345,"sdfg",213.1234,234+123j,True,True, 213])
```

Question7. Write a function which would return list of all the file names from a directory.

Answer:

In [ ]:

```
import os

def LIST_OF_ALL_FILES_IN_A_DIRECTORY(dir):

    """
    It is a function which would return list of all the file names from a directory.
```

```
    It takes the path name of the directory as an input.
    """

    Filenames=os.listdir(dir)
    return Filenames
dir = (input("Enter the path of the directory: "))
print(LIST_OF_ALL_FILES_IN_A_DIRECTORY(dir))
```

Question 8. Write a function which will be able to show your system configuration.

Answer:

In [ ]:

```
!pip install lib-platform
```

In [ ]:

```
def sys_config():

    import platform
    import psutil

    sys_info = platform.uname()

    print('Operating System: ', sys_info.system)
    print('Node: ', sys_info.node)
    print('Release: ', sys_info.release)
    print('Version: ', sys_info.version)
    print('GPU: ', sys_info.machine)
    print('Processor: ', sys_info.processor)
    print('CPU Count: ', psutil.cpu_count())
    print('Virtual Memory: ', psutil.virtual_memory())

sys_config()
```

Question 9. Write a function which will be able to show date and time.

Answer:

In [ ]:

```
def date_time():

    import datetime

    store_room = str(datetime.datetime.now())
    new_store_room = store_room.split(" ")

    print("Today's date is: ", new_store_room[0])
    print("Current time is: ", new_store_room[1])

date_time()
```

Question 10. Write a function which will be able to read an image file and show it to you.

Answer:

In [ ]:

```
!pip install opencv-python
```

In [ ]:

```
def image1():

    import cv2

    image_name = input("Enter the image name along with its extension:  ")
    store_room = cv2.imread(image_name)
    cv2.imshow("Image :", store_room)
    cv2.waitKey(0) # waits until a key is pressed
    cv2.destroyAllWindows()

image1()
```

In [ ]:

```
def image2():

    from PIL import Image

    image_name = input("Enter the image name along with its extension:  ")
    store_room = Image.open(image_name, "r")
    return display(store_room)

image2()
```

In [ ]:

```
def image3():

    from PIL import Image

    image_name = input("Enter the image name along with its extension:  ")
    store_room = Image.open(image_name, "r")
    return store_room.show()

image2()
```

In [ ]:

```
def image4():

    from PIL import Image

    image_path = input("Enter the image path along with its extension:  ")
    store_room = Image.open(image_path, "r")
    return store_room.show()

image2()
```

Question 11. Write a function which will be able to read a video file and play it for you.

Answer:

In [ ]:

```
import cv2
```

```
def video_player1():
    video_path = input("Enter the video path along with its extension:  ")
    store_room = cv2.VideoCapture(video_path)

    while(store_room.isOpened()):
      # Capturing the video frame-by-frame
        ret, frame = store_room.read() # ret is something like if next frame is available
or not
        if ret == True:
            cv2.imshow('Frame',frame) #Showing the display of current frame
            if cv2.waitKey(25) & 0xFF == ord('x'):  ## Press x to exit from the video fr
ame
                break
        else:
            break

    store_room.release()
    cv2.destroyAllWindows()

video_player1()
```

In [ ]:

```
def video_player2():

    from os import startfile
    video_path = input("Enter the video path along with its extension:  ")
    startfile(video_path) #default player of the windows system is chosen automatically

video_player2()
```

Question 12. Write a function which can move a file from one directory to another directory.

Answer:

In [ ]:

```
def file_mover():

    import shutil

    source = input("Enter the file path from where it is to be moved:  \n")
    destination = input("Enter the file path to where it is to be moved:  \n")

    shutil.move(source, destination)
    print("File has been moved \nFrom {} to {}".format(source, destination))

file_mover()
```

Question 13. Write a function which will be able to shut down your system.

Answer:

In [ ]:

```
#def shutdown():

    import os

    os.system("shutdown /s /t 2") #s-current system, t-delay time before shutdown, 2-dela
```

```
y time = 2sec

#shutdown()

#it will work when jupyter notebook is opened as administrator
```

Question 14. Write a function which will be able to access your mail.

Answer:

In [ ]:

```
!pip install easyimap
```

In [ ]:

```
def emailAccess(user, passwd, mailNo = 0):

    '''
    mailNo[optional argument]: AIt can be 0 for latest, 1 for second latest and so on. By
default, its value is 0.

    '''

    import easyimap as e
    server = e.connect('imap.gmail.com', user, passwd)  ## Establish the connection betw
een gmail and python
    email = server.mail(server.listids()[mailNo])  ## Fetching the id of latest mail

    print('Sender:\n', email.from_addr)
    print('\nTitle:\n', email.title)
    print('\nBody:\n', email.body)
    print('\nAttachments:\n', email.attachments)


user = 'utkarshchoubey5@gmail.com'
passwd = 'removed due to security reasons'
mailNo = 5

emailAccess(user, passwd, mailNo)

# iwas getting some authentication error.
#Some apps and devices use less secure sign-in technology.
#So we need to enable Less secure app access option from gmail account.

#Steps:

#Login into Gmail
#Go to Google Account
#Navigate to Security section
#Turn on access for Less secure app access
#By following above steps, issue will be resolved

# OR

#In order to establish the connection, we need to allow the less secure access:
#https://myaccount.google.com/lesssecureapps?pli=1&rapt=AEjHL4MxmEFG95x8NccLO3ixua11TmiXt
Zy-CofzTsE0BqPrLaBPgZYilKEmH_daV8K1JuA9_E8AapH2pFU56PLMyTZkoMOa7w
```

Question 15. Write a function by which i can send a mail to anyone.

Answer:

Answer:

In [ ]:

```
def Send_Mail(user, passwd):

    import smtplib

    server = smtplib.SMTP('smtp.gmail.com', 587)
    server.starttls()  ## creating a connection between gmail and python using tls(trans
port layer security)
    server.login(user,passwd)  ## Login into the gmail account
    receivers_mail_id = input("Enter receiver mail id: ")
    message = input('Enter the mail(body): ')
    server.sendmail(user, receivers_mail_id, message)
    server.close()
    print('Email Sent Successfully!')

user = "utkarshchoubey5@gmail.com"
passwd = "removed due to security reasons"
Send_Mail(user, passwd)
```

Question 16. Write a function to read a complete pdf file.

Answer:

In [ ]:

```
def pdf_reader():

    import PyPDF4 #it reads only text

    pdf_path = input("Enter the path of the PDF file along without the extension:   ")
    final_pdf_path = pdf_path + ".pdf"
    pdf_store_room = open(final_pdf_path, 'rb')
    pdf_reader = PyPDF4.PdfFileReader(pdf_store_room)
    print("Number of pages: ", pdf_reader.numPages)

    for i in range(0,pdf_reader.numPages):
        print("\nPageNo. ", i)
        page_store_room = pdf_reader.getPage(i)
        print(page_store_room.extractText())

    pdf_store_room.close()

pdf_reader()
```

Question 17. Write a function to read a word file.

Answer:

In [ ]:

```
!pip install python-docx
```

In [ ]:

```
def word_file_reader1():

    import docx
```

```
    filepath = input("Enter the file path along with the extension:  ")
    print()
    document = docx.Document(filepath)

    word_text = []

    for para in document.paragraphs:
        word_text.append(para.text)

    output = "\n".join(word_text)
    return output


print(word_file_reader1())

#this program is not working if the file is not in the cwd
```

In [ ]:

```
def word_file_reader2():

    file_path = input("Enter the file path without its extension:  ") + ".docx"

    with open(file_path, "r",encoding='utf8', errors='ignore') as f:
        return f.read()

print(word_file_reader2())

#in this way, i am getting encoding issues
```

In [ ]:

```
def word_file_reader2():

    file_path = input("Enter the file path without its extension:  ") + ".docx"

    with open(file_path, "rb") as f:
        return f.read()

print(word_file_reader2())

#in this way, i am getting encoding issues
```

Question 18. Write a function which can help you to filter only word file from a directory.

Answer:

In [ ]:

```
def word_file_filter():

    import os

    store_room = []
    directory = input("Enter the directory:   ")


    for root, subdirectories, files in os.walk(directory):
        for file in files:
            if file.endswith(".docx") or file.endswith(".doc"):
                store_room.append(file)

    return store_room

word_file_filter()
```

Question 19. Write a function by which can print the IP address of your system.

Answer:

In [ ]:

```
def IP_address_viewer():

    import socket

    host_name = socket.gethostname()
    IP_address = socket.gethostbyname(host_name)

    return "Host-Name: {} | IP-Address: {}".format(host_name, IP_address)

IP_address_viewer()
```

In [ ]:

```
from socket import *
def IP_address_viewer():

    host_name = gethostname()
    IP_address = gethostbyname(host_name)

    return "The name of the system is: {}, and the IP address is: {}".format(host_name, I
P_address)

IP_address_viewer()
```

Question 20. Write a function which you will be able to append two pdf files.

Answer:

In [ ]:

```
def pdf_merger():

    from PyPDF4 import PdfFileMerger

    merger = PdfFileMerger()
    File1_path = input("Enter the path of the first file without its extension:  ") + ".p
df"
    File2_path = input("Enter the path of the second file without its extension:  ") + "
.pdf"
    Files_list = [File1_path, File2_path]

    for file in Files_list:
        merger.append(open(file, "rb"))

    Output_File_Path = input("Enter the path of the output folder without its extension:
") + "\Output_File" + ".pdf"
    with open(Output_File_Path, "wb") as Output_File:
        merger.write(Output_File)

pdf_merger()
```