Navrachana University
School of Engineering and Technology

BCA

Course: CMP404 Introduction to Data Science Programming

Assignment-3

Date : 30th Jan, 2024

1. Write a python program to access following data structure
   data=[(12345,"Diksha ","Diksha r@nuv.ac.in"),(45667,"Jiva","Jiva@nuv.ac.in"),
   (16789,"Ronit","Ronitd@nuv.ac.in"),(69433,"Heena","Heena@nuv.ac.in")]

2. Write a python program to access following dictionary
   Mydict =
   {"Enrollment Id" : [12345,45667,16789,69433],
   "Student Name : ["Diksha ","Jiva","Ronit","Heena"],
   "Email Id ": ["Diksha r@nuv.ac.in","Jiva@nuv.ac.in","Ronitd@nuv.ac.in",
   "Heena@nuv.ac.in"] }
   print(f"{enrolid:<7}{sname:12}{emailid:25}")

3. Write a python program to convert data in nested list structure to dictionary.

   eg. data=[(12345,"Diksha ","Diksha r@nuv.ac.in"),(45667,"Jiva","Jiva@nuv.ac.in"),
   (16789,"Ronit","Ronit@nuv.ac.in"),(69433,"Heena","Heena@nuv.ac.in")]

   Provide key such as Enrollment Id, Student Name, and Email id.
   Resultant Data

   mydict={"Enrollment Id" : [12345,45667,16789,69433],
   "Student Name : ["Diksha ","Jiva","Ronit","Heena"], "Email Id "
   :["Diksha@nuv.ac.in","Jiva@nuv.ac.in","Ronitd@nuv.ac.in","Heena@nuv.ac.in"]
   }

Display data in a tabular format.

4. Write a menu driven Object Oriented program to store Students details like Enrollment No, Student Name and Contact Number permanently using dictionary data structure.

Add functions to add, update, delete and display data. Save data permanently in a JSON file.
HINT:
To import json library

import json
To write any object to python
fw=open("students.json","w")
jsndata = json.dumps(dictionary of students details)#dumps converts dictionary to json
fw.write(jsndata)
To read any json object from file
fr=open("students.json","r")
allStudents=json.load(fr) #reads whole file and returns the data.

5. A data.csv file has following data(stateid, name, population in crores, No. of Universities)

data.csv

12001,Gujarat,10,29,12002,Maharashtra,19,36,12003,Rajasthan,13,31,12004,Madhya Pradesh,14,21,12005,Punjab,12,13,12006,Karnataka,23,31,12007,Tamilnadu,25,29,1208,Kerala,21,15

Read data.csv file. Transfer data to data structure like following

States={

12001: {"name":"Gujarat","population":10,"no_of_uni":20},

12002: {"name":"Maharashtra","population":19,"no_of_uni":36}

}

Using this data, construct dictionary in following manner.

import json
To write any object to python fw=open("students.json","w")
jsndata = json.dumps(dictionary of students details)#dumps converts dictionary to json
fw.write(jsndata)
To read any json object from file fr=open("students.json","r")
allStudents=json.load(fr) #reads whole file and returns the data.

6. A data.csv file has following data(stateid, name, population in crores, No. of Universities)

data.csv

12001,Gujarat,10,29,12002,Maharashtra,19,36,12003,Rajasthan,13,31,12004,Madhya Pradesh,14,21,12005,Punjab,12,13,12006,Karnataka,23,31,12007,Tamilnadu,25,29,1208, Keral a,21,15

Read data.csv file. Transfer data to data structure like following States={
12001: {"name":"Gujarat","population":10,"no_of_uni":20},
12002: {"name":"Maharashtra","population":19,"no_of_uni":36}
}
Using this data, construct dictionary in following manner.