**IT 340 Assignment 1 (50 points)**

**The North Carolina Scholar System**

In this assignment, you will build up a scholar look-up system for the state of North Carolina. The data of the scholars is included in two text files, “Experts.txt” and “Profiles.txt”, which have *tab-separated values*. We are only interested in the scholars in computer science.

You may use dictionaries and lists in this assignment. One possible way to do this is to form a nested dictionary of lists, for example: {“DUKE”:{“Alice”:[areas studied by Alice], “Bob”:[…],…}, “NCATSU”:{…},…}

**Hints:**

1. Open both files and scan through the data first (Use Notepad++)
2. Information about the areas studied by a scholar is in “Profiles.txt”
3. Use ExpertId to link information between the two files.
4. For partial matches, split the input string into words and return the scholars (together with their area) that have the greatest number of words as substrings. E.x.: if the input string is “machine learning” and Alice studies two areas: “machine learning systems” and “learning strategies”, your program should return: Alice (machine learning systems)

**Requirements:**

1. This is an individual assignment.
2. You must use Python for the assignment.
3. You cannot use any imported modules.
4. The assignment is due September 5, 2024 at 11:59 PM.
5. Submit your Python source code file on Canvas.

The expected outcome of sample runs is given below. Information in red can be hard-coded, information in green is user input, information in **black** must be retrieved from the dictionary:

Welcome to the NC Scholar System

We currently include scholars from the following institutes:

UNCCH,ECU,DUKE,WCU,UNCC,NCATSU,NCSU,FSU,UNCW,ECSU,WSSU,ASU,UNCP,UNCG,UNCA,NCCU

Select an institute: DUKE

DUKE has the following scholars in computer science:

Pankaj K. Agarwal

Owen L. Astrachan

Shivnath Babu

Robert Calderbank

Jeffrey S. Chase

Vincent Conitzer

Landon P. Cox

Bruce Randall Donald

Robert C. Duvall

Jeffrey R.N. Forbes

Alexander J. Hartemink

Alvin R. Lebeck

Richard A. Lucic

Bruce Maggs

Kamesh Munagala

Ronald Parr

John H. Reif

Susan H. Rodger

Donald Rose

Xiaobai Sun

Carlo Tomasi

Jun Yang

Xiaowei Yang

Andrew Douglas Hilton

Ashwinkumar Venkatanaga Machanavajjhala

Theophilus Adetokunbo Benson

Debmalya Panigrahi

Input an area of study: multi-agent systems

multi-agent systems has the following scholars:

Vincent Conitzer

Press c to continue or press anything else to quit: c

We currently include scholars from the following institutes:

UNCCH,ECU,DUKE,WCU,UNCC,NCATSU,NCSU,FSU,UNCW,ECSU,WSSU,ASU,UNCP,UNCG,UNCA,NCCU

Select an institute: DUKE

DUKE has the following scholars in computer science:

Pankaj K. Agarwal

Owen L. Astrachan

Shivnath Babu

Robert Calderbank

Jeffrey S. Chase

Vincent Conitzer

Landon P. Cox

Bruce Randall Donald

Robert C. Duvall

Jeffrey R.N. Forbes

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Xiaobai Sun

Carlo Tomasi

Jun Yang

Xiaowei Yang

Andrew Douglas Hilton

Ashwinkumar Venkatanaga Machanavajjhala

Theophilus Adetokunbo Benson

Debmalya Panigrahi

Input an area of study: algorithm

There is no exact match, but we found some scholars that study similar areas:

Pankaj K. Agarwal (approximation algorithms); Shivnath Babu (heuristic algorithms); Robert Calderbank (parallel algorithms); Vincent Conitzer (learning algorithms); Bruce Randall Donald (approximation algorithms); Jeffrey R.N. Forbes (learning algorithms); Alexander J. Hartemink (learning algorithms); Bruce Maggs (parallel algorithms); Kamesh Munagala (approximation algorithms); Ronald Parr (learning algorithms); John H. Reif (parallel algorithms); Xiaobai Sun (parallel algorithms); Debmalya Panigrahi (approximation algorithms);

Press c to continue or press anything else to quit: c

We currently include scholars from the following institutes:

UNCCH,ECU,DUKE,WCU,UNCC,NCATSU,NCSU,FSU,UNCW,ECSU,WSSU,ASU,UNCP,UNCG,UNCA,NCCU

Select an institute: UNCG

UNCG has the following scholars in computer science:

Francine Blanchet-Sadri

Jing Deng

Lixin Fu

Nancy L Green

Fereidoon Sadri

Shanmugatha Suthaharan

Stephen R Tate

Input an area of study: bioinformatics

There is no one that studies bioinformatics.

Press c to continue or press anything else to quit: c

We currently include scholars from the following institutes:

UNCCH,ECU,DUKE,WCU,UNCC,NCATSU,NCSU,FSU,UNCW,ECSU,WSSU,ASU,UNCP,UNCG,UNCA,NCCU

Select an institute: UNCC

UNCC has the following scholars in computer science:

Wlodek W Zadrozny

Srinivas Akella

Keh-hsun Chen

Jianping Fan

Anthony Fodor

James M Frazier

Cynthia J Gibas

Richard Ilson

Lorrie J Lehmann

Aidong Lu

M.Taghi Mostafavi

Zbigniew W Ras

Martin W Ribarsky

Min C Shin

Jamie J Souvenir

Richard M Souvenir

Kalpathi R Subramanian

Xiaoyu Wang

Yu Wang

Zachary J Wartell

Jennifer W Weller

Anthony B Wilkinson

Dale-Marie C Wilson

Wensheng Wu

Jing Yang

G Michael Youngblood

Input an area of study: data mining and machine learning

There is no exact match, but we found some scholars that study similar areas:

Wlodek W Zadrozny (data mining); Keh-hsun Chen (learning algorithms); Jianping Fan (machine learning); Anthony Fodor (databases, genetic); Cynthia J Gibas (data analysis); Lorrie J Lehmann (machine learning); Aidong Lu (data handling); M.Taghi Mostafavi (bandwidth); Zbigniew W Ras (data mining); Martin W Ribarsky (data mining); Min C Shin (learning systems); Jamie J Souvenir (data structures); Richard M Souvenir (learning systems); Kalpathi R Subramanian (data mining); Xiaoyu Wang (data mining); Yu Wang (data acquisition); Zachary J Wartell (data mining); Jennifer W Weller (databases, genetic); Anthony B Wilkinson (learning systems); Dale-Marie C Wilson (learning systems); Wensheng Wu (learning systems); Jing Yang (data mining); G Michael Youngblood (data mining);

Press c to continue or press anything else to quit: q

Thanks for using the system!