2017 Fall: COMP-SCI 5590/490 - Special Topics

Python Programming

Lab Assignment 2

Assignment Overview

The following assignment focus on to make one familiar with python programming.

One should be able to use sets and dictionaries in any environment.

One should be able to use classes to build any of the management system. This can be used as back end for any web application created in Python. Also we will learn about numpy package and will see how this can be implemented.

Lab Assignment

1. Write a program that accepts a sentence as input and remove duplicate words .
   Sort them alphanumerically and print it.

   Sample Input:
   hello world and practice makes perfect and hello world again

   Sample Output:
   again and hello makes perfect practice world

2. With any given number n,
   Write a program to generate a dictionary that contains (k, k*k) .Print the dictionary generated and the series should include both 1 and k.
   Sample input:
   8
   Sample output:
   {1: 1, 2: 4, 3: 9, 4: 16, 5: 25, 6: 36, 7: 49, 8: 64}

3. Write a python program to create any one of the following management systems. You can also pick one of your own.
   a. Library Management System (should have classes for Person, Student, Librarian, Book etc.)
   b. Airline Booking Reservation System (classes for Flight,Person,Employee,Passenger etc.)
   c. Hotel Reservation System (classes for Room,Occupants,Employee etc.)
   d. Student Enrollment System (classes for Student,System,Grades etc.)
   e. Expense Tracker System (classes for Expense, Transaction Category etc.)

   Prerequisites:

   Your code should have atleast five classes.
   Your code should have _init_ constructor in all the classes
   Your code should show inheritance atleast once

Your code should have one super call
Use of self is required
Use at least one private data member in your code.
Use multiple Inheritance atleast once
Create instances of all classes and show the relationship between them.
Your submission code should point out where all these things are present.

4. Using Numpy create random vector of size 15 and replace the maximum value by 100.

Submission Guidelines:

- Submit your code at Github and properly document it. Submit your screenshots as well.
- Properly document your code
- Submit only the code portion in text file to UMKC blackboard assignment.
- Remember code similarity to be less than 45%
- Use following link to submit your assignment:

https://goo.gl/forms/cxvY8Kg1pvNNzrpw1