ECE 5650: Project 1

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**Introduction**

Project 1 was to create a customer data base server using Python 2.7 socket programming based on skeleton code of a class for a database.

**Source Code**

Refer to .py attachment or code below.

import socket

import sys

class Node: # Customer Record Class

def \_\_init\_\_(self,customerID, customerFirstName, customerLastName, customerPhone):

self.id = customerID

self.first = customerFirstName

self.last = customerLastName

self.phone = customerPhone

def display(self):

# display record

return 'Customer record: ' + str(self.id) + ' ; ' + self.first + ' ; ' + self.last + ' ; ' + self.phone

class customerDB: # Customer Database Class

def \_\_init\_\_(self):

self.db = []

def display(self): # display all records

allRecords = ''

for record in self.db:

allRecords = allRecords + record.display() + '\n'

if (allRecords == ''):

return 'Database is empty!'

else:

return allRecords

def insert(self, record): # insert a record

self.db.append(record)

return 'Operation was completed successfully.'

def remove (self, customerID): # remove a record

found = False

for record in self.db:

if (record.id == customerID):

self.db.remove(record)

found = True

break

if (found):

return 'Operation was completed successfully.'

else:

return 'ERROR: No match was found!'

def search(self, last): # search for all records with the specifiedlast name

found = False

matchingRecords = ''

for record in self.db:

if (record.last == last):

matchingRecords = matchingRecords + record.display()

if (matchingRecords == ''):

return 'ERROR: No match was found!'

else:

return matchingRecords

def show (self, customerID): # show record with specified ID

found = False

for record in self.db:

if (record.id == customerID):

return record.display()

found = True

break

if (not found):

return 'ERROR: No match was found!'

nextCustomerID = 0

cDB = customerDB()

# create customer database

HOST = "10.0.0.5"

PORT = 8889

servSocket = socket.socket(socket.AF\_INET, socket.SOCK\_STREAM)

servSocket.bind((HOST, PORT))

servSocket.listen(5) #2.7 doesnt assign on no parameter given

serverRunning = True

while serverRunning:

connection, address = servSocket.accept() #blocks here til connection is made

clientActive = True #inner loop exit condition

while clientActive:

mOutSucc = "Operation was completed successfully."

mOutErr = "ERROR: The operation is not supported!"

message = connection.recv(1024)

command = message.split()

if (command[0] == "display"):

mOut = customerDB.display(cDB)

connection.send(mOut)

elif (command[0] == "show"):

mOut = customerDB.show(cDB,command[1])

connection.send(mOut)

elif (command[0] == "insert"):

nextCustomerID = nextCustomerID +1

record = Node(nextCustomerID,command[1],command[2],command[3])

mOut = customerDB.insert(cDB,record)

connection.send(mOut)

elif (command[0] == "remove"):

mOut = customerDB.remove(cDB, command[1])

connection.send(mOut)

elif (command[0] == "search"):

mOut = customerDB.search(cDB, command[1])

connection.send(mOut)

elif (command[0] == "exit"):

mOut = "Connection Closed"

connection.send(mOut)

clientActive = False

serverRunning = False

else:

connection.send(mOutErr)

servSocket.close() #end of program

**Testing Procedure**

To test the programs were run in two separate command windows. One was the server program and other was the client program. You can see in screenshots below how this was done.

**Conclusion**