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#Team 04 UNP Network Monitor (python)
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#Packet sniffer client used to monitor network traffic
#For Linux (tested in Ubuntu)- Client for packet sniffer
#!/usr/bin/python

import socket, sys                # Import socket module
import MySQLdb
from csv import Sniffer

s = socket.socket()          # Create a socket object
host = '192.168.56.102'      # Get local machine name
port = 12345                 # Reserve a port for your service.

while True:
    print("""
    Please choice your option:
        1. Begin Sniffer
        2. Show historic data
        3. Exit Sniffer
        """)

    ans=raw_input("Enter your option: ")
    if not ans:
            continue
    if ans == "1":
        try:
            s.connect((host, port))
            print ("\n---------------------------------------------------------------------"
                   "\n**                                                                 **"
                   "\n**                Welcome to the network monitoring                **"
                   "\n** This network monitoring will monitor the following packets:    **"
                   "\n**                   the  ETHERNET packets                         **"
                   "\n**                      the  IP packets                            **"
                   "\n**                      the TCP packets                            **"
                   "\n**                      the UDP packets                            **"
                   "\n**                      the ICMP packets                           **"
                   "\n---------------------------------------------------------------------")

            print ("\n                          "+(s.recv(1024))+"                          \n")
        except:
            continue
    elif ans == "2":
        while True:
            print ("""
            Historic data
                1. Ethernet packets
                2. Ip packets
                3. TCP packets
                4. UDP packets
                5. ICMP packets
            """)

            dtb = raw_input("Enter your option: ")
            if not dtb:
                break
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        #---------------------ETH-------------------------------
        if dtb == "1":
            try:
            # Open database connection
                con = MySQLdb.connect("localhost","root","Welkom01","UNP" )

            # prepare a cursor object using cursor() method. We use Cursor to fetch the
            data
                sql = con.cursor()
            # Prepare SQL query to INSERT a record into the database.
                sql.execute("SELECT Datetime,Dest_mac,Source_mac,Protocol FROM ETH")
                con.commit()

                data = sql.fetchall()

                for (Datetime,Dest_mac,Source_mac,Protocol) in data:
                    print(Datetime,"Dest_mac:",Dest_mac,"Source_mac:",Source_mac,
                    "Protocol:",Protocol)

            except MySQLdb.Error, e:
                print "Error %d: %s" % (e.args[0],e.args[1])
                sys.exit(1)
            finally:
                if con:
                    con.close()
            break

        #---------------------IP-------------------------------
        elif dtb == "2":
            try:
            # Open database connection
                con = MySQLdb.connect("192.168.56.102","salar","Welkom01","UNP" )

            # prepare a cursor object using cursor() method
                sql = con.cursor()
            # Prepare SQL query to INSERT a record into the database.
                sql.execute("SELECT
                Datetime,Version,IHL,TTL,Protocol,Source_addr,Dest_addr FROM IP")
                con.commit()

                data = sql.fetchall()

                for (Datetime,Version,IHL,TTL,Protocol,Source_addr,Dest_addr) in data:
                    print("Date:",Datetime,"Version:",Version,"IHL:",IHL,"TTL:",TTL,
                    "Protocol:",Protocol,"Source_addr:",Source_addr,"Dest_addr:",
                    Dest_addr)

            except MySQLdb.Error, e:
                print "Error %d: %s" % (e.args[0],e.args[1])
                sys.exit(1)
            finally:
                if con:
                    con.close()
            break

        #---------------------TCP-------------------------------
        elif dtb == "3":
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        try:
        # Open database connection
            con = MySQLdb.connect("192.168.56.102","root","Welkom01","UNP" )

        # prepare a cursor object using cursor() method
            sql = con.cursor()
        # Prepare SQL query to INSERT a record into the database.
            sql.execute("SELECT
            Datetime,Source_port,Desc_port,Sequence,Acknowledge,Length FROM TCP")
            con.commit()

            data = sql.fetchall()

            for (Datetime,Source_port,Desc_port,Sequence,Acknowledge,Length) in data:
                print(Datetime,"Source_port:",Source_port,"Dest_port:",Desc_port,
                "Sequence:",Sequence,"Acknowledge:",Acknowledge,"Length:",Length)

        except MySQLdb.Error, e:
            print "Error %d: %s" % (e.args[0],e.args[1])
            sys.exit(1)
        finally:
            if con:
                con.close()
        break

    #--------------------UDP-------------------------------
    elif dtb == "4":

        try:
        # Open database connection
            con = MySQLdb.connect("192.168.56.102","root","Welkom01","UNP" )

        # prepare a cursor object using cursor() method
            sql = con.cursor()
        # Prepare SQL query to INSERT a record into the database.
            sql.execute("""SELECT Datetime,Source_port,Dest_port,Length,Checksum
            FROM UDP""")
            con.commit()

            data = sql.fetchall()

            for (Datetime,Source_port,Dest_port,Length,Checksum) in data:
                print(Datetime,"Source_port:",Source_port,"Dest_port:",Dest_port,
                "Length:",Length,"Checksum:",Checksum)

        except MySQLdb.Error, e:
            print "Error %d: %s" % (e.args[0],e.args[1])
            sys.exit(1)
        finally:
            if con:
                con.close()
        break

    #--------------------ICMP-------------------------------
    elif dtb == "5":
        try:
        # Open database connection
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                con = MySQLdb.connect("192.168.56.102","root","Welkom01","UNP" )

            # prepare a cursor object using cursor() method
                sql = con.cursor()
            # Prepare SQL query to INSERT a record into the database.
                sql.execute("SELECT Datetime,Type,Code,Checksum FROM ICMP")
                con.commit()

                data = sql.fetchall()

                for (Datetime,Type,Code,Checksum) in data:
                    print(Datetime,"Type:",Type,"Code:",Code,"Checksum:",Checksum)

            except MySQLdb.Error, e:
                print "Error %d: %s" % (e.args[0],e.args[1])
                sys.exit(1)
            finally:
                if con:
                    con.close()
            break

elif ans == "3":
    s.close
    print ("""
    Program will exit
    """)
    sys.exit()
elif ans != "":
    print ("""
    Wrong option, please select again
    """)
```