Solutions to Homework #3

Due 11:59pm, Sunday, 18 February, 2018

100 points total
Multiple submissions accepted.

_____
Name

_____
PeopleSoft ID

1. (51 pts) Complete the second socket lab: **Socket Programming Assignment 2: UDP**
Look in the Google Drive folder, under "Socket Programming Assignments" for the file "Socket2_UDPpinger." It has instructions on what to turn in.
There is a new tutorial on Blackboard on the initial page written by our TA's on how to install the PyScript interpreter in Windows which reqires installing Python and then PyScript. However, everything is available for the Mac and for Linux.

Start by going to the installation page for all platforms: https://www.python.org/downloads/ and choose the 2.7.14 release. Then install JetBrains at https://www.jetbrains.com/pycharm/download/. More information is available in the document posted on the initial page in BlackBoard.

If you wish to install Windows on your Mac (and why not, it's free), you'll need two things: a virtual machine program that will host the Windows OS, and then Windows. For the former, there are three popular choices: VMware Fusion ($100), Parallels ($40-ish with a student ID from educational sellers), and VirtualBox (https://www.virtualbox.org), free.

If you need the Windows software to install on top of the virtual machine (or for installing on a Windows machine), you can take advantage of UH's participation in Microsoft's Imagine program. Read more about that in "Downloading Windows 10.pdf" in the Extras folder on our Google Drive.

Include your code with your homework as a file that the TA's can download and run. You will need to create a ZIP archive as BlackBoard will only allow you to upload a single file.

Alternatively, since unlimited submissions are allowed, you can upload your homework first, and then the Python code.

Answer:

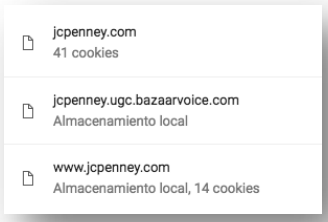
```
import sys, time
from socket import *

# Get the server hostname and port as command line arguments
argv = sys.argv
host = argv[1]
port = argv[2]
timeout = 1 # in second

# Create UDP client socket
# Note the use of SOCK_DGRAM for UDP datagram packet
clientsocket = socket(AF_INET, SOCK_DGRAM)
# Set socket timeout as 1 second
clientsocket.settimeout(timeout)
# Command line argument is a string, change the port into integer
port = int(port)
# Sequence number of the ping message
ptime = 0

# Ping for 10 times
while ptime < 10:
    ptime += 1
    # Format the message to be sent
    data = "Ping " + str(ptime) + " " + time.asctime()

    try:
       # Sent time
         RTTb = time.time()
       # Send the UDP packet with the ping message
         clientsocket.sendto(data,(host, port))
       # Receive the server response
         message, address = clientsocket.recvfrom(1024)
       # Received time
         RTTa = time.time()
       # Display the server response as an output
         print "Reply from " + address[0] + ": " + message
       # Round trip time is the difference between sent and received time
         print "RTT: " + str(RTTa - RTTb)
    except:
         # Server does not response
       # Assume the packet is lost
         print "Request timed out."
         continue

# Close the client socket
clientsocket.close()
```

2. (7x7 pts) Choose your favorite browser. Pick a commercial site that you don't visit and don't care if you have to log in again. Clear the cookies for just that site from your cache. You may have to search the help pages!
   In google, here's what I used: https://support.google.com/chrome/answer/95647?hl=en-419
   In Firefox, I navigated to this site by entering it in the URL field:
   about:preferences#privacy

   a. So what's the site you're planning to visit? _____

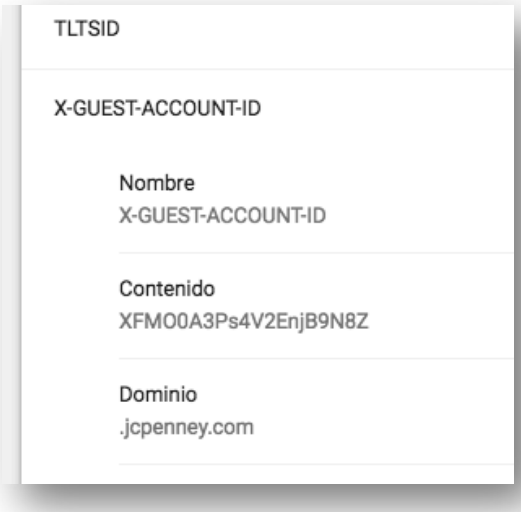
Find and clear any cookies that have the name of the site. Leave the cookie manager open.
I chose www.jcpenney.com. You should pick another site.

b. Go to the site's home page. Consult the cookie manager. Were cookies created by opening their home page? _____ How many? _____ Include a snapshot of what the cookie manager shows. For example, here's what Chrome showed me:



c. Click on a product on the web page. Observe the URL in your browser after you have clicked on the product. Paste it here.
https://www.jcpenney.com/p/arizona-long-sleeve-thermal-top/ppr5007324806?pTmplType=regular&rrec=true&rrplacementtype=norecs
Do you see a pattern of variables and values encoded in the URL? For example, separated by ampersand symbols (&'s)?
Answer: depends on your URL.

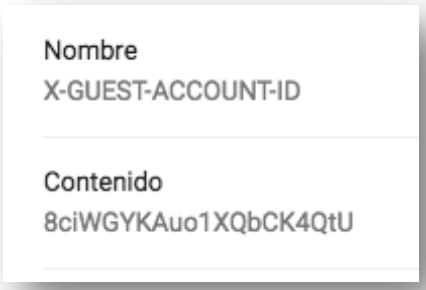
d. Examine one of the cookies. If navigating did not produce a cookie, check your settings, try another browser, or another site. Choose a cookie that looks like it has something that identifies you – a session ID, or a guest ID, that sort of thing, instead of the type of system or your apparent country or language. Inspect the cookie, and paste a snapshot of the details your browser provides. .
Here was the one I chose:



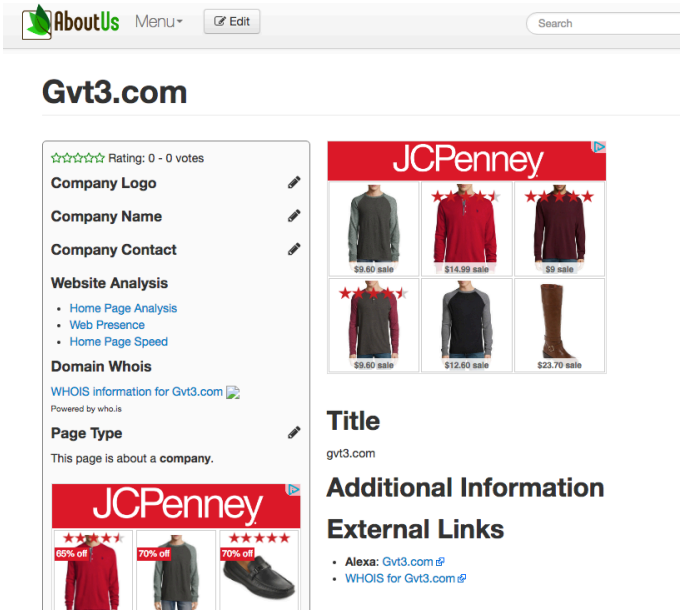
Although most of the fields were readable and had a variable-value combination, the guest account ID looks encrypted or at the least very random: XFM00A3Ps4V2EnjB9N8Z.
What about yours?

e. Add the item to your cart, and then clear the for the domain. Now refresh the page. Is the item still in the cart? _____

f. Examine the cookies again. Look for the same cookie from (d). Was it replaced? Does it still have the same unique identifier as before? Mine was not:



g. Wait a few minutes and go to a site with google ads. Did you see your cart item? I happened to need to go to aboutus.com/Gvt3.com and look what ads I got! Lol. My browser might not remember what I put in my cart, but Google did!


AboutUs
Menu
Edit
Search
Gvt3.com
Rating: 0 - 0 votes
Company Logo
Company Name
Company Contact
Website Analysis
Home Page Analysis
Web Presence
Home Page Speed
Domain Whois
WHOIS information for Gvt3.com
Powered by who.is
Page Type
This page is about a company.
JCPenney
65% off
70% off
70% off
JCPenney
$9.60 sale
$14.99 sale
$9 sale
$9.60 sale
$12.60 sale
$23.70 sale
Title
gvt3.com
Additional Information
External Links
Alexa: Gvt3.com
WHOIS for Gvt3.com

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