Full Stack Developer
FSD-10

Foundations of Web Development
420-WA5-AB

May 18, 2023

Agenda – Class 3

Agenda:

1. Review
2. Concepts – How the Internet Works
3. Operating Systems Concepts and UI
4. Class Exercise 2
5. Exit Quiz

Review

Lea - Course Documents – Class2_Under_The_Hood

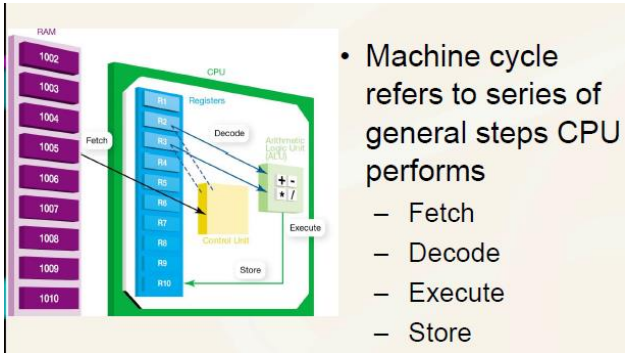
Bits and Bytes

2^3 8s place	2^2 4s place	2^1 2s place	2^0 1s place
1	0	1	1

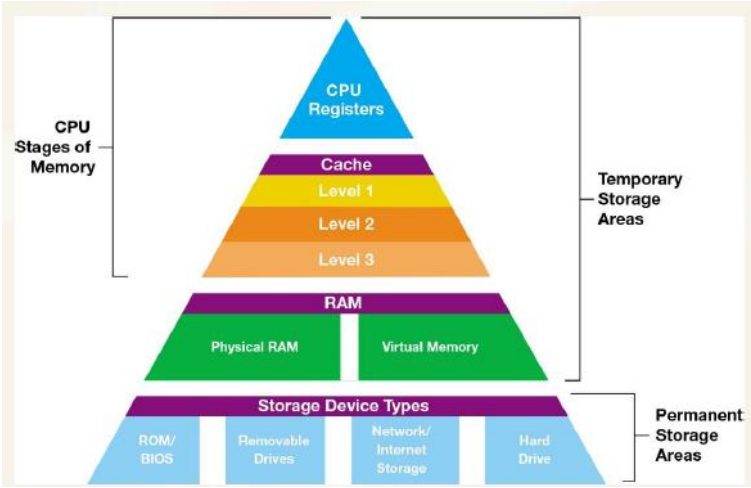
DECIMAL NUMBER	BINARY VALUE	HEXADECIMAL VALUE
00	0000	00
01	0001	01
02	0010	02
03	0011	03
04	0100	04
05	0101	05
06	0110	06
07	0111	07
08	1000	08

ASCII CODE	REPRESENTS THIS SYMBOL	ASCII CODE	REPRESENTS THIS SYMBOL
01000001	A	01100001	a
01000010	B	01100010	b
01000011	C	01100011	c

CPU



- Machine cycle refers to series of general steps CPU performs
  - Fetch
  - Decode
  - Execute
  - Store



Review – MyAcronyms Results

- Class Activity 1 will be graded as Class Exercise 1 worth 5% of the grade for the course.

- Checklist:
  - ❑ Submitted the MyAcronyms file on Lea
  - ❑ Submitted the MyAcronyms file on Moodle
  - ❑ Added your 3 Acronym entries to the glossary on Moodle for Class 1

Cathy Dutton

11. UI – User Interface

User interface (UI) design or user interface engineering is the design of user interfaces for machines and software, such as computers, home appliances, mobile devices, and other electronic devices, with the focus on maximizing usability and the user experience. In computer or software design, user interface (UI) design primarily focuses on information architecture. It is the process of building interfaces that clearly communicates to the user what's important. UI design refers to graphical user interfaces and other forms of interface design. The goal of user interface design is to make the user's interaction as simple and efficient as possible, in terms of accomplishing user goals (user-centered design).

https://en.wikipedia.org/wiki/User_interface_design

Review

3. Lea - Course Documents – Class2_HowTheInternetWorks

All about how the Internet works

1. Packets explained (3:21)
   https://www.youtube.com/watch?v=Gfoc3Cxgnpk

2. What is the Internet - Vint Cerf – History (3 :44)
   https://www.youtube.com/watch?v=Dxcc6ycZ73M

3. Wires, Cables, WiFi (6:40)
   https://youtu.be/ZhEf7e4kopM

4. DNS (6:44)
   https://www.youtube.com/watch?v=5o8CwafCxnU

5. How Search Works (5:12)
   https://www.youtube.com/watch?v=LVV_93mBfSU

Review

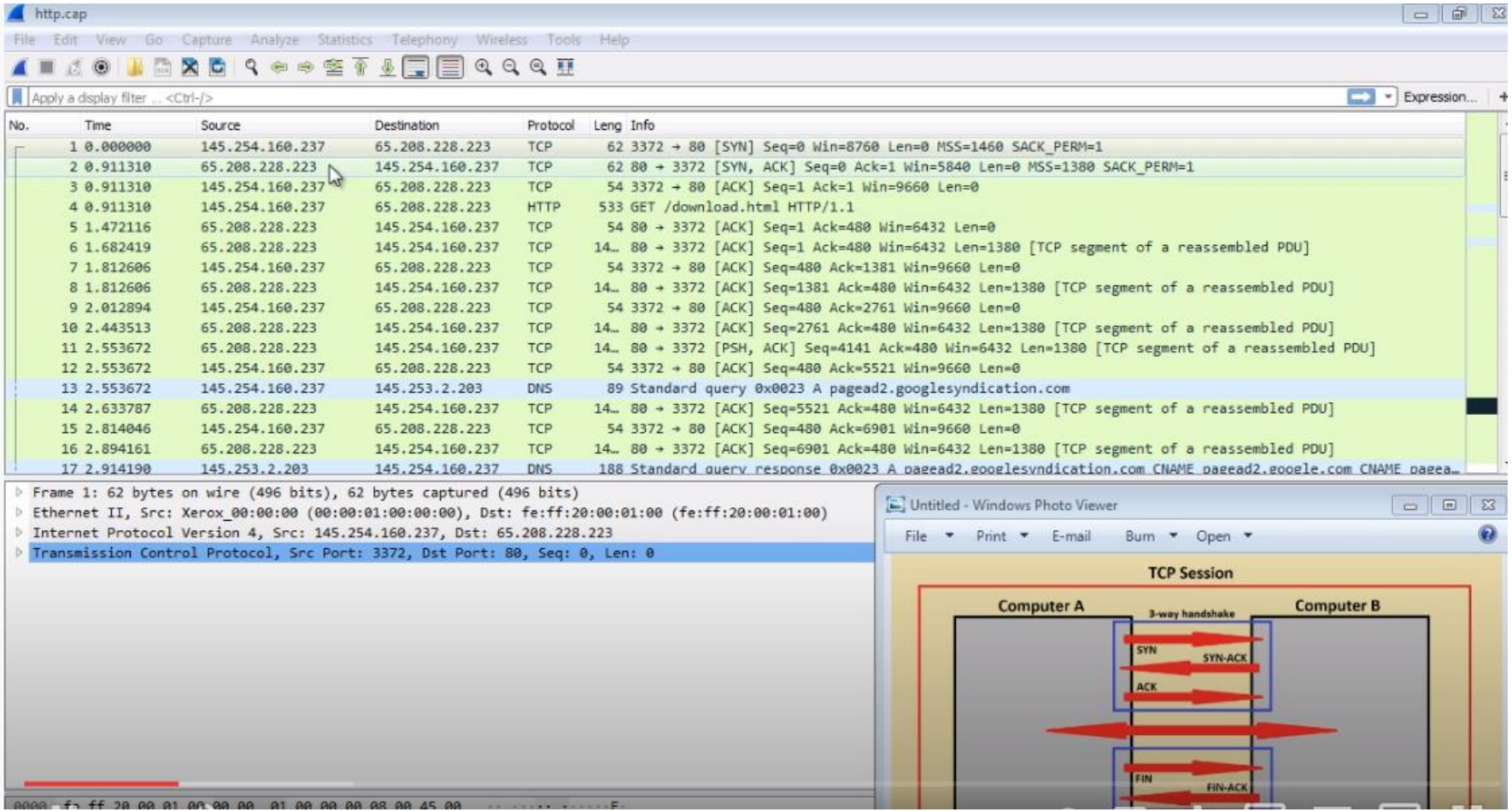
Another video:

How Computers Work: Binary & Data

https://www.youtube.com/watch?v=USCBCmwMCDA

Review

4. Packet Tracing

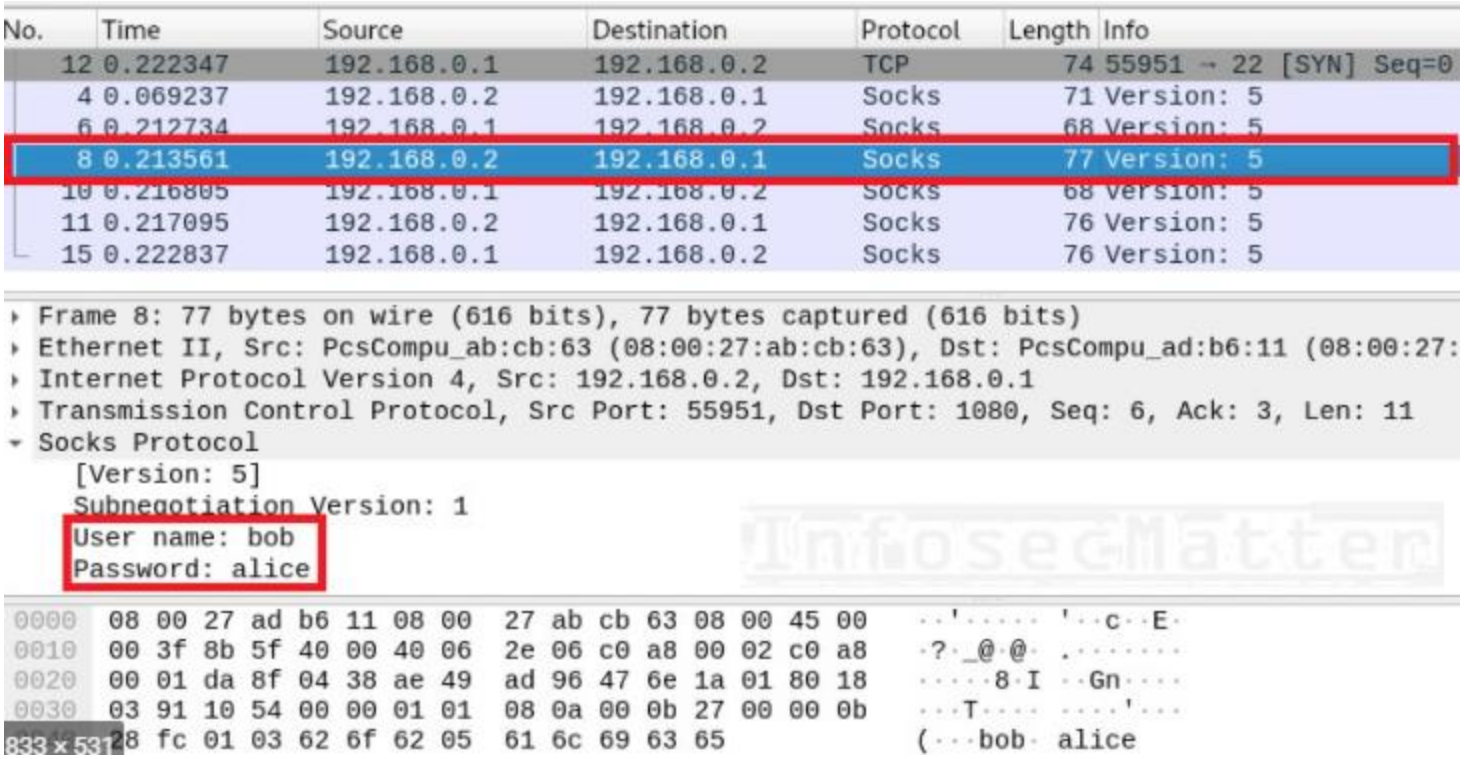


Networking Tutorial for Beginners - 03 - The packet trace
https://www.youtube.com/watch?v=BnJ5KVA_i1g

Concepts - How the Internet Works

Packet Tracing

Wireshark packets



Concepts – How the Internet Works – Class Discussion

Ask Google - What is my IP?

Trace a route to yahoo.com:

Use the Windows Command Prompt - Cmd

Tracert yahoo.com

Exit (to exit Windows Command)

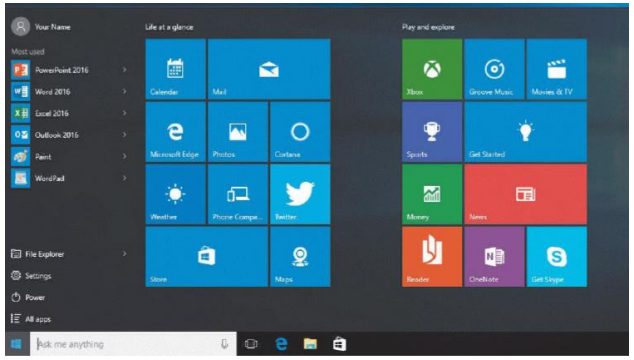
```
h>tracert yahoo.com

Tracing route to yahoo.com [98.137.11.163]
over a maximum of 30 hops:

  3    19 ms    16 ms    44 ms  10.170.192.186
  4    31 ms    24 ms    39 ms  216.113.126.102
  5    33 ms    25 ms    37 ms  de-cix.pat2.nyc.yahoo.com [206.82.104.78]
  6    33 ms    40 ms    72 ms  ae-7.pat1.dcz.yahoo.com [209.191.64.157]
  7    55 ms    52 ms    42 ms  et-8-0-0.pat1.che.yahoo.com [209.191.64.50]
  8    70 ms    71 ms    66 ms  ae-8.pat2.dnx.yahoo.com [209.191.64.75]
  9   102 ms    91 ms    89 ms  ae-8.pat1.gqb.yahoo.com [209.191.64.238]
 10    92 ms    91 ms    89 ms  et-19-1-0.msr2.gq1.yahoo.com [66.196.67.111]
 11    94 ms    96 ms    98 ms  et-18-0-0.clr2-a-gdc.gq2.yahoo.com [98.136.158.219]
 12    90 ms    88 ms    88 ms  lo0.fab3-1-gdc.gq2.yahoo.com [98.136.159.245]
 13   105 ms    98 ms   107 ms  usw2-1-lbc.gq2.yahoo.com [98.136.158.193]
 14    93 ms   112 ms    92 ms  yahoo.com [98.137.11.163]

Trace complete.
```

Operating Systems Concepts

- Client OS
- Server OS
- Cloud computing – Azure, O365, AWS
- Virtualization – VMWare, Oracle Virtual Box, Hyper-V
- Cloud storage – Google Drive, One Drive

Operating Systems UI

- User interface (UI) are controls that let you interact with Windows 10
- Tiles, live tiles
- Quick Access toolbar
- Files and folders - path – desktop – documents - Users
- Create and save a folders and files – docx, txt, pdf, zip
- Change file and folder views
- Open, edit, and save files
- Copy vs move
- Cortana



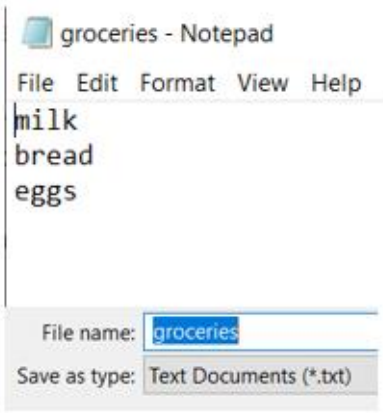
Common dialog box controls

element	example	description
Text box	1 - 27	A box in which you type text or numbers
Spin box	1	A box with up and down arrows; you can click or tap arrows or type to increase or decrease value
Option button		A small circle you click or tap to select the option; only one in a set can be selected at once
Check box		A small box that turns an option on when checked or off when unchecked; more than one in a set can be selected at once
List box		A box that lets you select from a list of options
Button	Save	A button you click or tap to issue a command

Class Exercise 2 – Part 1

1. Create a folder named wa5
2. In the wa5 folder, create 2 new folders named
   html shopping
3. In the html folder, create 1 new folder named
   images

4. In the shopping folder:



   a. Create a groceries file using Notepad as shown
   b. Add your 2 initials on a line before milk.
   c. Save the file
   d. Start Word, then open the groceries txt file in Word
   e. Save the groceries file as a Word Document
   f. Save the groceries file as a PDF
   g. View the properties to see the number of bytes stored for each of these file types
   h. View the properties to see which application is associated with each of these file types

Class Exercise 2 – Part 2

1. Using a text editor such as Notepad++, create a html file named index.html in the html folder. Use the w3schools HTML introduction to start your code.

The file may contain any html based on the learning from the Beginning HTML & CSS e-Book chapter 1 or from w3schools. For example:

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="utf-8">
  <title>My First Web Page</title>
</head>
<body>
  <h1>My First Heading</h1>
  <p>My first paragraph</p>
</body>
</html>
```

Class Exercise 2 – Part 2

2. In the images folder, place a small jpg named mypic.jpg with a size less than 100KB.

3. Use this image on your webpage, using the following code but replace the height and width values with your image properties.

```
<img src="images/mypic.jpg" alt="a picture" width="146" height="158" />
```

4. View your webpage in a browser.

5. Validate your html file using the HTML validator, https://validator.w3.org

6. Correct/debug any errors

Class Exercise 2

Work on Class Exercise 2 in your Meeting Room.

Each student is working on their own webpage, but you may assist each other with debugging as needed.

Use the following Teams of 3 for the meeting rooms.

Location	Teams of 3		
Meeting Room 01	1	8	15
Meeting Room 02	2	9	16
Meeting Room 03	3	10	17
Meeting Room 04	4	11	18
Meeting Room 05	5	12	19
Meeting Room 06	6	13	20
Meeting Room 07	7	14	21

Starts the meeting in the Meeting Room

Class Exercise 2

Select all of the files in the **wa5** folder

– right click – send to – compressed (zipped) folder

Rename the newly created zip file ex2.zip

Submit your ex2.zip file to the Class Exercise 2 dropbox in the Assignments section on Lea.

Exit Quiz

- Exit Quiz

  https://b.socrative.com/login/student/

  Room name 6118

Question 3: Using the ASCII code table, what are the first two letters of your first name in hexadecimal*? For example: The name Marie would be 0x4D61*