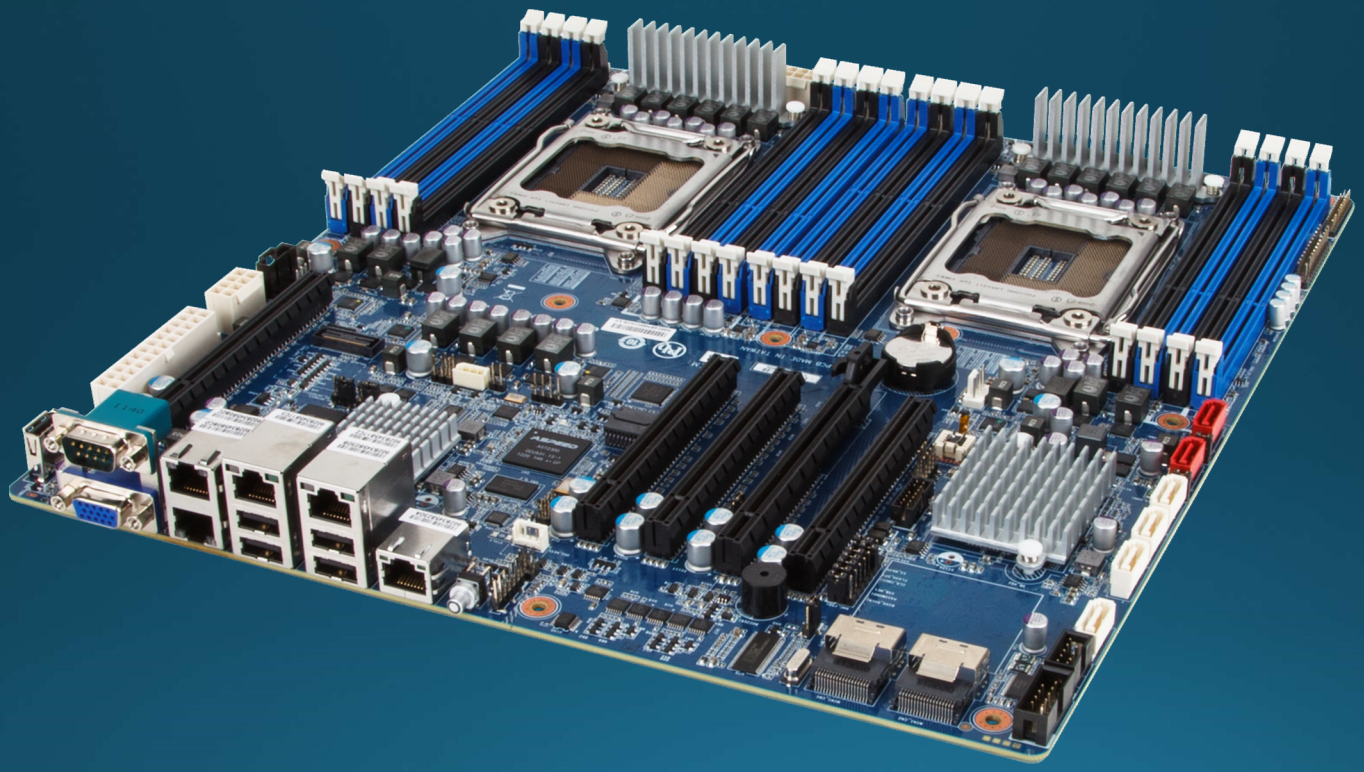
REMINDER

- 7:00 AM – 7:20 AM Homeroom - ***In class before 7:00 AM***
- 7:20 AM – 9:00 AM First Class
  - **9:00 AM – 9:20 AM Break**
- 9:20 AM – 11:00 AM Second Class
  - **11:00 AM – 11:10 AM Break**
- 11:10 AM – 11:50 AM Third Class
  - **11:50 AM – 12:30 PM Lunch**
- 12:30 PM – 1:40 PM Third Class continued
  - **1:40 PM – 1:50 PM Break**
- 1:50 PM – 3:30 PM Fourth Class

bits and Bytes – Pieces and Parts

Computers Hardware

Computer Hardware

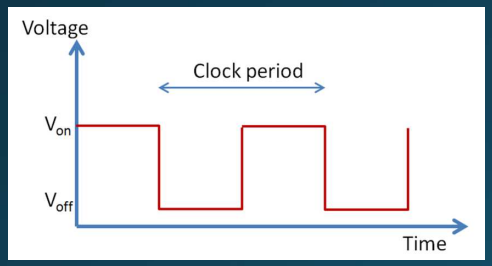


bits & Bytes

- **bit** is short for binary digit. ("1" or a "0")
- **Byte** is made up of 8 bits. Each byte represents a character (10101011).
  - 1,000 Bytes = **k**ilobyte
  - 1,000,000 Bytes = **M**egabyte
  - 1,000,000,000 Bytes = **G**igabyte
  - 1,000,000,000,000 Bytes = **T**erabyte
  - 1,000,000,000,000,000 Bytes = **P**etabyte

How Fast is Your Computer?

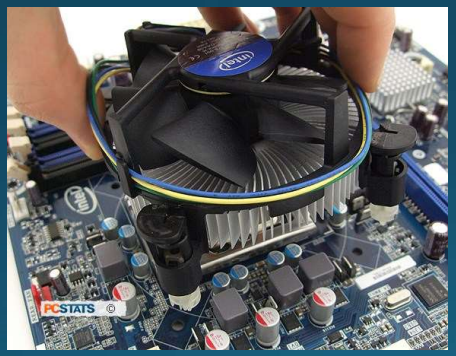
- Clock speed is a measure of how quickly a computer completes basic computations and operations and is measured as a frequency in Hertz (Hz).
  - Megahertz (MHz) is one million cycles per second
  - Gigahertz (GHz) is one billion cycles per second.



- *Ex: 2.8 GHz computer is running at 2,800,000,000 cycles per second.*

Microprocessor / Processor / CPU

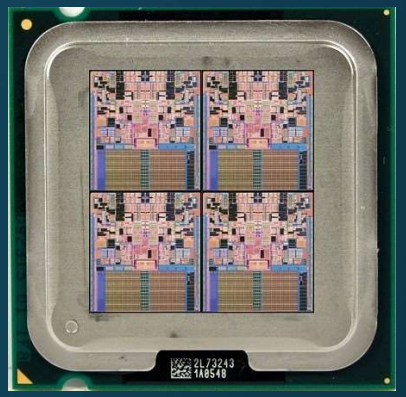
- These terms refer to the main part of the computer that does the actual work (the brain of the computer). The three terms are interchangeable.

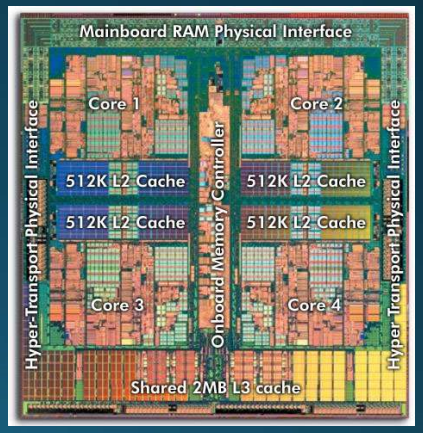


CPU stands for Central Processing Unit.

CPU Technical Specs

- **Speed** - The clock speed (frequency) of a CPU is how many instructions per second it can process and is typically reported in MHz or GHz. EX: A 3GHz processor can complete 3,000,000,000 instructions per second.
- **# of Cores** - A multi-**core processor** is a single computing component with two or more independent actual processing units (called "cores"), which are units that read and execute program instructions at the same time.
- **Power (watts)** – A CPU designed for a laptop will use less power to conserve battery usage and will cost more than a similar one designed for a desktop.





https://www.pugetsystems.com/labs/articles/Specs-Explained-CPU-137/

32-Bit vs 64-Bit CPU

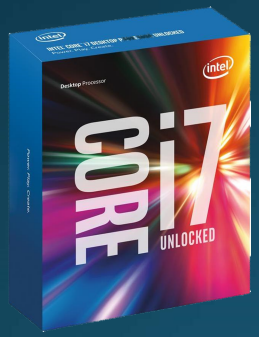
32-Bit

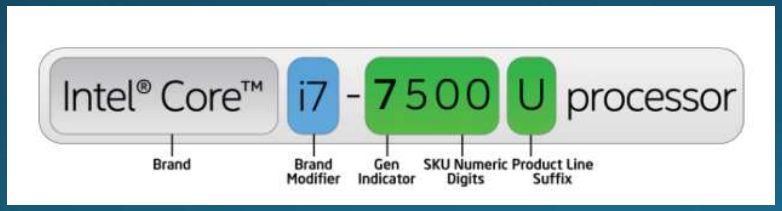
64-Bit

- 64-bit processors can perform more calculations per second than 32-bit, which affects the speed at which they can complete tasks
- 32-bit computers support a maximum of 3-4GB of memory, whereas a 64-bit computer can support memory amounts over 4 GB.

Pick Your Flavor of CPU

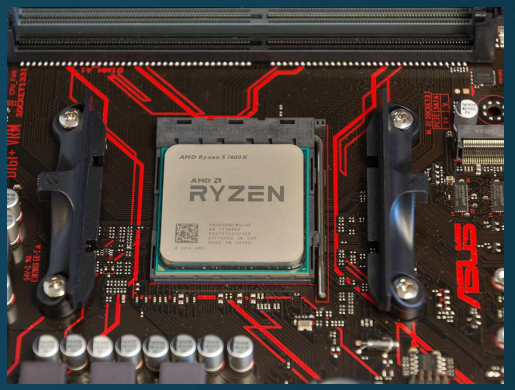
- Intel
  - **Celeron -** Support basic consumer applications, HD video and audio, and web browsing with reliable performance and high value.
  - **Pentium -** Accelerate portable 2-in-1s, laptops, desktops, and all-in-ones with a feature-packed processor.
  - **Core (i3, i5, i7, i9)** - Manage 3D, advanced video, and photo editing, play complex games, and enjoy hi-res 4K displays.
    - **Generation –** Typically identified by the first number after the core type:
      - Gen 2: 2x00, Gen 3: 3x00, Gen 6: 6x00, etc.





https://www.intel.com/content/www/us/en/products/processors/core.html

Pick Your Flavor of CPU

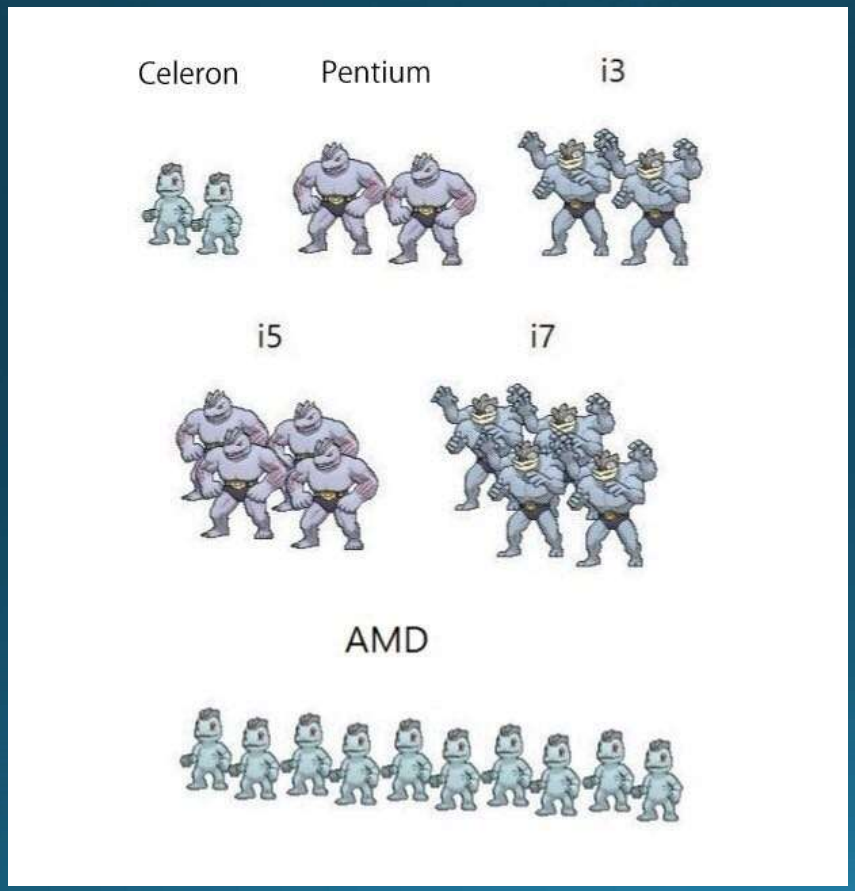


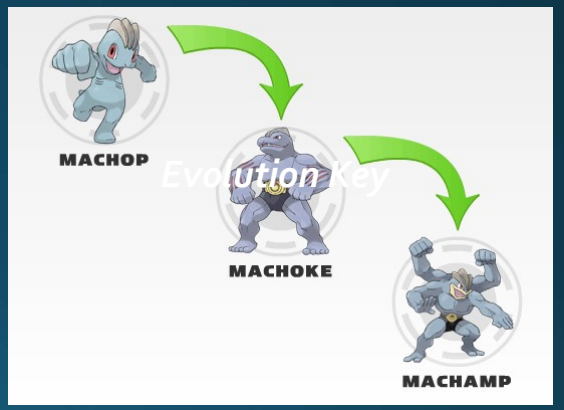
- AMD
  - **FX** - AMD FX™ processors deliver the highest clocks you can get on a consumer desktop PC, with at least twice the cores and more cache memory than comparably-priced competition.
  - **Sempron -> Athlon -> A-Series -> FX -> Ryzen**
  - AMD allows for clock speed to be played with

http://www.amd.com/en-us/products/processors/

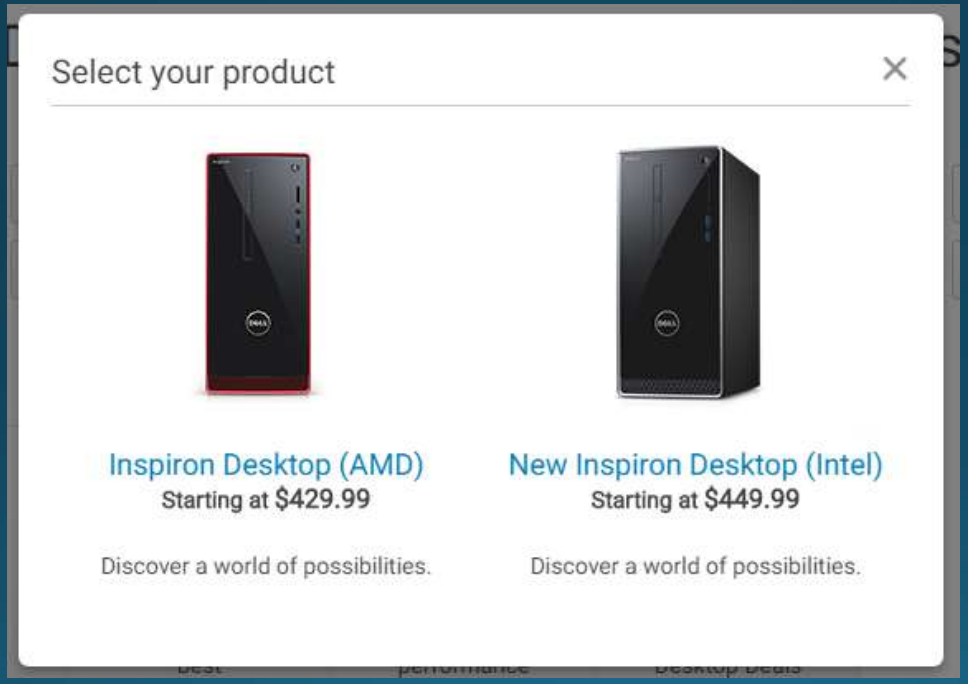
https://www.digitaltrends.com/computing/amd-vs-intel/
June 2, 2018

Intel vs. AMD – *Pokémon Style*



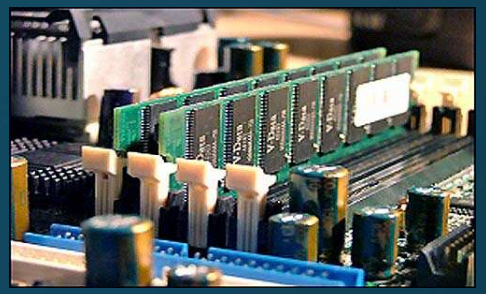


Intel vs. AMD – *Real World*



Dell.com June – 2017

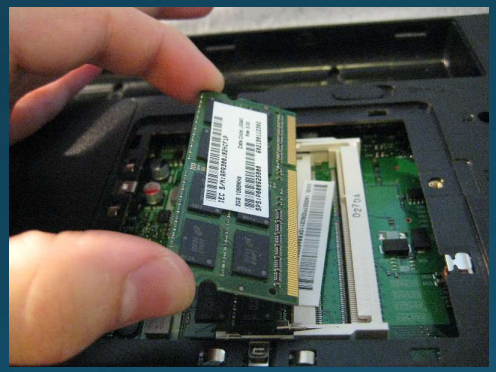
Computer Memory



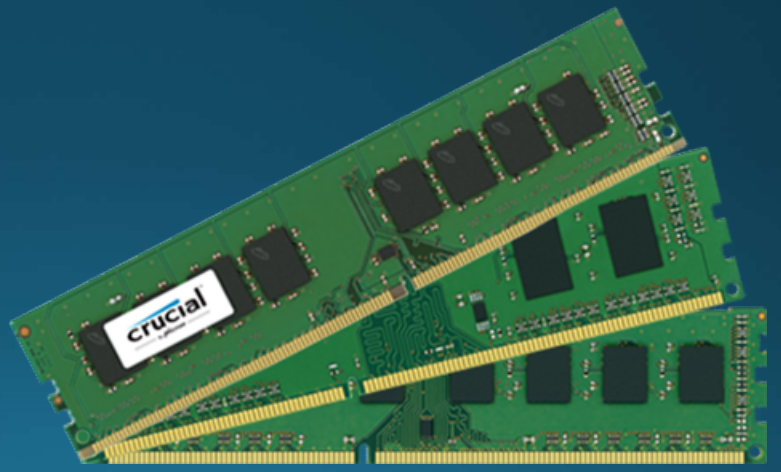
- **RAM** is **R**andom **A**ccess **M**emory
- It is the physical work area that programs use to operate
- The bigger the workbench the more tools / things you can use / do at one time

Computer Memory

Laptop RAM



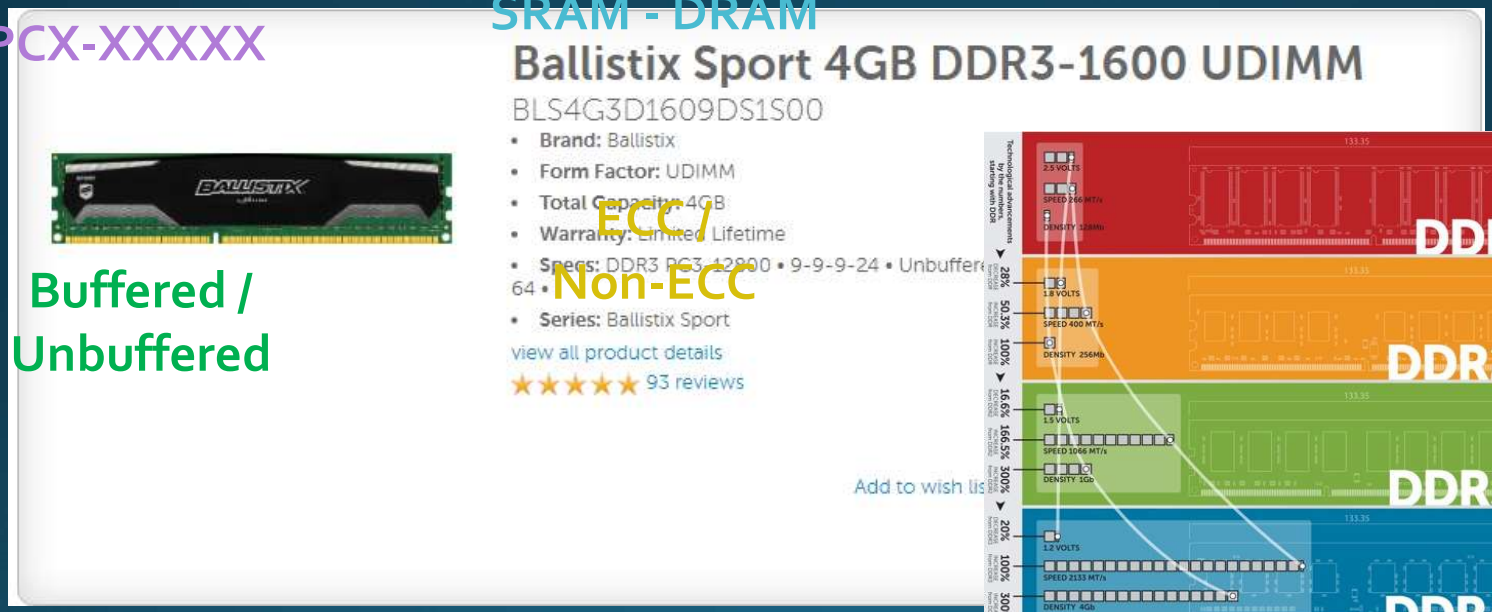
Desktop RAM



Computer Memory

PCX-XXXXX

SRAM - DRAM



Buffered / Unbuffered

ECC / Non-ECC

http://www.crucial.com/usa/en/systemscanner

Computer Memory

- **RAM** is volatile memory, which means save your work!!! Everything in RAM is gone when you Shut Down, experience a Power Loss or System Crash.
- Save your work frequently.

Computer Memory

Cache Memory **-** A type of RAM

CPU

- Use to store program instructions that are frequently re-referenced by software during operation.
- Fast access to these instructions increases the overall speed of the software program.

Disk Cache / Buffer

- Stores recently access data
- No need to access the spinning desk for every Read – *Slower*

Video memory

- Shared vs. dedicated

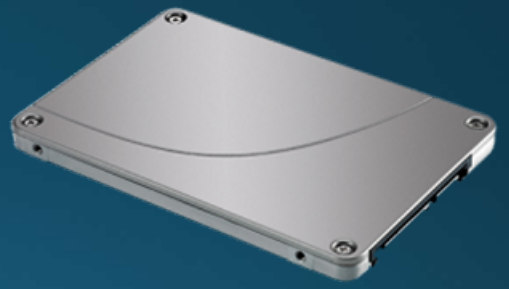
Storage – Where is my STUFF?

Files and Folders

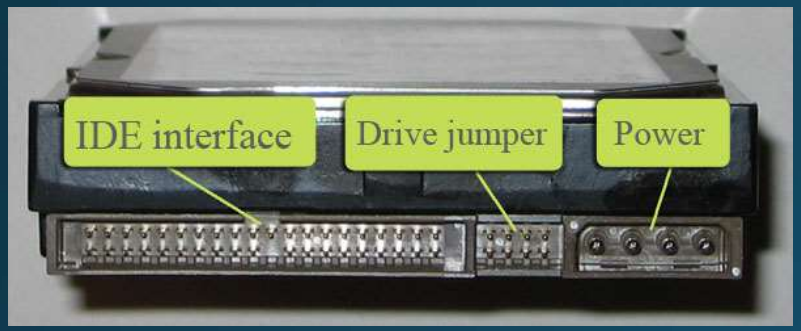
Software and Apps

Traditional Storage – Hard Drive / Disk

- Can be internal or external
- Kilobytes, Megabytes, Gigabytes, Terabytes and now… Petabytes!
- Connection types: IDE / SATA / mSATA
- Transfer Speeds
- RPM
- Cache Size
- Solid State – SSD

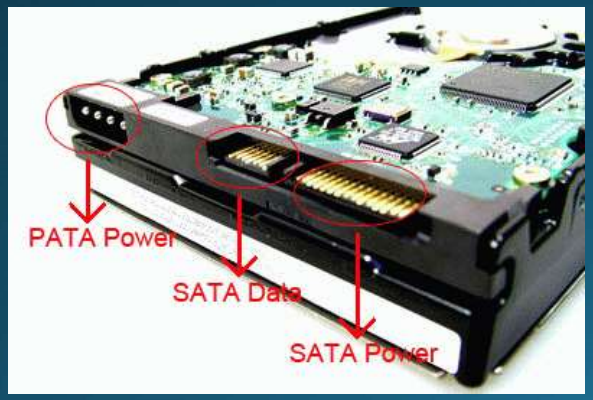


Traditional Storage – Hard Drive / Disk Connection Types



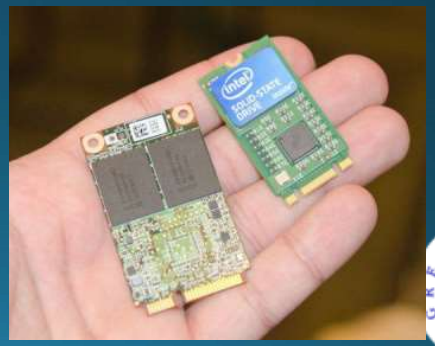
IDE / PATA

micro SATA
uSATA

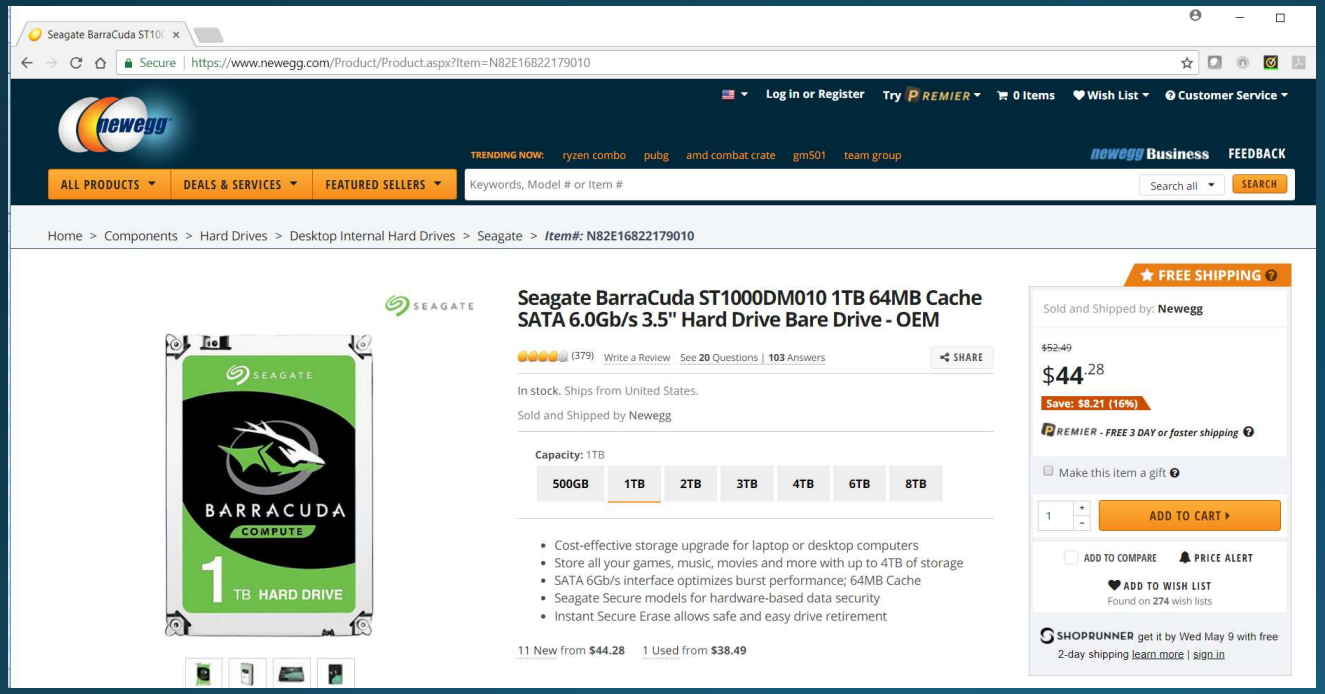


SATA

mSATA



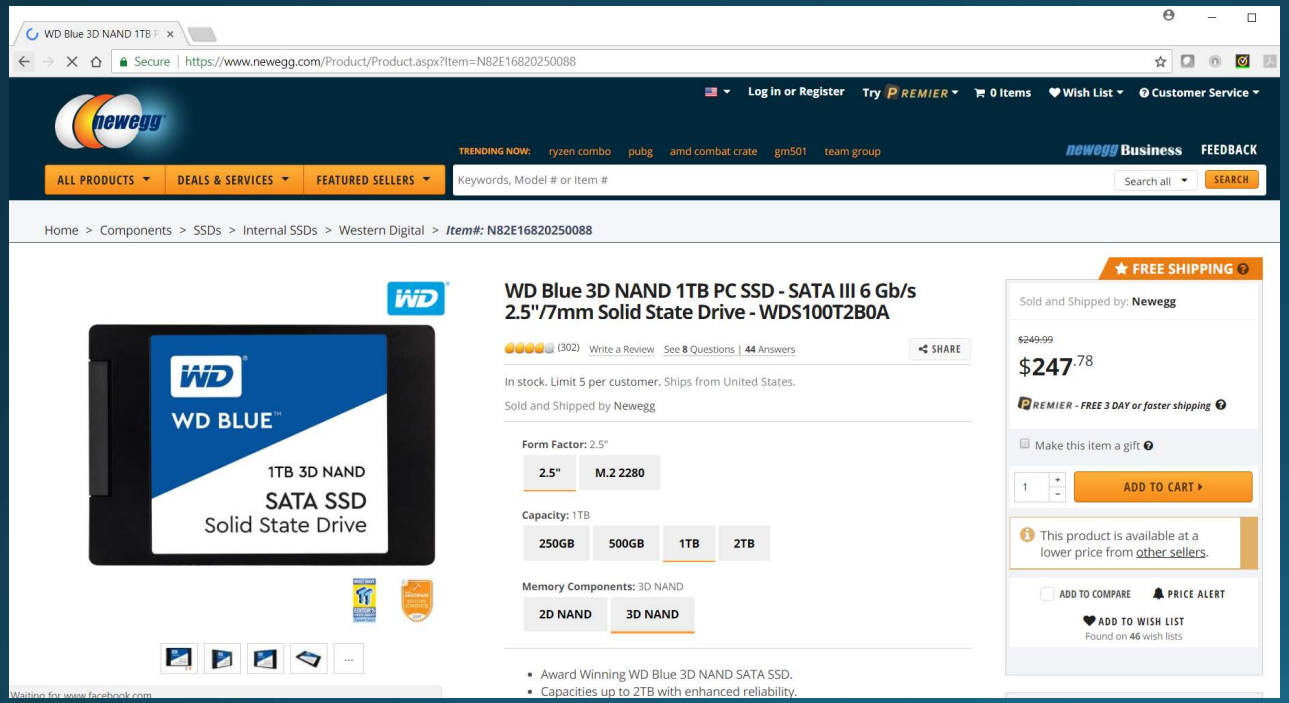
Spinning Disk – Characteristics



- Capacity: 1TB
- 7200 RPM
- SATA 6Gb/s
- 64 MB Cache
- 3.5” Format

www.newegg.com – May 2018

SSD / Flash

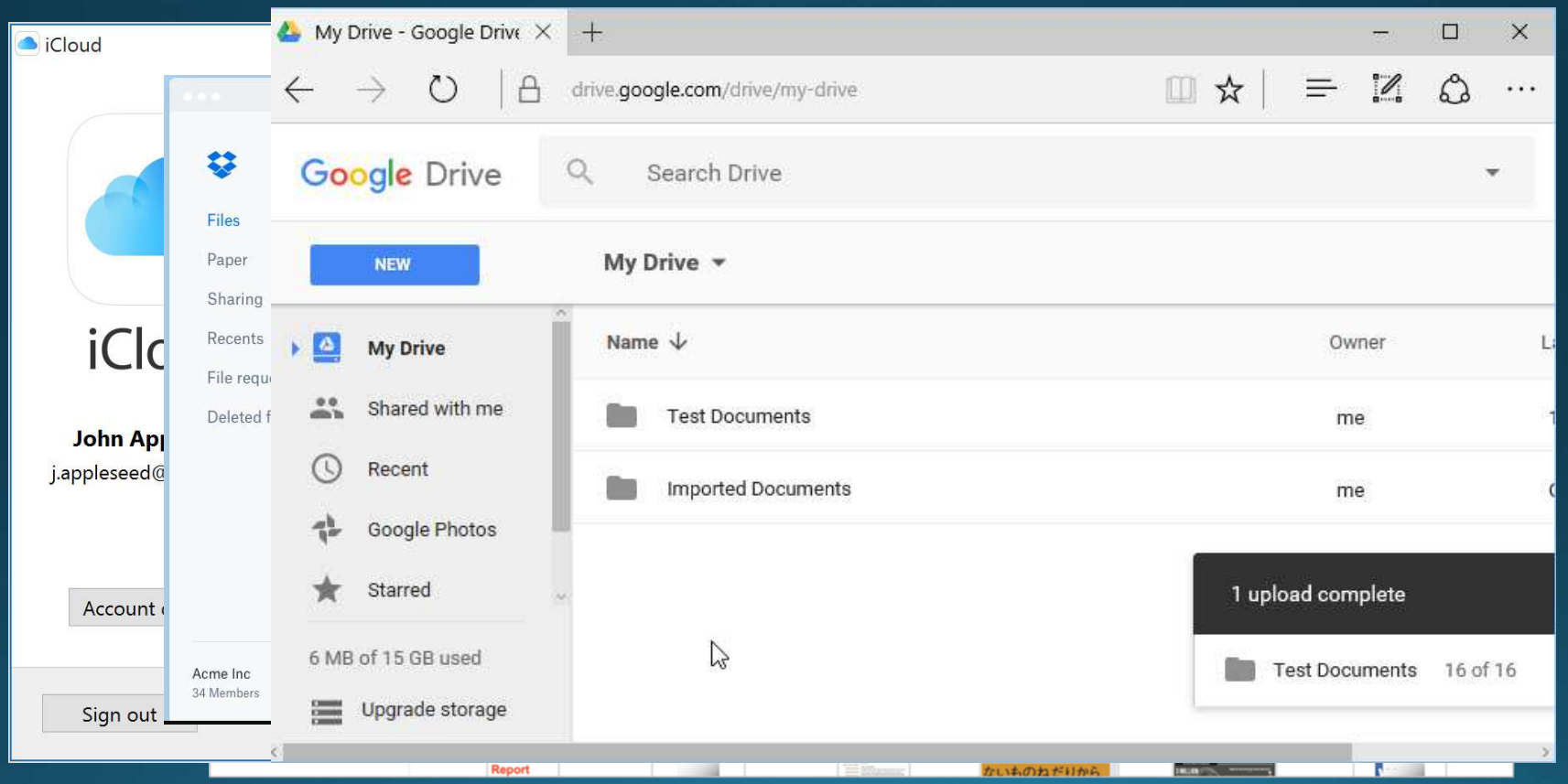


- Capacity: 1TB
- SATA III 6Gb/s
- 2.5” Format

- No “Cache”
- No “RPM”

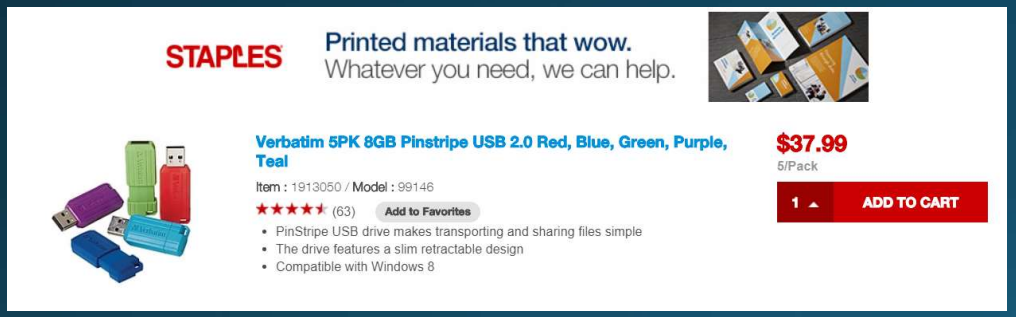
www.newegg.com - May 2018

Back Up Your Stuff!!!!



USB Flash Drive

- Also referred to as a **USB drive, USB stick, thumb drive, pen drive, jump drive, flash-drive or USB memory**
- GB ($) to TB ($$$)



http://www.staples.com May 2018

The Endpoint

An endpoint device is an Internet-capable computer hardware device on a TCP/IP network. The term can refer to desktop computers, laptops, smart phones, tablets, thin clients, printers or other specialized hardware such POS terminals and smart meters.

http://whatis.techtarget.com/definition/endpoint-device

The Endpoint - Desktop

The Endpoint - All-in-One

The Endpoint - Laptop

The Endpoint - Tablet

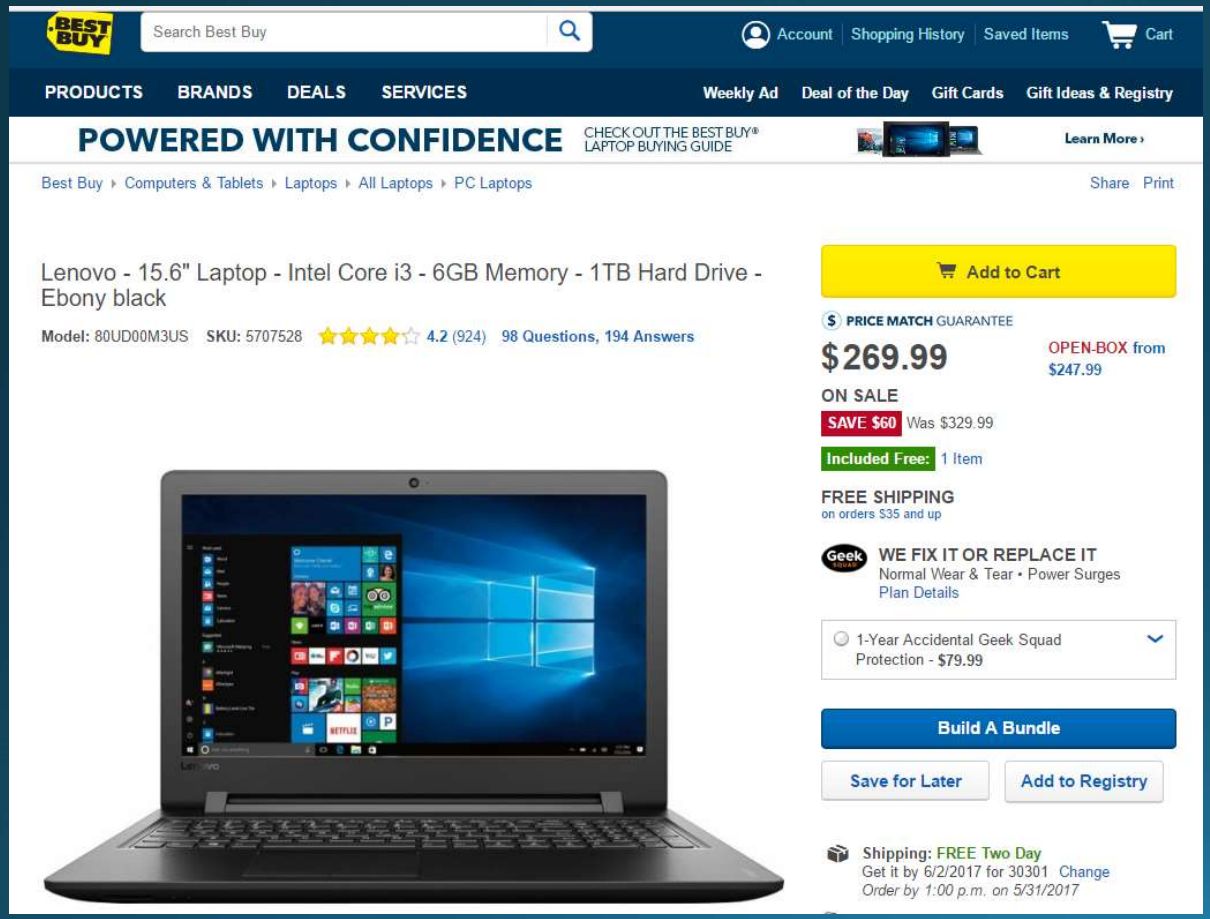
The Endpoint - Tablet (MS Surface)

The Endpoint - Chromebook

- Chromebooks are special laptops running a version of Linux that are essentially "Browsers-in-a-box"
- As inexpensive as $75.00
- It's only application is the Chrome Browser
- Can run any "cloud-based" application. (As long as it works in Chrome)

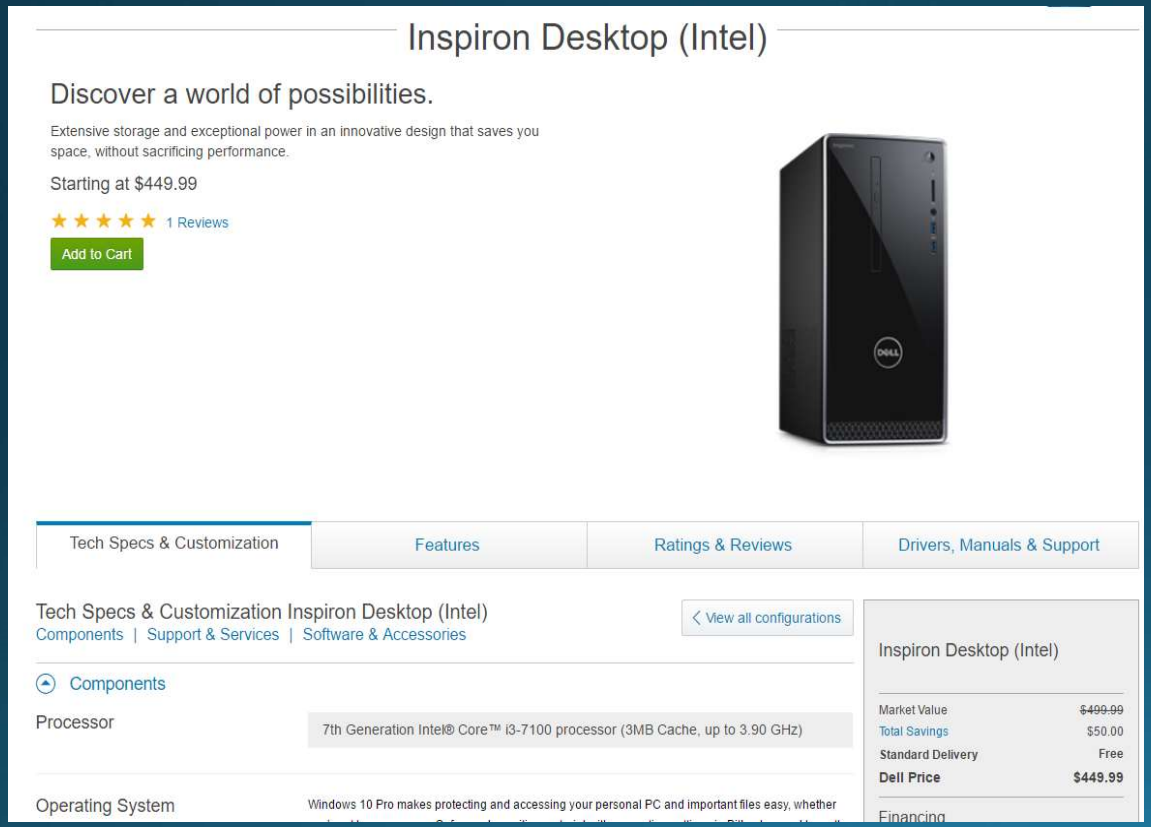
- MUST HAVE AN INTERNET CONNECTION

Laptop example –*June 2017*



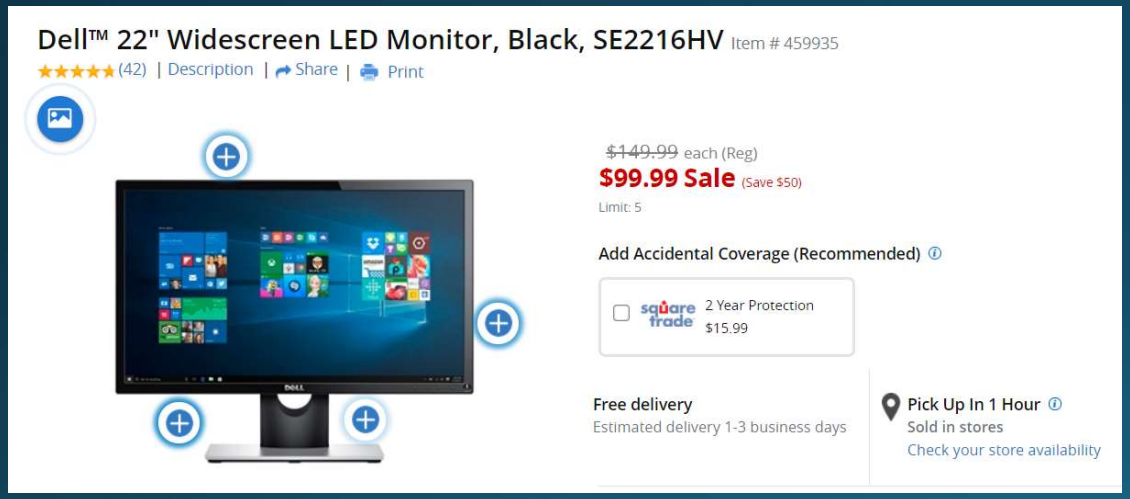
- 6th Gen Intel® Core™ i3-6100U mobile processor
- 6GB system memory
- 1TB hard drive for ample file storage space - 5400 rpm spindle speed
- Intel® HD Graphics 520
- 15.6" display - LED backlight
- 1 USB 3.0 port
- HDMI output
- Bluetooth 4.0
- Wireless network
- Windows 10

Desktop example –*June 2017*



- 7th Gen Intel® Core™ i3-7100U mobile processor
- 8GB, 2400MHz, DDR4; up to 16GB
- 1TB (64MB Cache) 7200 RPM SATA 6Gb/s
- Intel® HD Graphics 630 with shared graphics memory
- DVDRW Optical drive
- 6 USB (2 usb 3.0)
- Ethernet port
- Dell Wireless 1707 Card 802.11bgn + Bluetooth 4.0
- HDMI output
- No Display
- Windows 10

Monitor example –*June 2017*



- 22" screen
- Full HD (1920 x 1080) resolution in a 16:9 widescreen format.
- Tilts 5° forward or 21° backward to your preferred viewing position

The Browser

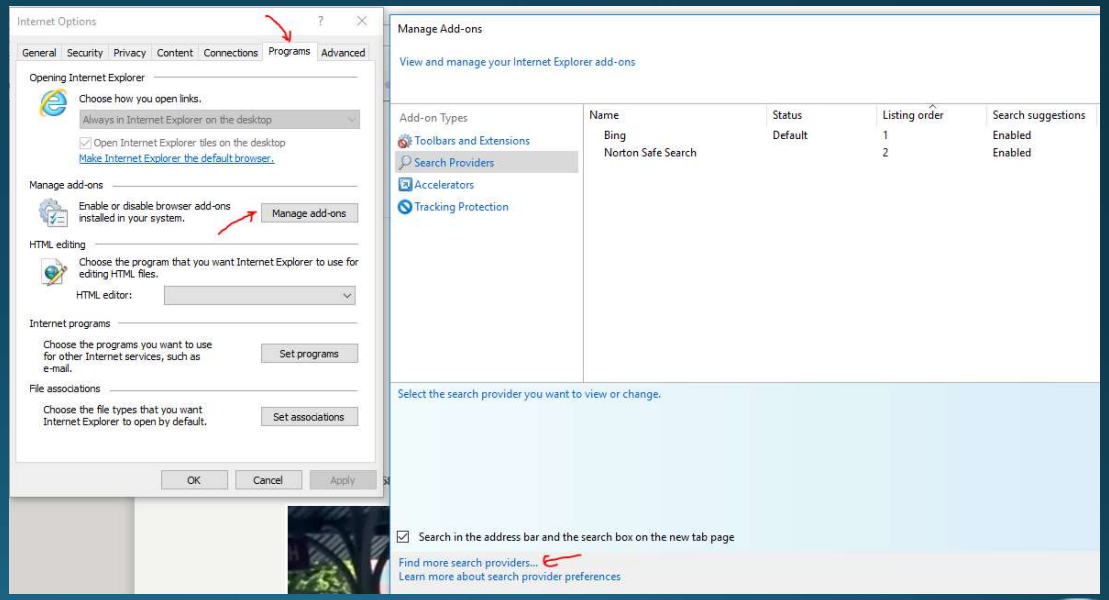
To Surf the Dark Web.....

Changing your Search Engine

Google: *https://support.google.com/websearch/answer/464?hl=en*

Internet Explorer 11

1. Open Internet Explorer.
2. In the top right corner of the search box, click the down arrow.
3. Click **Add**.
4. Select **Google Search**.
5. Click **Add.**
6. In the top right, click Settings ⚙.
7. Select **Manage add-ons**.
8. Click **Search providers**.
9. Select **Google**.
10. Click **Make this my default search provider.**



Clearing Cookies, Cache and History

https://support.google.com/accounts/answer/32050?hl=en

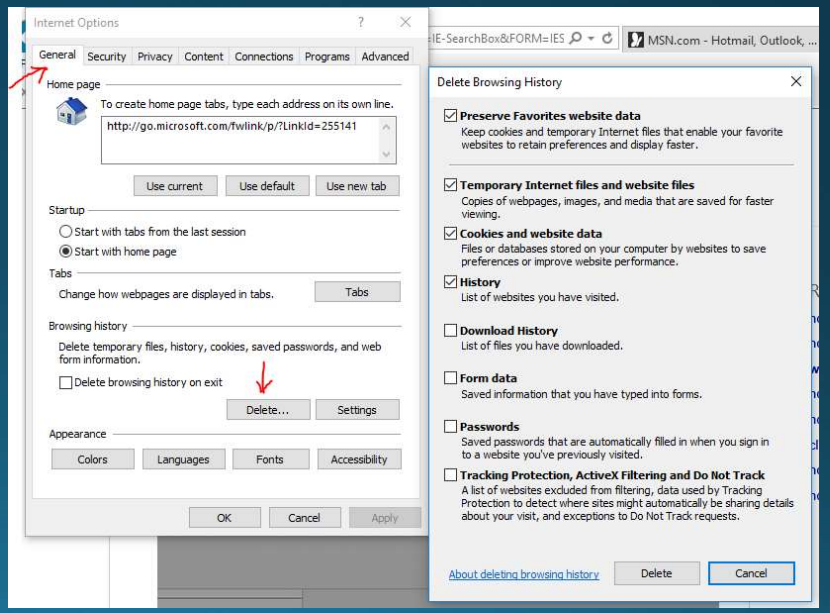
Chrome

Google Chrome

Computer

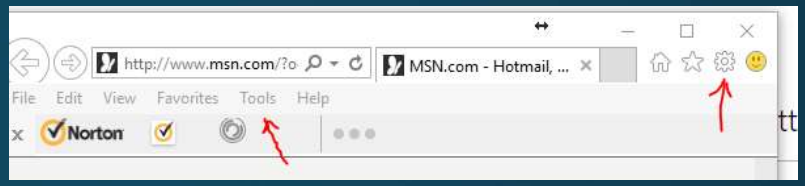
1. Open Chrome.
2. On your browser toolbar, click More ⋮.
3. Point to **More tools**, and then click **Clear browsing data**.
4. In the "Clear browsing data" box, click the checkboxes for **Cookies and other site and plug-in data** and **Cached images and files**.
5. Use the menu at the top to select the amount of data that you want to delete. Choose **beginning of time** to delete everything.
6. Click **Clear browsing data**.

Internet Explorer

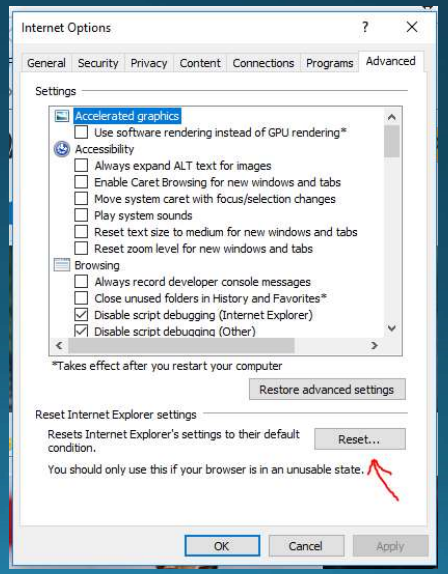


Resetting Browser setting - IE

- On the **Tools** menu, tap or click **Internet options.**

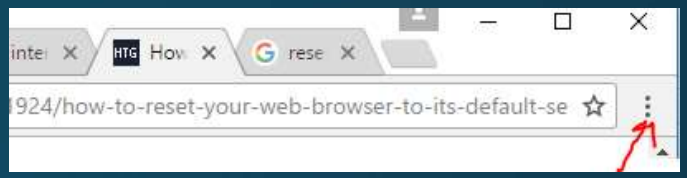


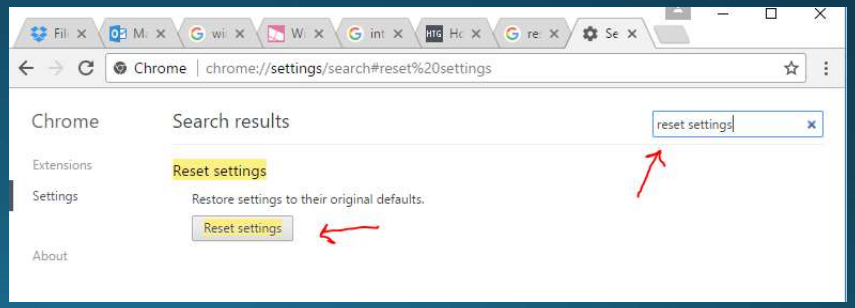
- In the **Internet Options** window, tap or click the **Advanced** tab.



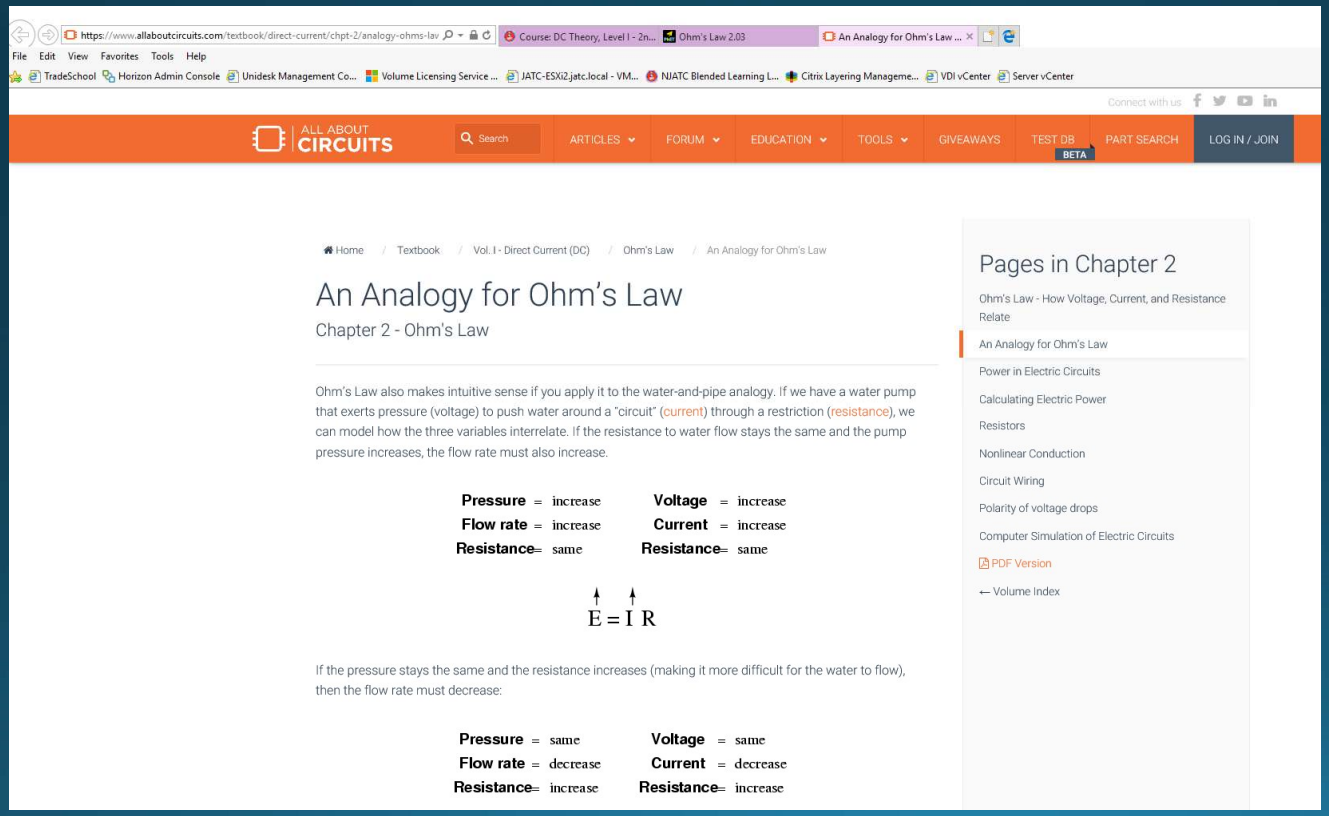
Resetting Browser setting - Chrome

- Click the menu button (three horizontal lines) in the upper-right corner of the browser window and select "Settings"
- Start typing "reset settings" in the search box. Settings matching the search term start displaying. Click the Perform a search for "reset browser" and you'll see the Reset browser settings button.

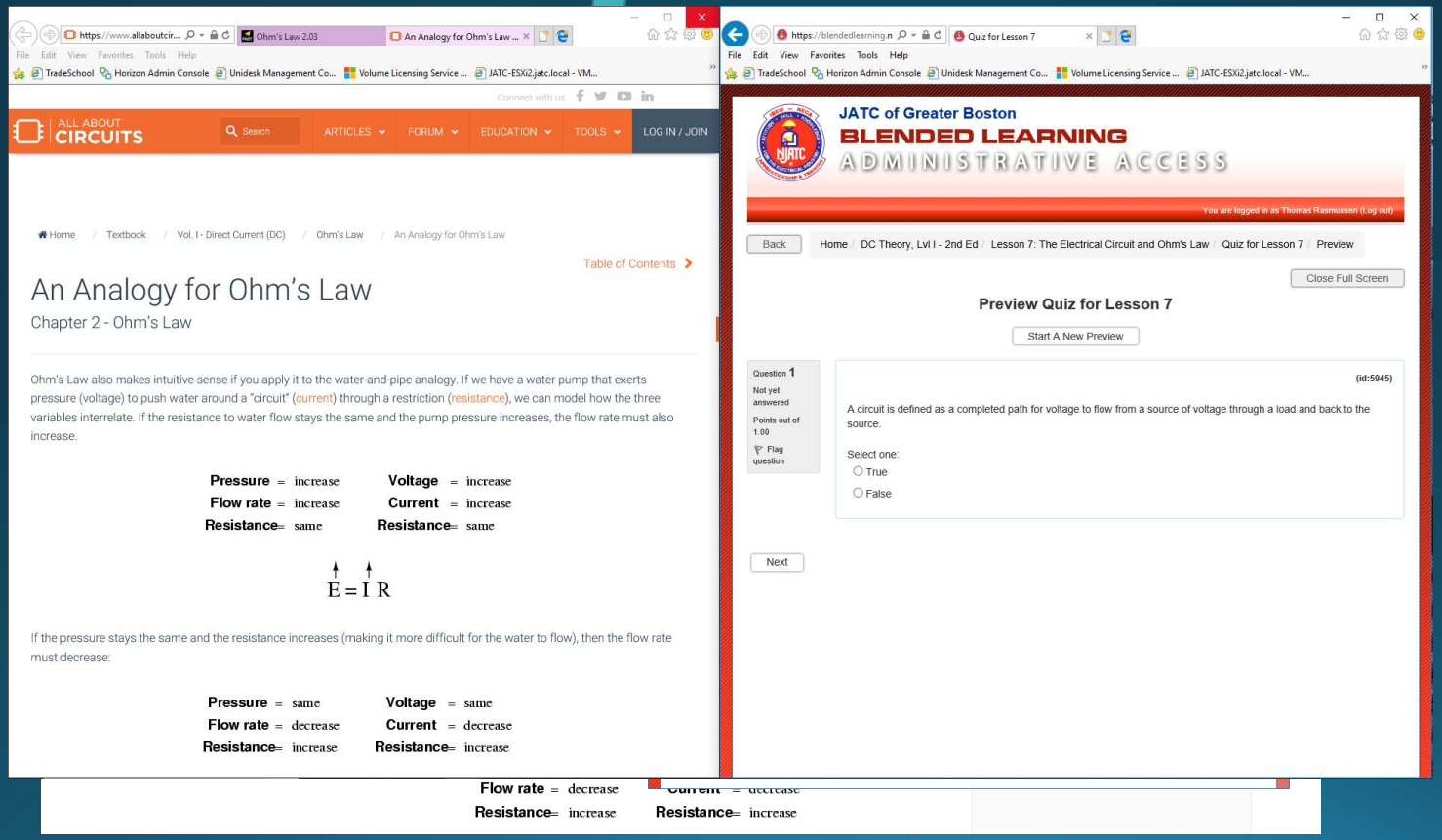




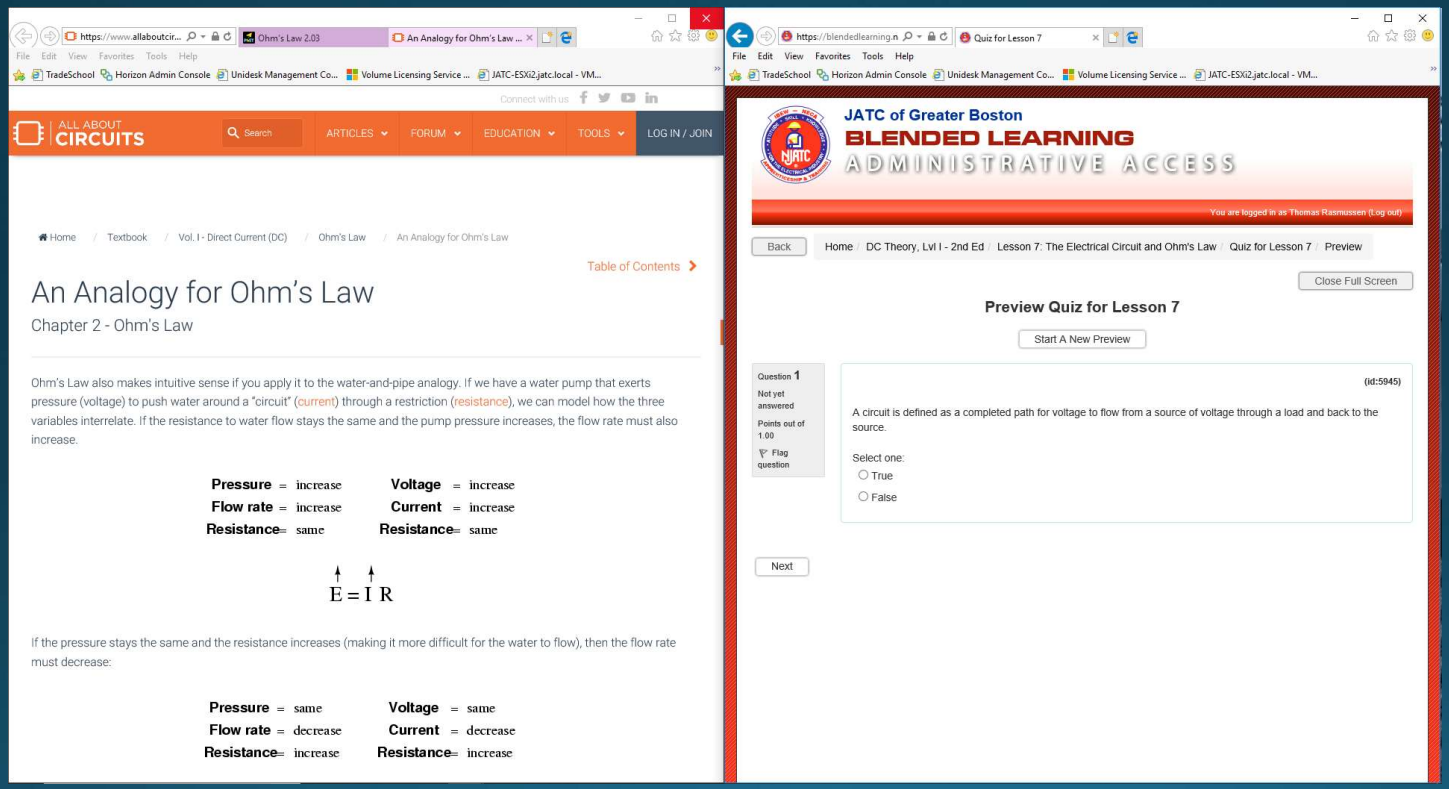
LMS Tip – Split screen BEFORE



LMS Tip – Split screen Click&Drag



LMS Tip – Split screen AFTER



NOTE: Use Windows + Arrow keys to position equally

Being Productive

Why be in a rush to sit in traffic

Take 30 min to do your homework

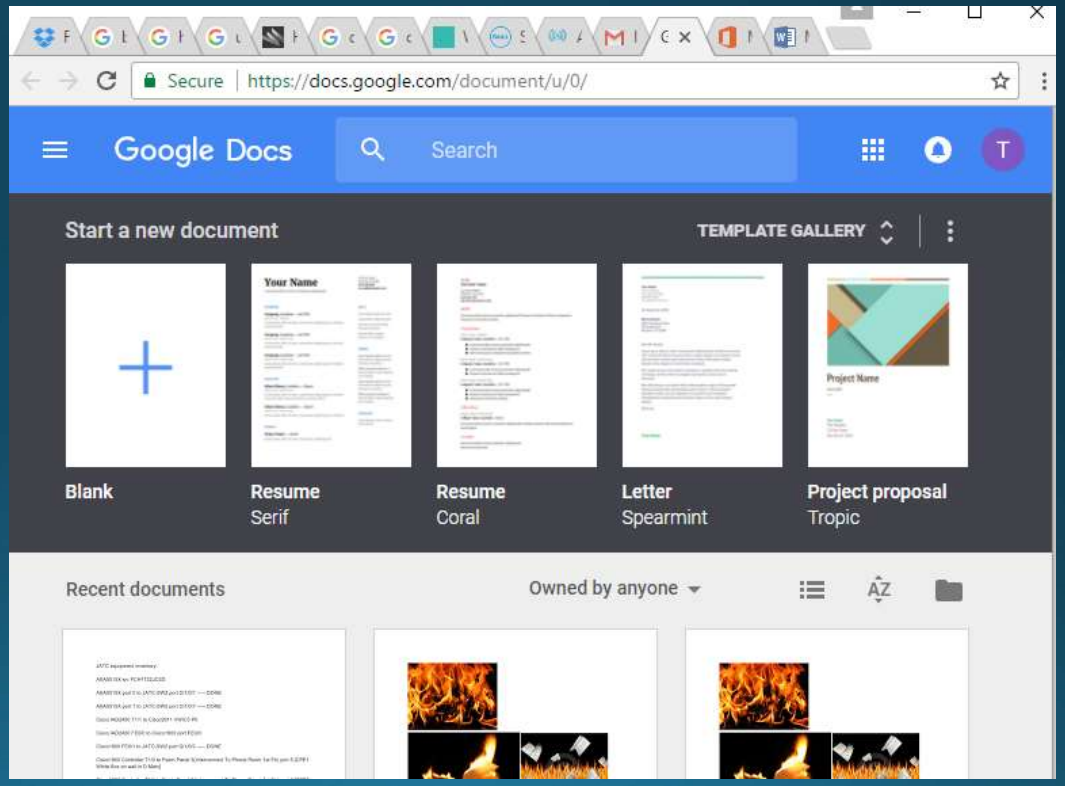
Computer Labs

Room: 202

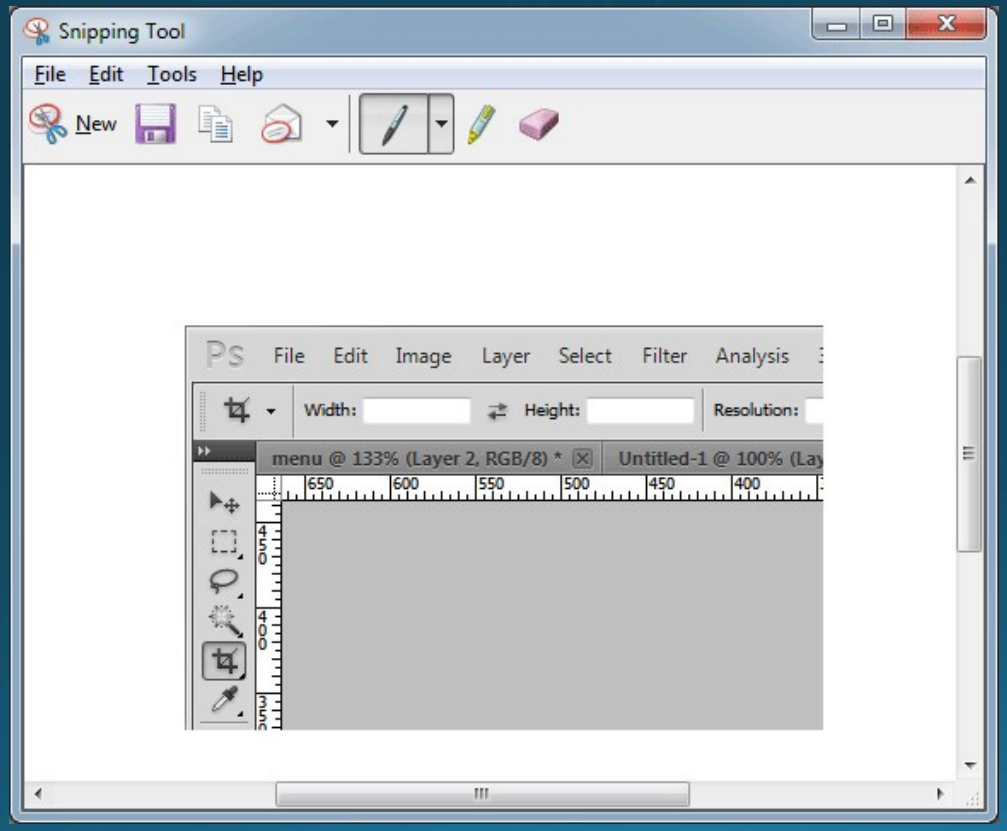
Room: 3A

Doing Homework - Google Docs

- Word Processor
- Spreadsheet
- Free
- Gmail account



Snipping Tool



Screenshot iPhone

How to take a screenshot on your iPhone, iPad, and iPod touch

Learn how to capture the screen on your iOS device, and add drawings or text with Markup.

1. On an iPhone 8 or earlier, iPad, or iPod touch, press and hold the Top or Side button.
2. Immediately click the Home button, then release the Top or Side buttons.
3. In iOS 11, a thumbnail of your screenshot appears in the lower-left corner of your device. Tap the thumbnail to add drawings and text with Markup, or press and hold the thumbnail to share the screenshot. Swipe left on the thumbnail to dismiss it.

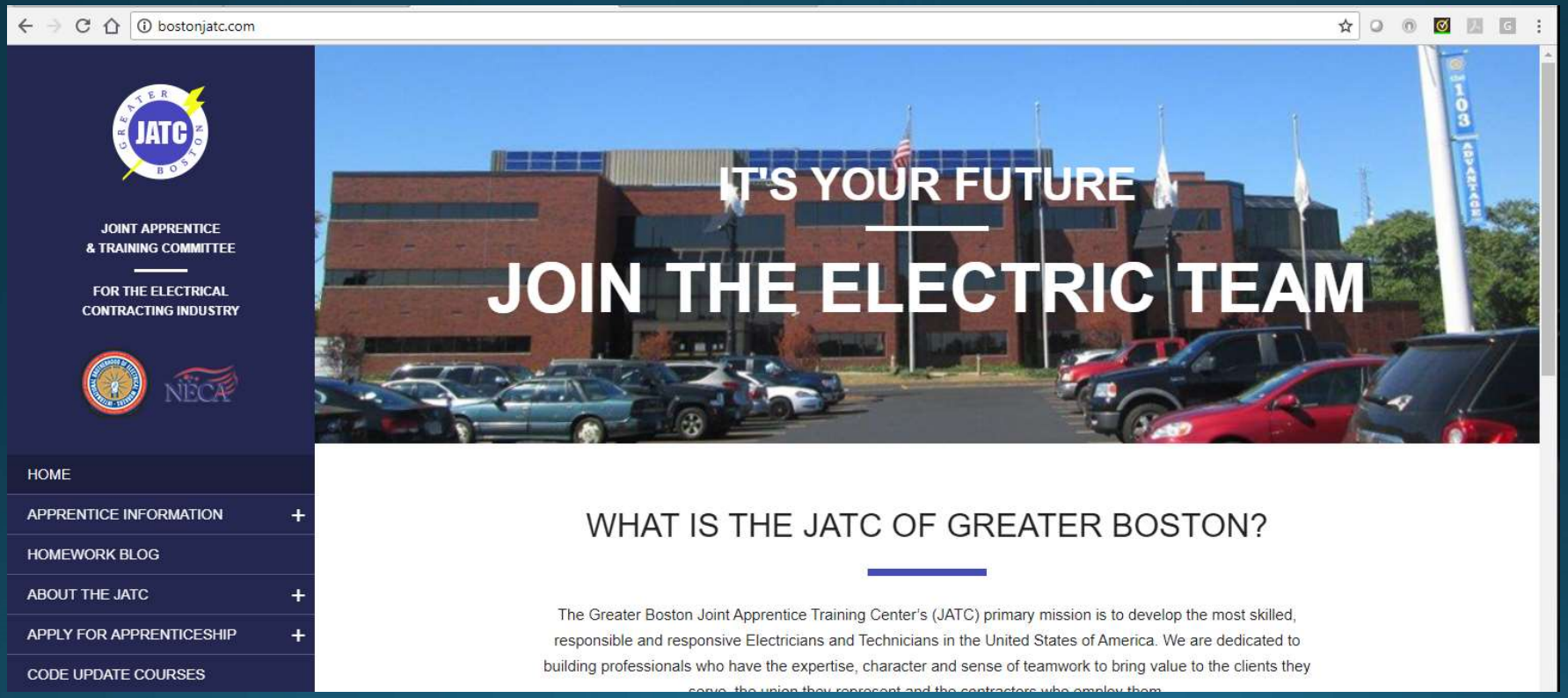
To find the screenshot you just took, along with ones you've taken before, go to Photos > Albums and tap Screenshots.

https://support.apple.com/en-us/ht200289

Screenshot Android

- Press and hold the home button and the power button at the same time.

1st Stop for Questions



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Boot Camp Information

Apprentices attending week of June 25

Please see the below attachments for Apprentice Boot Camp Schedule and Information for June 25, 2018 – June 29, 2018

Boot Camp Schedule

Boot Camp Group

Friday, June 29, 2018 7:00 AM – 3:30 PM

List of Guest Speakers: **List of Guest Speakers**

Klein Virtual Boot Camp Due Dates: Lessons 1-4 on 6/22 @ 3:00 PM, Lessons 5-7 on 6/28 @ 3:00 PM

Financial Tools for the Trades Training Due Date (Boot Camp Assignment**)**: August 1, 2018 @ 3:00 PM

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IBEW 103 JATC Scholarship Application 2018-2019

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No School

Test / Quiz Makeup days

JATC of Greater Boston | 2017-2018 Vacation/Make-Up Calendar

Test/Quiz Make Ups will run from 8:00 AM to 10:00 AM

AUGUST 2017

Su	M	T	W	Th	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

FEBRUARY 2018

Su	M	T	W	Th	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28			

10 Test/Quiz Make Ups
19 Presidents' Day

4 Labor Day
11 First Week of School
30 Test/Quiz Make Ups

SEPTEMBER 2017

Su	M	T	W	Th	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

MARCH 2018

Su	M	T	W	Th	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

10 Test/Quiz Make Ups
19-23 March Vacation Week

9 Columbus Day
21 Test/Quiz Make Ups

OCTOBER 2017

Su	M	T	W	Th	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

APRIL 2018

Su	M	T	W	Th	F	S
	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

7 Test/Quiz Make Ups
16 Patriots Day

4 Test/Quiz Make Ups
18 Test/Quiz Make Ups

NOVEMBER 2017

MAY 2018

12 Test/Quiz Make Ups
28 Memorial Day

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2017-2018 Schedules

[table “45” not found /]

Second Year Electrical Schedule

All apprentices will report to school at 7:00 AM

Show 14 entries Search:

Semester	Week Number	Date	Academics	Shop
2	12	Wednesday, June 20, 2018	A,B,C,E,F,G	D,H

Showing 1 to 1 of 1 entries Previ Next

[table “79” not found /]

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Homework Blog - Boston
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BLOG
WEDNESDAY, JUNE 13, 2018
Wednesday, June 13, 2018 Second Year Electrical Group A AC Theory, Funk, R. Quiz #2, Homework: LMS #3 and 4 Transformers, Whalen, D. Quiz -6, Homework: N/A AC Theory, Adjemian, R. No Test/Quiz, Homework: Study Chapters 4, 5 and 6 for final exam Group B Circuitry, O'Connell, D. Module #4,... Read more
This entry was posted in Uncategorized on June 14, 2018 by Adrienne Itri .
Tuesday, June 12, 2018 Group A and B Signals, N/A Code/517, Naughton, D. Final Exam Fire Alarm, N/A Group C and D Grounding and Bonding, Whalen, D. Final Group E and F OSHA 30, Spellman, T. Final MC Shop, Donovan, M. Final
This entry was posted in Uncategorized on June 13, 2018 by Adrienne Itri .
THURSDAY, MAY 7, 2018

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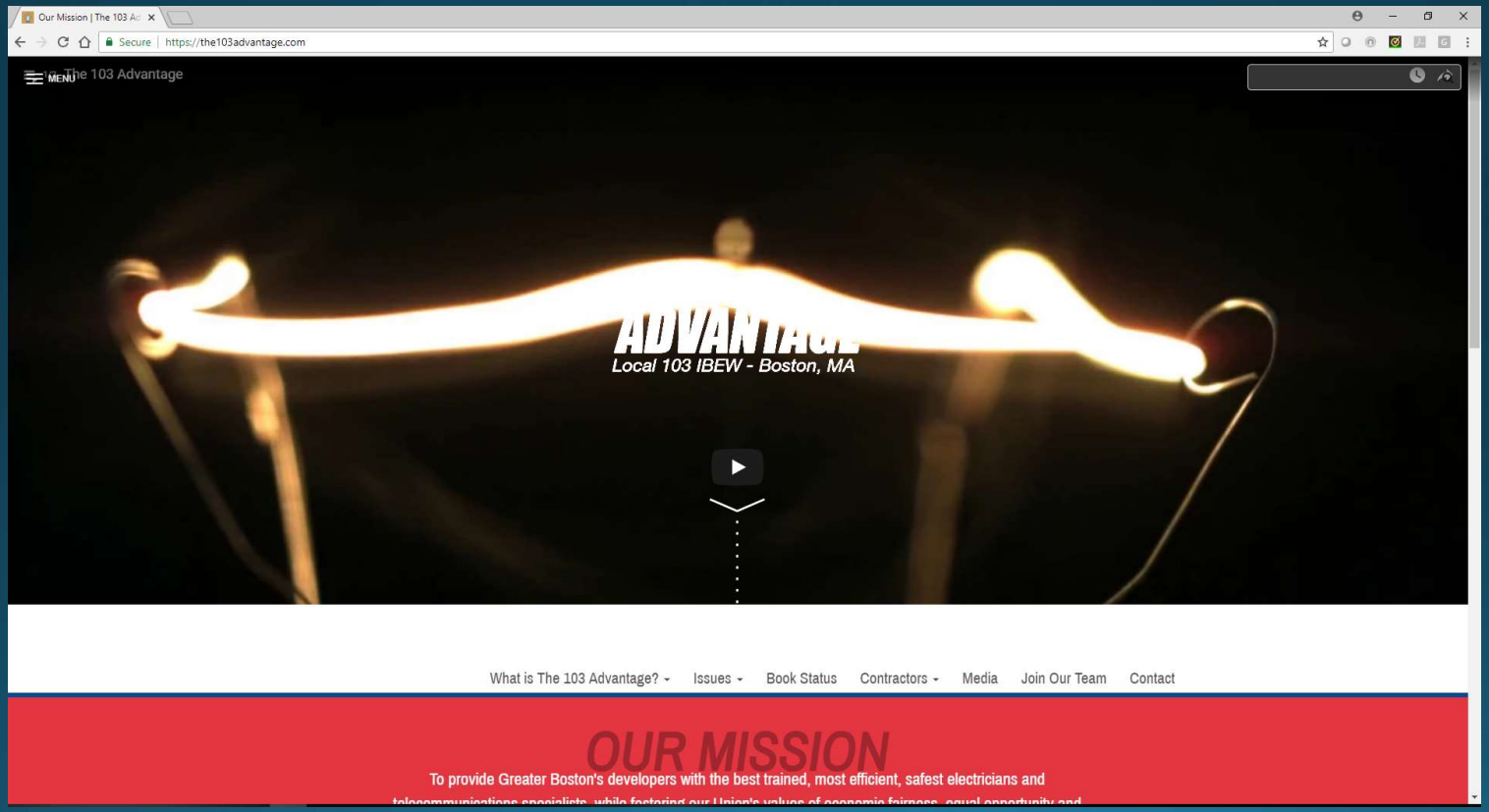
- Subject to Change !!!
- Surf before you call !!!!
- Classes / Shops
- Homework – If you missed a class *CHECK*
- Work hours
- Makeup and Vacations
- Snow Days

JATC on Social Media

@bostonjatc103

the103advantage.com



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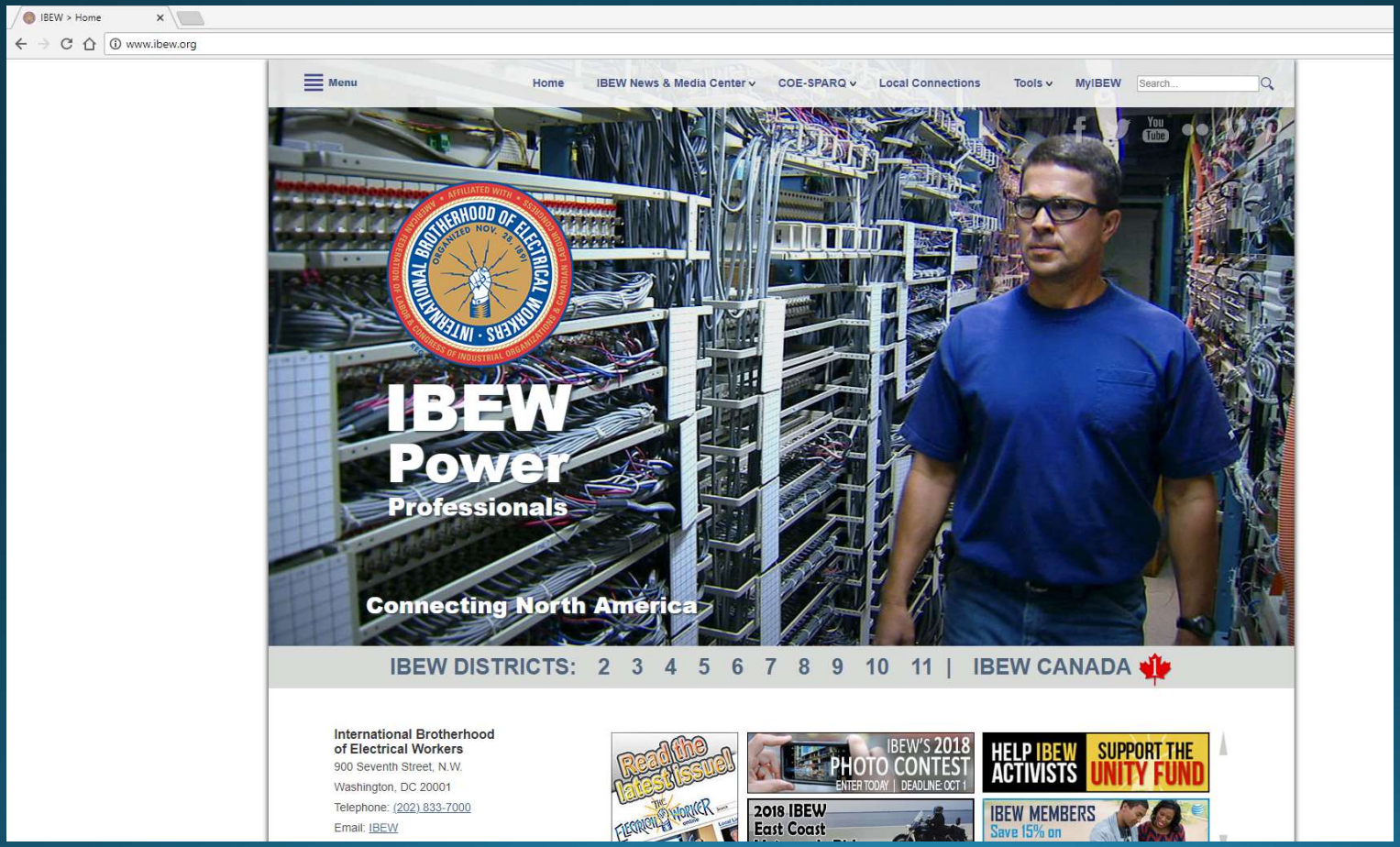
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Washington, DC 20001
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Email: IBEW
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2018 IBEW East Coast
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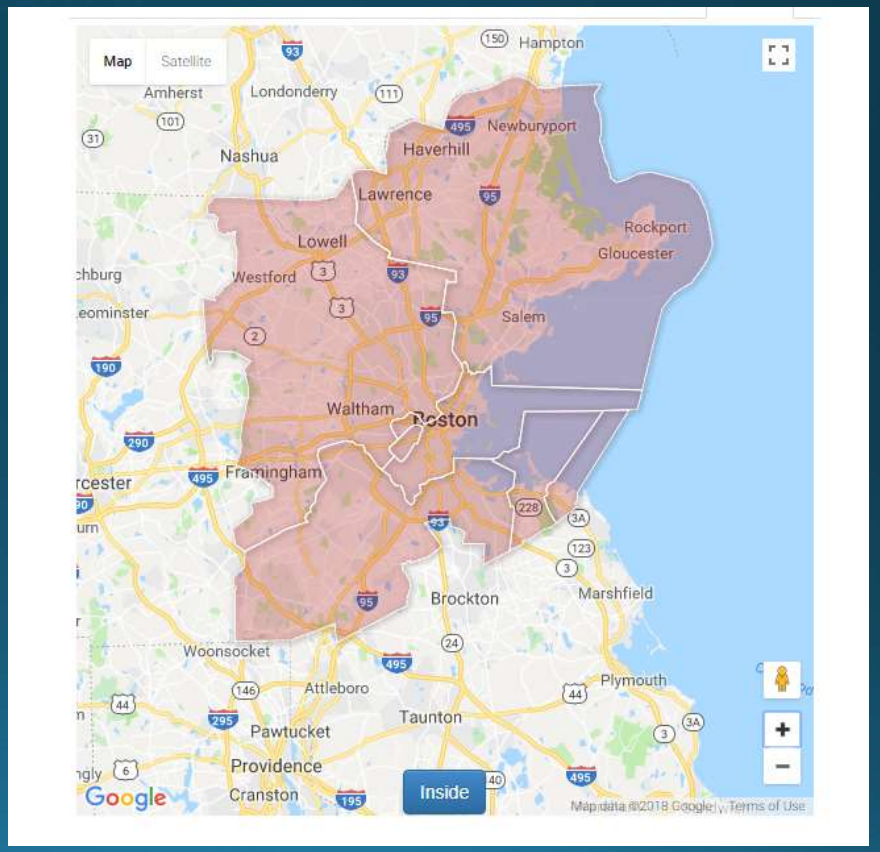
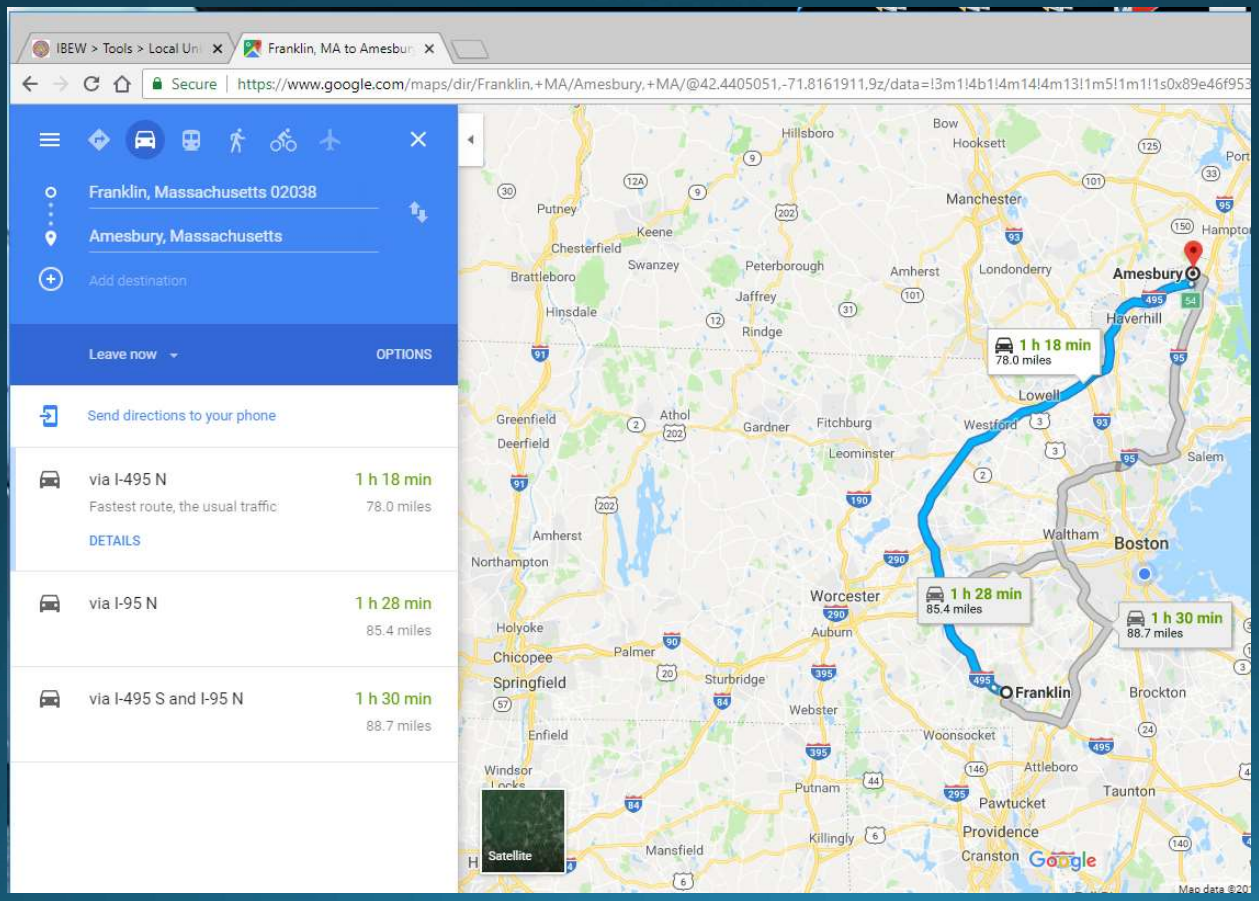
IBEW.org - 103 map

- Tools
  - Local Union Directory
    - Search by Local
    - Type 103
    - Select and Click Go
      - Maps



Franklin to Amesbury @ 2:06 PM



Who wants to pay $40 per day to park?

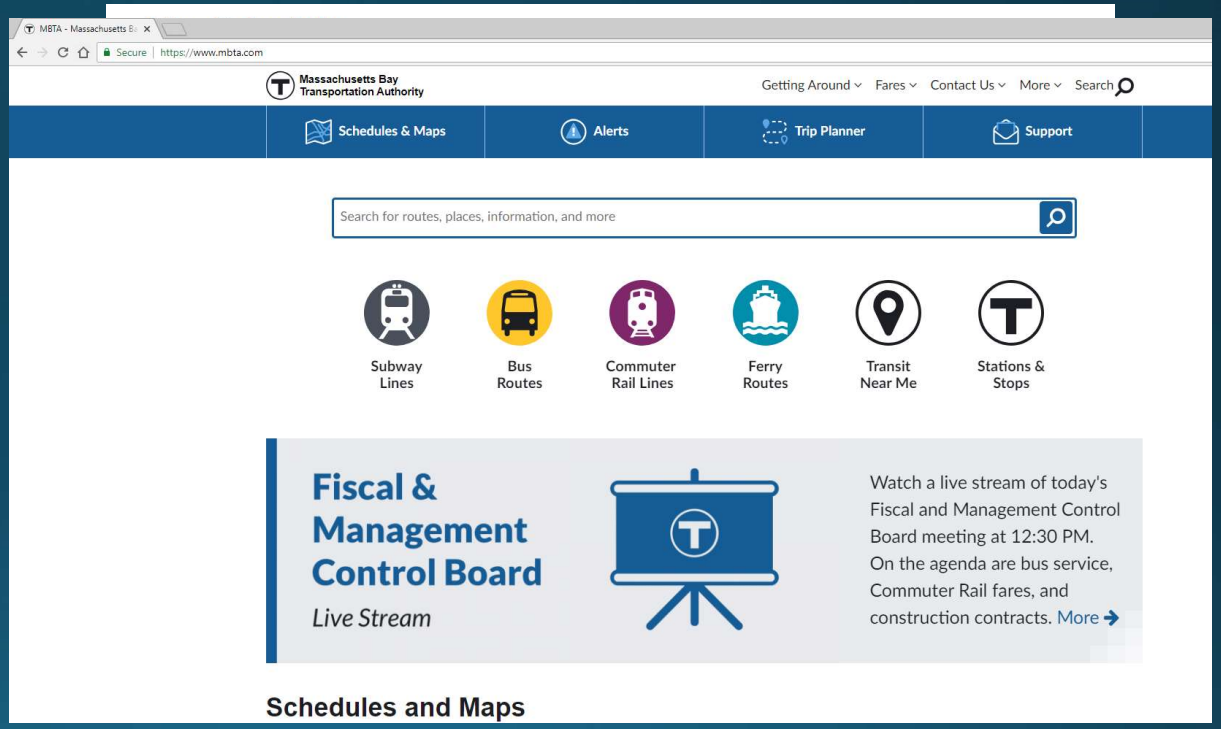
What is the #1 way to save on parking with out using an App?

Car Pool

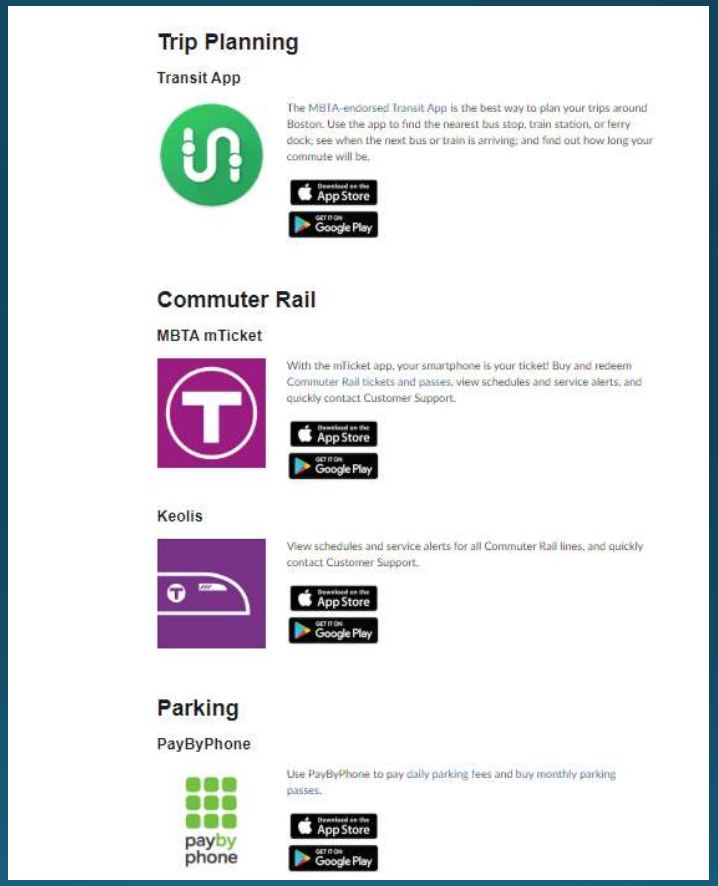
What is one way to save $$ without looking for a parking space

www.mbta.com

- Schedules and Maps
- Alerts
- Subway
- Bus
- Commuter Rail



MBTA – Endorsed Apps



Trip Planning

Transit App

The MBTA-endorsed Transit App is the best way to plan your trips around Boston. Use the app to find the nearest bus stop, train station, or ferry dock; see when the next bus or train is arriving; and find out how long your commute will be.

Download on the App Store
GET IT ON Google Play

Commuter Rail

MBTA mTicket

With the mTicket app, your smartphone is your ticket! Buy and redeem Commuter Rail tickets and passes, view schedules and service alerts, and quickly contact Customer Support.

Download on the App Store
GET IT ON Google Play

Keolis

View schedules and service alerts for all Commuter Rail lines, and quickly contact Customer Support.

Download on the App Store
GET IT ON Google Play

Parking

PayByPhone

Use PayByPhone to pay daily parking fees and buy monthly parking passes.

Download on the App Store
GET IT ON Google Play

https://www.mbta.com/mbta-endorsed-apps

Other Apps

- Traffic
  - **WAZE - https://www.waze.com**
  - Google Maps
- Parking
  - **Spothero** - https://spothero.com/boston-parking
  - **Parking Panda** - https://www.parkingpanda.com/boston-parking
  - https://boston.bestparking.com/
  - https://www.parkme.com/boston-parking
  - https://www.parkwhiz.com
- Ride share
  - **Uber**
  - **Lyft**
- Taxi
  - **Curb** - https://mobileapp.gocurb.com/boston-2/
- Bikes
  - **BlUEbikes** - https://www.bluebikes.com/

Have a Safe Day