



Cove Apple Club

April 13, 2023



Tonight's Topics

- Can you do it all on an iPad?
 - The world's first notebook computer
 - The world's first *color* notebook computer
- How good we've got it: Excel vs. Numbers - *hold!*

Remember!

- The presentation of tonight's meeting will soon be available to download from our Archives website, in both Keynote and PDF format
- Visit CoveAppleClubArchives.com

The world's first notebook computer





EPSON

HX-20



EXPANSION UNIT

PRINTER
OFF ON

PAPER
FEED



MICRO CASSETTE DRIVE

REC

PAUSE MENU BREAK PF1 PF2 PF3 PF4 PF5
MESSAGE ROW 1 STOP NEW QUIT

NUM HOME SCRN INS
CLR CLR DEL





The world's first notebook computer

Epson HX-20 — July, 1980 / US Introduction November, 1981

- Two 8-bit CMOS CPUs at 614Mhz; 16kb RAM, 4-line by 20-character monochrome LCD display (the world's largest), full-sized ASCII keyboard, on-board microcassette drive for data & program storage, on-board dot-matrix impact printer (the world's smallest)
- 4-hour battery life, 8" x 11", 4-lbs
- \$799 - equivalent to \$2,900 in 2023



Fast-forward 30 years...to 2010

In early 2010, small portable computers looked like this:



ASUS SeaShell



Toshiba NB-210



Dell Inspiron mini 10

and tablet computers looked like this:



Samsung QI UMPC
\$1,099 (2007)



Trimble Yuma Tablet



Archos 9 PC

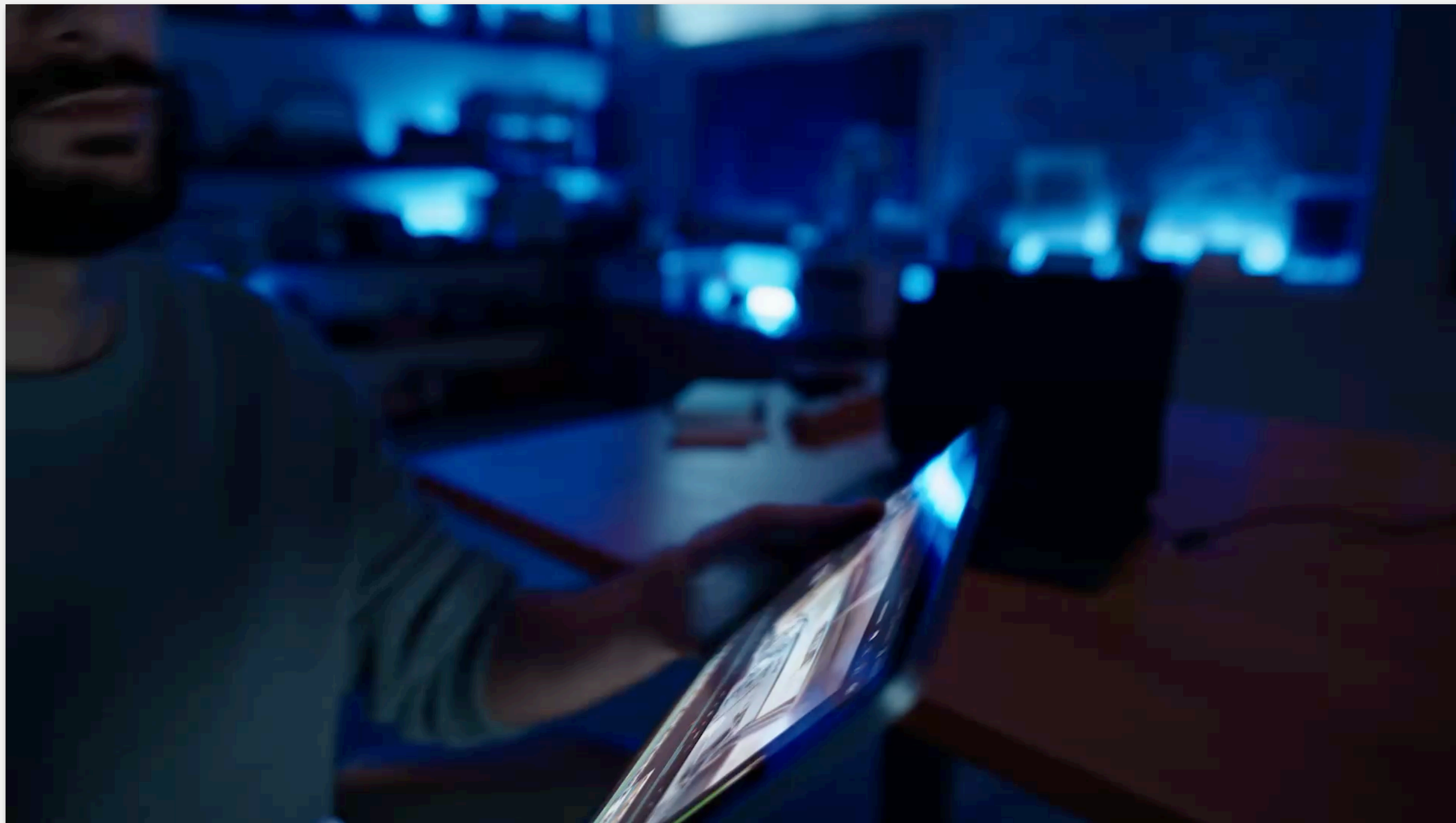
Small portable computers were established consumer products selling in the tens of millions, and people thought they were pretty cool, but were often frustrating with serious shortcomings and design flaws.

...and then this happened:



iPad

And now...



Can you do it
all on an iPad?



iPad: Origins

- iPad introduced on January 27, 2010; shipped on April 3
- Stunning performance *for a tablet*, an explosion of apps, immediately put to thousands of uses
- Resulted in the quick extinction of the “Netbook” laptop category & all prior non-Apple tablets, crushed the non-Apple laptop market

First-generation iPad

April, 2010

- 9.7” screen, A4 processor (same as iPhone 4), 10-hour battery life, 1.5-lbs.
- 1024 x 768 screen; 64Gb max storage, *no camera*
- **\$499** - truly a category-killing breakthrough price
 - Fun fact: Apple actually *designed the iPad first*, but delayed it when they realized they could turn it into a phone; iPhone then kept them busy for 4 more years!

In the 13 years since...

27 iPad variants & line extensions

- Ten generations of iPad
- Six generation of iPad mini
- Five generations of iPad Air
- Six generations of iPad Pro
- iPad is a \$30-billion/year business for Apple, and in 2022, returned to growth with a 30% YOY revenue increase

Fast-forward 13 years...to 2023

Current iPad Air (5th Generation)

April, 2023

- 10.9” Liquid Retina screen (2360 x 1640), 8-core Apple Silicon M1 processor, 16-core Neural Engine, 8-core GPU, 8Gb on-chip RAM, Wi-Fi 6, Bluetooth 5, digital compass, GPS/GNSS, 3-axis gyro, barometer, accelerometer, Touch ID, Siri, 5G cellular option, minimum of 64Gb storage
- 12Mp front camera with Center Stage, 5x digital zoom, 63Mp panorama, Smart HDR, Auto OIS, 4k video at 60fps, slo-mo & time-lapse, continuous AF in all modes, Retina True Tone flash
- *\$599 - equivalent to \$432 in 2010 dollars — LESS than the 2010 price of the original iPad!*

The mind-melting power of the 2022 iPad Air

Apple Silicon M1 & Neural Engine

- Apple M1 with 8 CPU cores runs at 11-Tflops — *11 Trillion* operations/second
- Neural Engine in M1 adds another 17-Tflops of ML, MV and AI processing power
- 8-core GPU adds another 24-Tflops of graphics/video processing power
- All in a package that draws less than 40W at peak load, and 7W at normal load



How an iPad and a laptop differ

There's just a sliver of daylight between them

iPad Air (2022 M1 chip)

- No hardware keyboard or mouse
- No headphone jack
- 10.7-inch Liquid Retina display at 2360 x 1640
- 1x USB-C port
- Front & rear 12MP cameras
- CenterStage on front camera
- Wi-Fi 6, Bluetooth 5
- Up to 256Gb storage
- 10-hour battery life
- 1.08-lbs.

How an iPad and a laptop differ

There's just a sliver of daylight between them

MacBook Air (2023 M2 chip)

- Backlit Apple Magic Keyboard with Touch ID
- Apple ForceTouch trackpad
- 13.6-inch Liquid Retina display at 2560 x 1640
- 2x USB-C ports
- 3.5mm audio jack
- Wi-Fi 6, Bluetooth 5
- 1024 x 768 FaceTime front camera
- Up to 18-hour battery life
- Up to 2Tb storage
- 2.7-lbs

Typical iPad accessories

...pretty much make it into a laptop

- Logitech Folio Touch
 - Touchpad
 - Backlit keyboard
 - Holds & charges Apple Pencil
 - Auto lock/wake
 - Powered by iPad
- \$159



Typical iPad accessories

...pretty much make it into a laptop

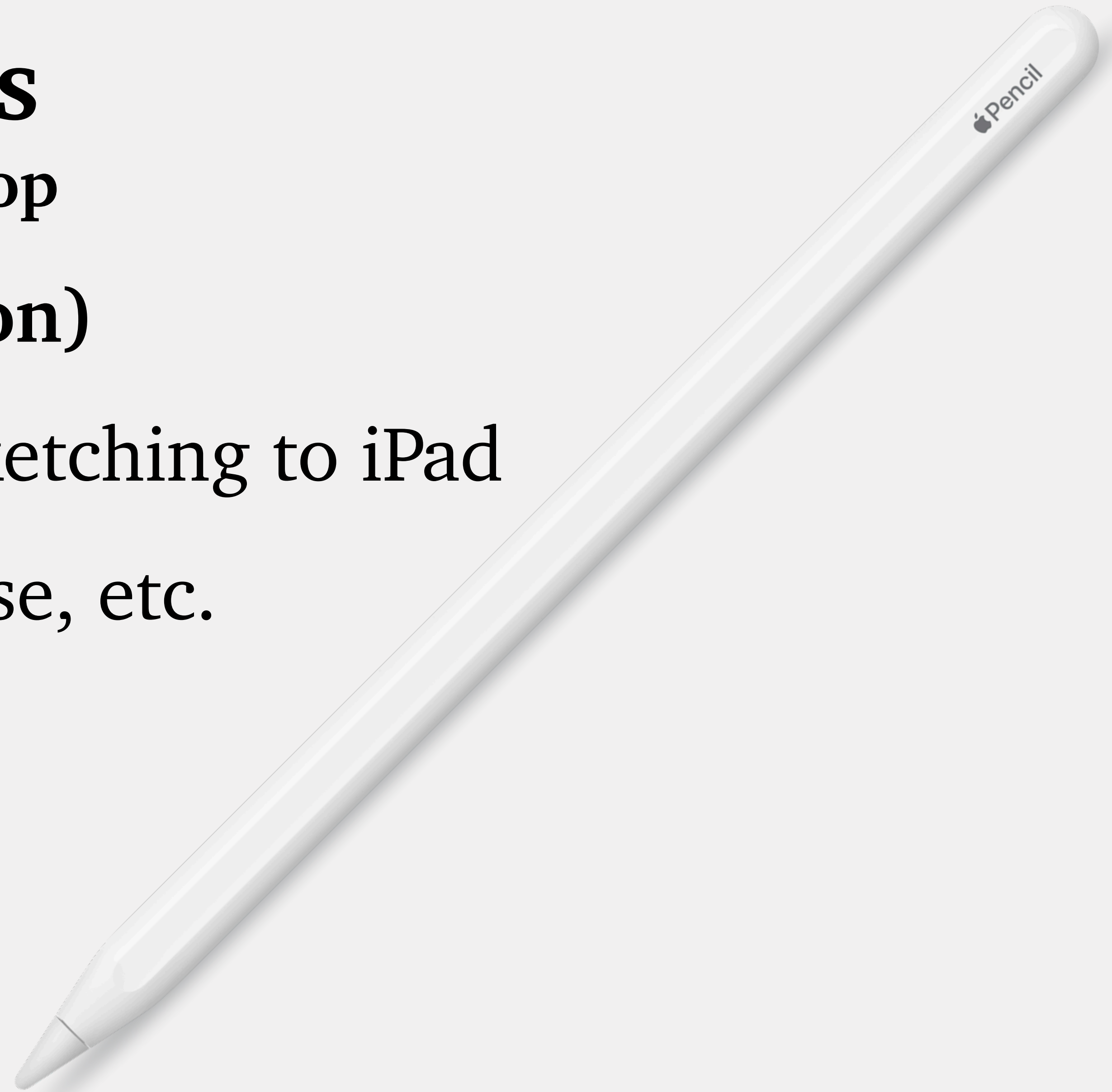
- Apple Magic Keyboard Folio
 - Touchpad
 - Non-backlit keyboard
 - Auto lock/wake
 - Powered by iPad
- \$249



Typical iPad accessories

...pretty much make it into a laptop

- **Apple Pencil (2nd Generation)**
 - Adds drawing / writing / sketching to iPad
 - Hover, tap, select, drag, erase, etc.
 - Charges from iPad
- \$129



What can you do with an iPad?

...or maybe easier said, what *can't you do* with an iPad?

- Run all office productivity apps
 - Apple Pages, Numbers, Keynote
 - Microsoft 365 - Excel, Word, PowerPoint, Teams, One Drive, Skype, Outlook
- Run thousands of creative apps
 - iMovie, Photos, Photoshop, ProCreate, Canva, thousands more
 - Create & publish audio, podcasts, videos, social media content, etc.

What can you do with an iPad?

...or maybe easier said, what *can't you do* with an iPad?

- Play tens of thousands of games
- Stream videos from Apple, Netflix, Amazon Prime, HBO, all streaming channels, YouTube, etc.
- Communicate
 - FaceTime, Messenger, Skype, Zoom, text & calling via iPhone

What can you connect to with an iPad?

...pretty much everything you can connect to a laptop, & some things you can't!

- Larger external displays, HDTVs
- Desktop mice & keyboards via USB or Bluetooth
- Thumb drives, external HDs
- Ethernet networks, routers, switches
- SD cards from cameras
- Bluetooth speakers
- Cash drawers, credit card terminals, POS printers
- Printers & scanners
- Audio & gaming headsets
- Gaming controllers
- Apple Pencil, digitizers

Mike's acid test: running a juggling festival

Or, herding 800 ADHD-afflicted kittens for a week

- For 19 years, I've been the operations director for a week-long international juggling festival
- Hundreds of tasks involving web, document creation, email, admin, printing, Square cash register
- Connect to an office copier for scanning & printing
- Have used a Mac laptop from 2004-2021

The show programs

- Final edits, proof and print 500 duplexed copies at 2pm every day for that night's competition
- Connect to an office copier via USB cable from laptop
- 2-page PDF with page 2 flipped head-to-foot



Make plans to join us next year!
The 71st Annual International Jugglers'
Association Festival will be held
July 16-22, 2018, in
Springfield, Massachusetts, USA
See you there!



International Jugglers' Association
70th Annual Juggling Festival
July 10-16, 2017
juggle.org

The Paramount Theatre
Cedar Rapids, Iowa



Cascade of Stars
Saturday, July 15, 2017 — 8pm

Because of the way
copiers work, page 2 has
to be flipped head-to-foot
to produce a correct
folded booklet

Directed by Peter Davison
Stage Manager: Slamin' Andy Peterson
Show Program: Our Guy Floyd
Festival Operations & Registrar: Mike Sullivan
Arts Iowa Ticket Manager: Jason Anderson
Event Manager: Jason Lester
Theatre Manager: Jason Anderson
Paramount Theatre
Please note that video recording of any kind is not permitted.
No flash photography. Please silence all devices.
Thank you for your cooperation.

Cascade of Stars
Performers Listed Alphabetically
Erik Abberg
Kevin Axtell
Jonah Botvinnick-Greenhouse
Gena Shvartsman Cristiani!
Bob and Trish Evans
Jay Gilligan
Andy Head
Alexis Levillon & Victor De Bovuere
Patrick McGuire
Paul Ponce
Thom Wall
Brad Weston
There will be a brief intermission.

Show programs: the Achilles heel for Mike

Just because I am stubborn and fussy about things like this...

Dry run:

- Edit and send show programs to PDF
 - No problem, using Pages as usual
- Open and view PDFs for proofing
 - No problem, using iOS built-in PDF viewer & iCloud Drive
- Combine PDFs and flip page 2 for printing
 - No “free” way to do it that I could find 😞 (I refuse to install Adobe-anything on any of my devices)

So, we brought our Mac mini and portable monitor

And it was sensational

- Same setup we're use for some of our meetings
- Easily transportable
- UHD display, full-sized keyboard and mouse
- 3.3-lbs total weight — just 2.2-lbs more than iPad Air
- *“This is the way.”*

So, *can* you do
it all on an iPad?



Beyond the Tablet: Seven Years of iPad as My Main Computer

Federico Viticci -
[MacStories.com](https://www.macstories.com)



Can you do it all on an iPad?

For probably 90% of all people, and 99% of our members...YES!

- Incredible power in a tiny package that goes everywhere
- Cheaper (for most) and longer life than laptops
- Mind-warping speed, all-day battery life
- Flex and connect with USB-C & Bluetooth when needed
- Tens of thousands of apps
- A size and price point for all: from \$329 to \$2,399

You can (probably)
do it all on an iPad!



The world's first *color* notebook computer

Epson NB-SL 20C

COMDEX 1992 - World's first color LCD notebook computer

- Intel 80386-SL CPU, 20Mhz, 4Mb RAM, up to two onboard 3.5" diskette drives, slot for onboard 80Mb HDD, parallel and serial ports, full-sized ASCII keyboard
- 640 x 320 color LCD display using advanced Epson active-matrix LCD and world's-first paper white backlit display
- 7.2-lbs.
- \$2,999 in 1992 - equivalent to **\$6,500** in 2023!

Upcoming meeting dates

All meetings begin at 7pm ET on Wednesday nights

- Summer hiatus!
 - See you in October!

Hello from beautiful

