



# Ford's Colony Computer & Technology Club

Browsers 2020

July 20, 2020

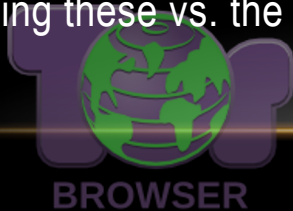




## ANNOUNCEMENTS



- The Computer & Technology Club is taking a vacation. We will NOT meet in August. Our next General Membership meeting will be September 21 at 7:00PM on Zoom. We'll send out a blast email in early September to remind you as well as announce the topic that will be presented. This information will be in the September edition of Talk of the Colony.
- There will be no Special Interest Group's meetings in July and August.
- Tonight's Featured Presentation Meeting - "Alternative Internet Browsers & Browser Best Practices" – Rick Chase
  - At this session we will explore some popular alternative internet browsers – e.g. Brave, Chrome, Firefox, Opera, MS Edge etc. We'll compare their feature sets and why you should consider using these vs. the quasi-default browsers (MS Edge, Internet Explorer and Safari).



# HISTORY OF THE WEB BROWSER

- 1990 – The WorldWideWeb (not to be confused with the World Wide Web) was the first browser ever created by W3C Director Tim Berners-Lee, then renamed Nexus to differentiate from the actual World Wide Web. Unlike today, this was the only browser and the only way to access the web.
- 1992 – Lynx was a text-based browser that couldn't display any graphic content.
- 1993 – Mosaic was the first browser to allow images embedded in text making it "the world's first most popular browser".
- 1994 – A noticeable improvement to Mosaic came Netscape Navigator.
- 1995 – Internet Explorer made its debut as Microsoft's first web browser.
- 1996 – Opera started as a research project in 1994 that finally went public two years later.
- 2003 – Apple's Safari browser was released specifically for Macintosh computers instead of Navigator.
- 2004 – Mozilla launched Firefox as Netscape Navigator faded out.
- 2007 – Mobile Safari was introduced as Apple's mobile web browser and continues to dominate the iOS market.
- 2008 – Google Chrome appeared to soon take over the browser market.
- 2011 – Opera Mini was released to focus on the fast-growing mobile browser market.
- 2015 – Microsoft Edge was born to combat Google.

# BROWSER BASICS

The Wall Street Journal - Breakin x +

https://www.wsj.com

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## THE WALL STREET JOURNAL.

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### Jack Ma's Ant Group Plans Massive IPO, Bypassing the West

Jack Ma's Chinese tech and financial-services giant, which owns mobile-payments network Alipay, is planning IPOs in Hong Kong and Shanghai, bypassing New York. The combined offering could be among the largest in history.

### Chevron Agrees to \$5 Billion Takeover of Noble Energy

Chevron agreed to buy Noble Energy, in what would be the largest oil-patch tie-up since the coronavirus pandemic delivered a shock to the industry. 36 minutes ago

### U.K. Suspends Extradition Treaty With Hong Kong

The British government said it would suspend its extradition treaty with Hong Kong in

### Covid Rewrites the Disney Playbook

The company's strategy of connecting stories across movies, toys, theme parks and TV has made Disney especially vulnerable to the disruptions of the pandemic. Executives are scrambling to address what is looking to be a prolonged crisis, forcing a realignment of priorities. 10

### Eli Lilly Scientists Work to Produce Virus Treatments

### How Europe Slowed Its Coronavirus Cases From a Torrent to a Trickle

US EUROPE ASIA FX RATES FUTURES

1D 5D 3M 6M 1Y

DJIA	26687.87	15.92	0.06%
S&P 500	3243.70	18.97	0.59%
Nasdaq	10701.67	198.48	1.89%
Russell 2000	1468.00	-5.32	-0.36%
DJ Total Mkt	33054.05	194.36	0.59%

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### OPINION

**Portland's Pottery Barn Rule**  
By William McGurn | Main Street

**The Left's Rights Distortions**  
By The Editorial Board | Review & Outlook

2:17 PM



The Wall Street Journal - Breakin

https://www.wsj.com

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THE WALL STREET JOURNAL.

Richard Chase

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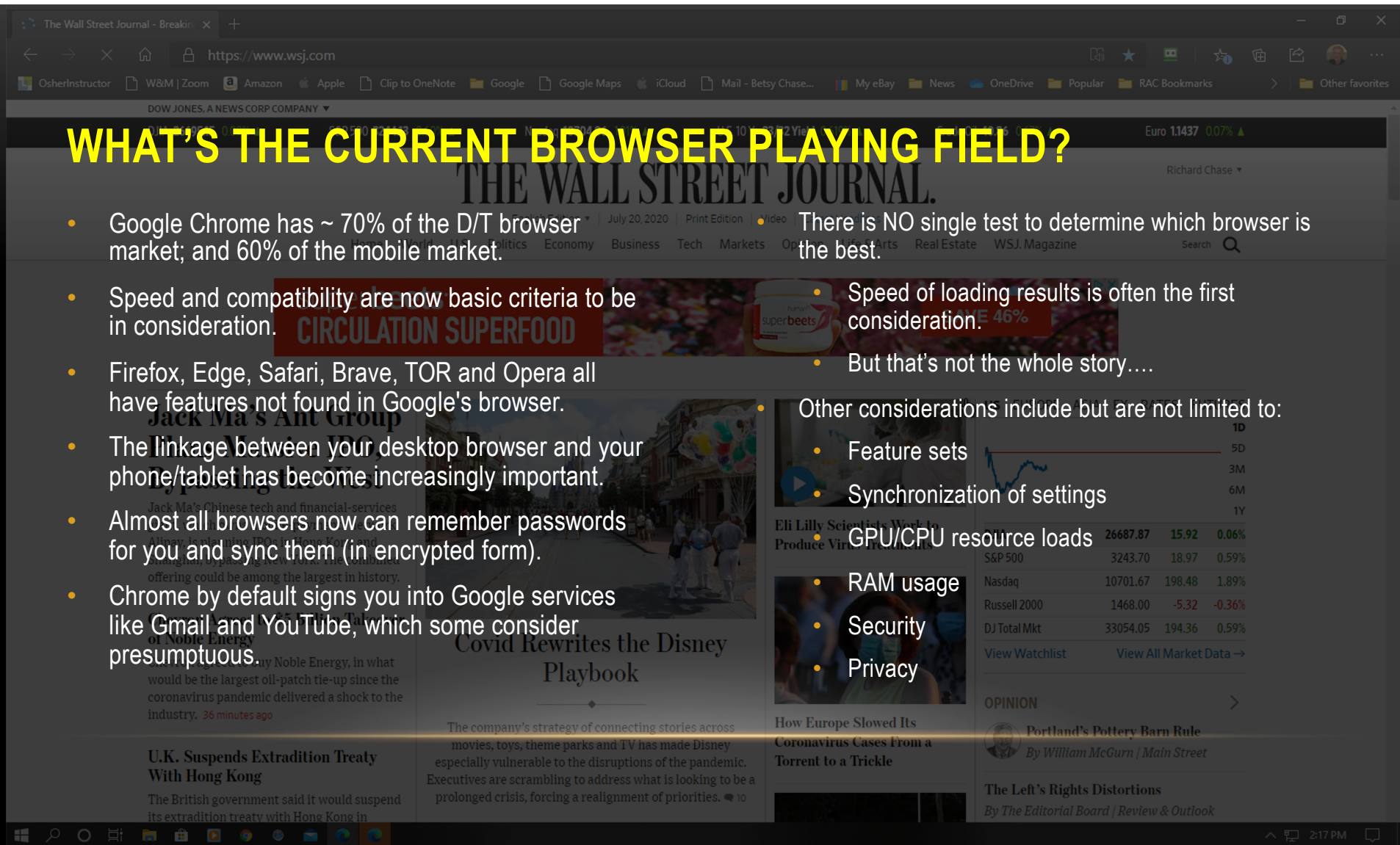
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By The Editorial Board / Review & Outlook

Windows taskbar icons

2:17 PM

# WHAT'S THE CURRENT BROWSER PLAYING FIELD?

- Google Chrome has ~ 70% of the D/T browser market; and 60% of the mobile market.
- Speed and compatibility are now basic criteria to be in consideration.
- Firefox, Edge, Safari, Brave, TOR and Opera all have features not found in Google's browser.
- The linkage between your desktop browser and your phone/tablet has become increasingly important.
- Almost all browsers now can remember passwords for you and sync them (in encrypted form).
- Chrome by default signs you into Google services like Gmail and YouTube, which some consider presumptuous.
- There is NO single test to determine which browser is the best.
- Speed of loading results is often the first consideration.
- But that's not the whole story....
- Other considerations include but are not limited to:
  - Feature sets
  - Synchronization of settings
  - GPU/CPU resource loads
  - RAM usage
  - Security
  - Privacy



# BROWSER SELECTION CRITERIA

Increasing Importance

- Privacy & Security
- Customization
- Convenience features
- Tab and start-page tools
- Mobile integration

- Speed
- Standards support

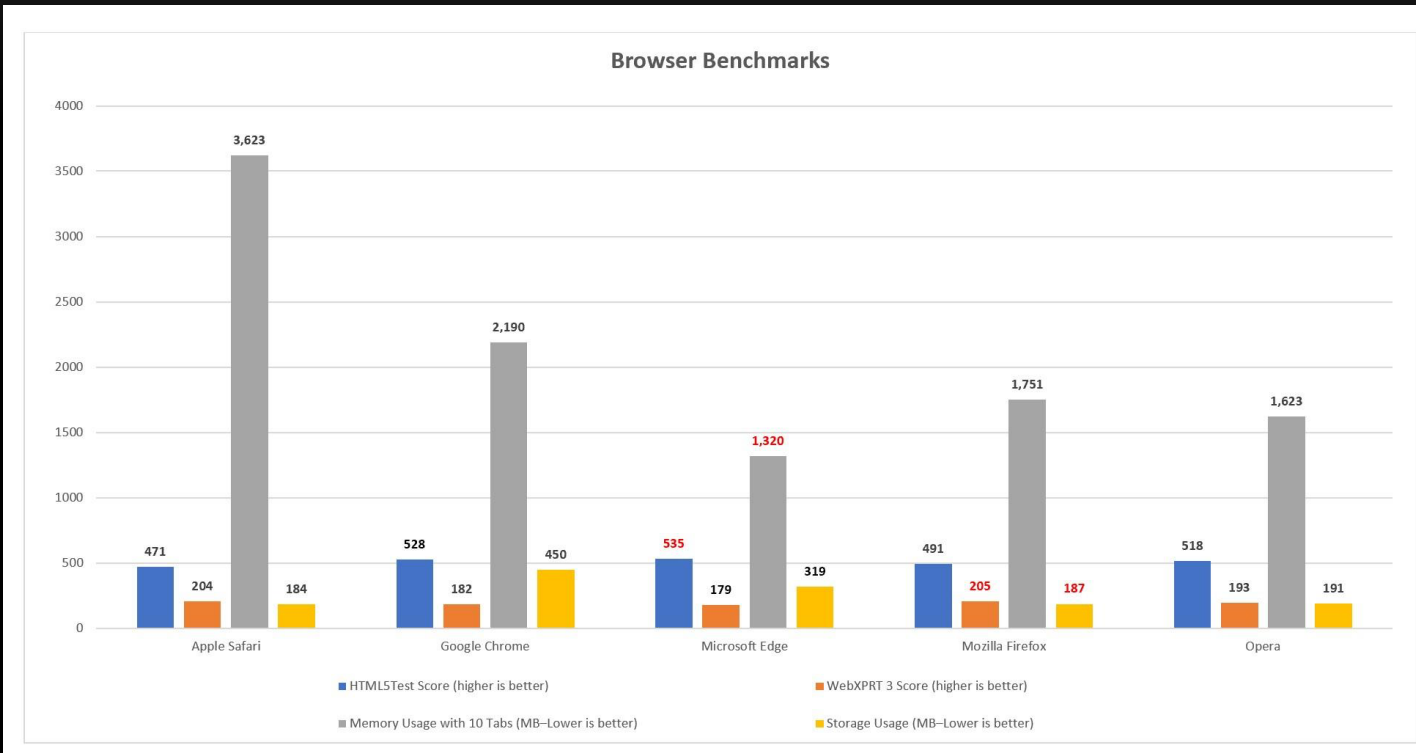
Basic Requirements

# FEATURE SETS YOU SHOULD CONSIDER

- Customization of GUI (Graphical User Interface)
- Mobile integration
- Reader views
- Synchronization of bookmarks and browsing history across devices
- Bookmark tools
- Importing/Exporting of Bookmarks
- Remembering web credentials (username & passwords) for you and sync them (in encrypted form)
- AD blockers



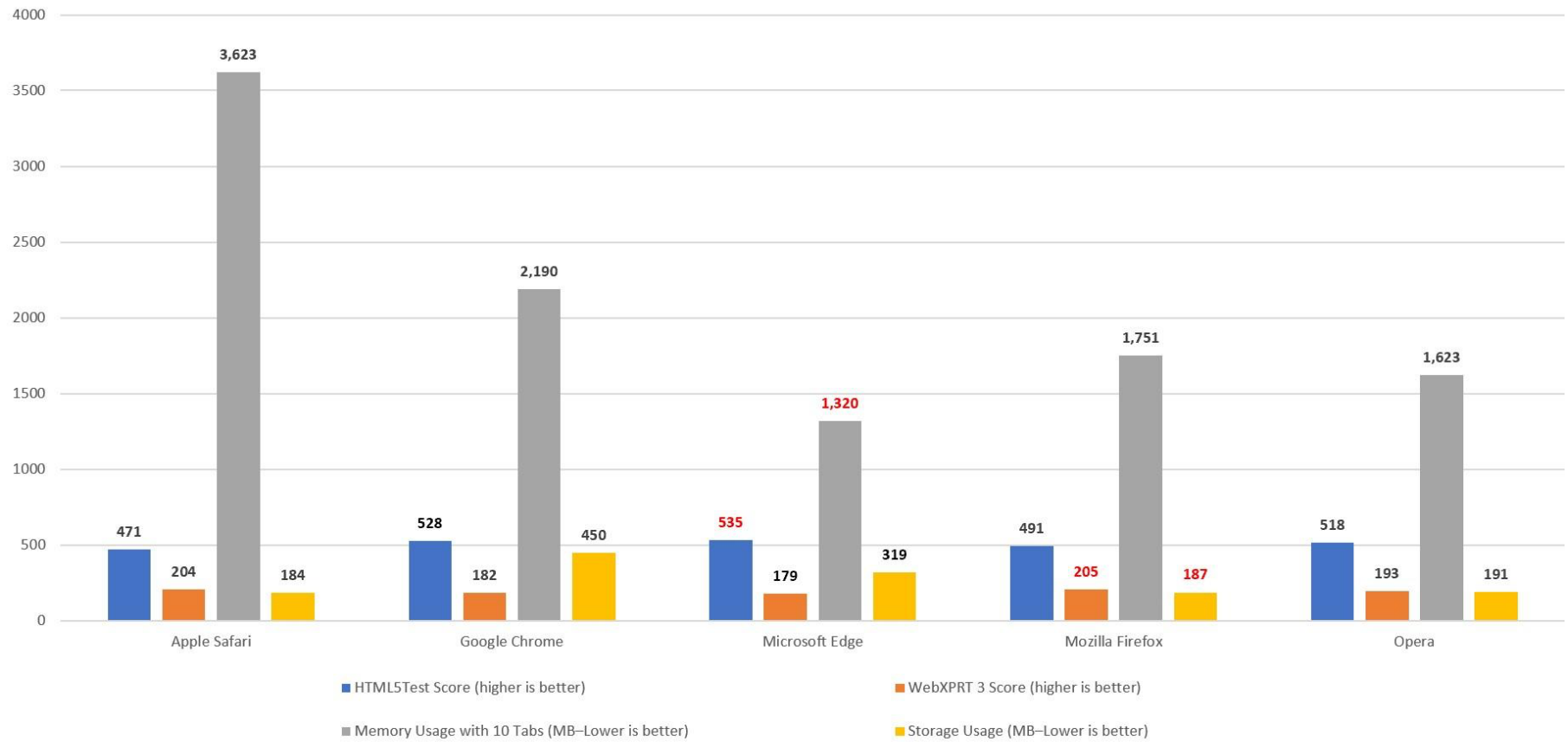
# CHROME, EDGE, FIREFOX, OPERA, OR SAFARI: WHICH BROWSER IS BEST?



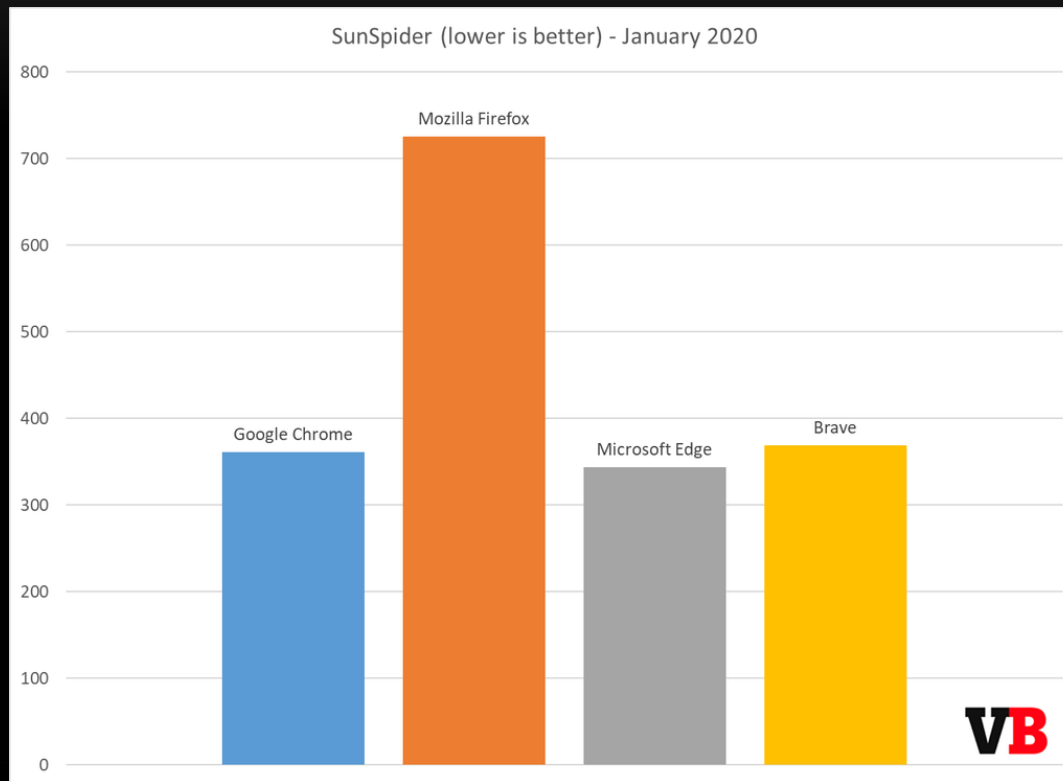
<https://www.pcmag.com/news/chrome-edge-firefox-opera-or-safari-which-browser-is-best>



## Browser Benchmarks



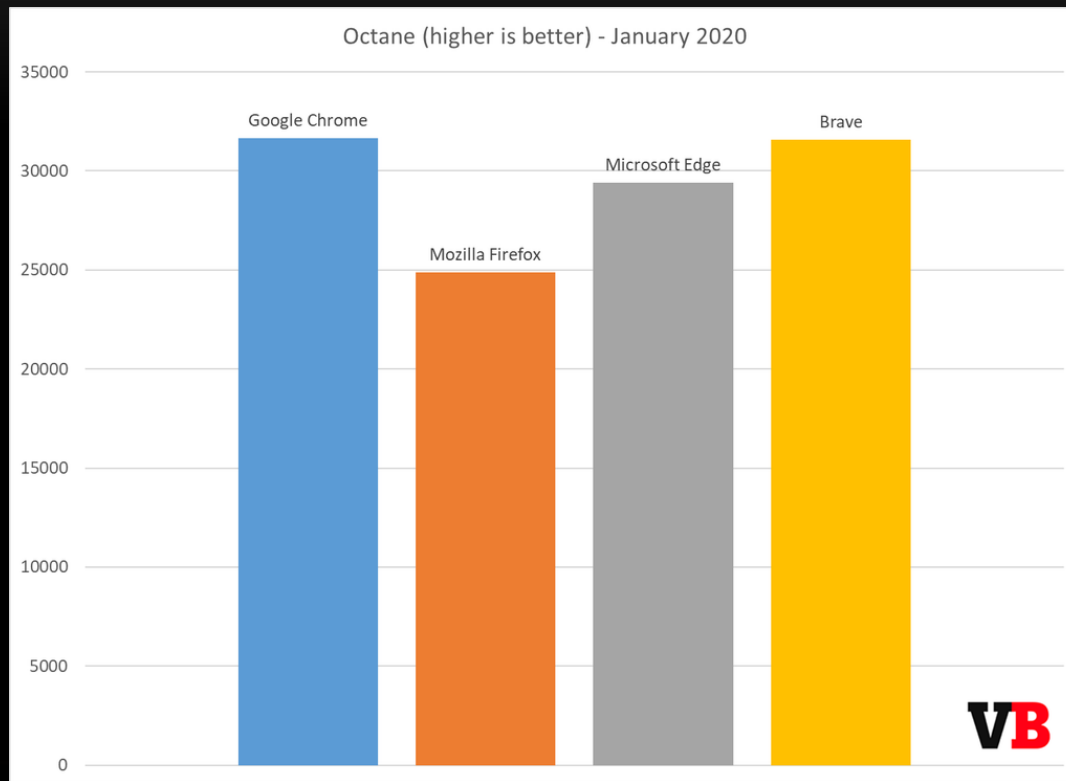
# BENCHMARKING - SUNSPIDER



- SunSpider is a JavaScript benchmark, probably one of the oldest ones around.
  - Chrome started off OK.
  - Firefox did a lot worse.
  - Edge managed to slip right underneath Chrome.
  - Brave did a bit worse than the other Chromium browsers, but better than Firefox.
- This is an old test, so it shouldn't be taken on its own.

<https://venturebeat.com/2020/01/15/browser-benchmark-battle-january-2020-chrome-firefox-edge-brave/view-all/>

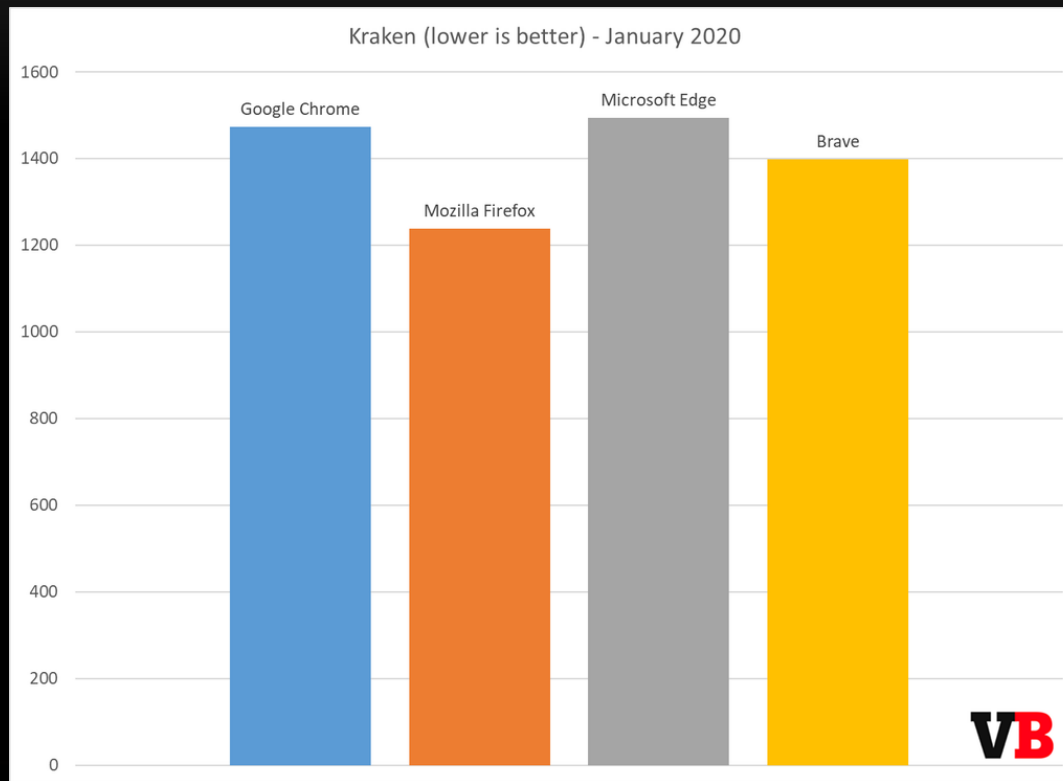
# BENCHMARKING - OCTANE



<https://venturebeat.com/2020/01/15/browser-benchmark-battle-january-2020-chrome-firefox-edge-brave/view-all/>

- Octane is a JavaScript benchmark developed by Google.
  - Chrome set the bar high.
  - Firefox couldn't match it.
  - Edge did better than Firefox but couldn't beat Chrome.
  - Brave did only slightly worse than Chrome.
- Given that Octane was developed by Google, maybe it's not surprising that Chrome won this test. But it's also the only test Chrome won this time around.

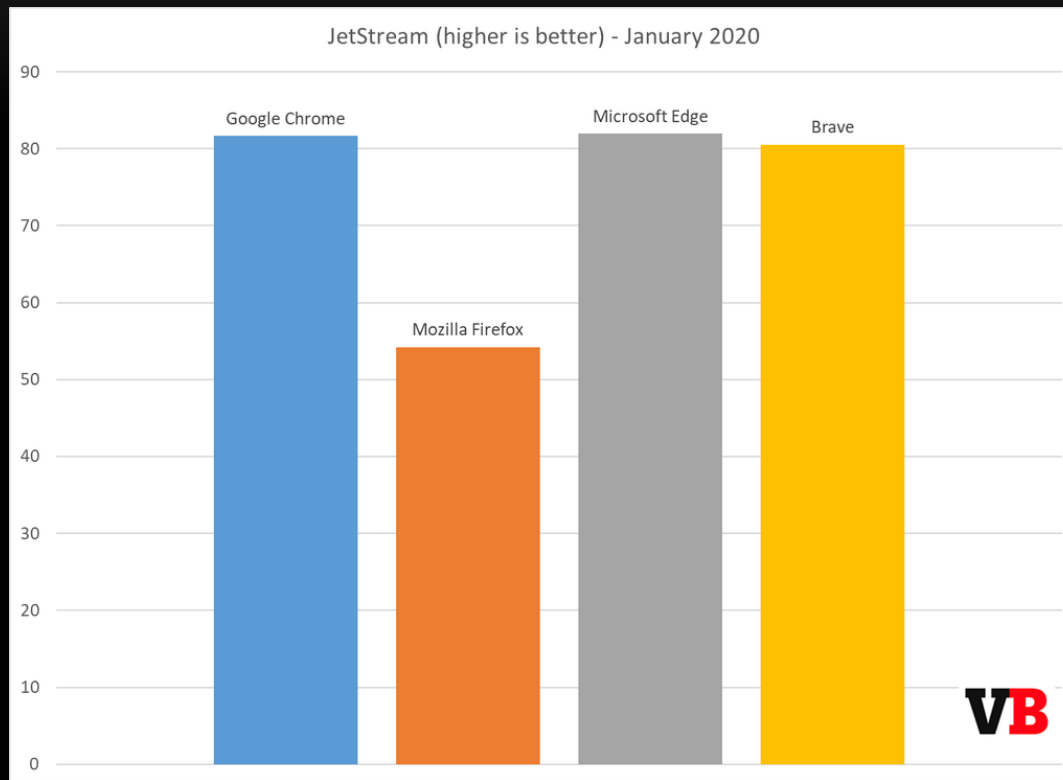
# BENCHMARKING - KRAKEN



<https://venturebeat.com/2020/01/15/browser-benchmark-battle-january-2020-chrome-firefox-edge-brave/view-all/>

- Kraken is a JavaScript benchmark developed by Mozilla.
  - Chrome was pretty slow.
  - Firefox was much faster.
  - Edge was slower than Chrome and Firefox.
  - Brave came in second place.
- Kraken is Mozilla's benchmark, and Firefox won this test.

# BENCHMARKING - JETSTREAM

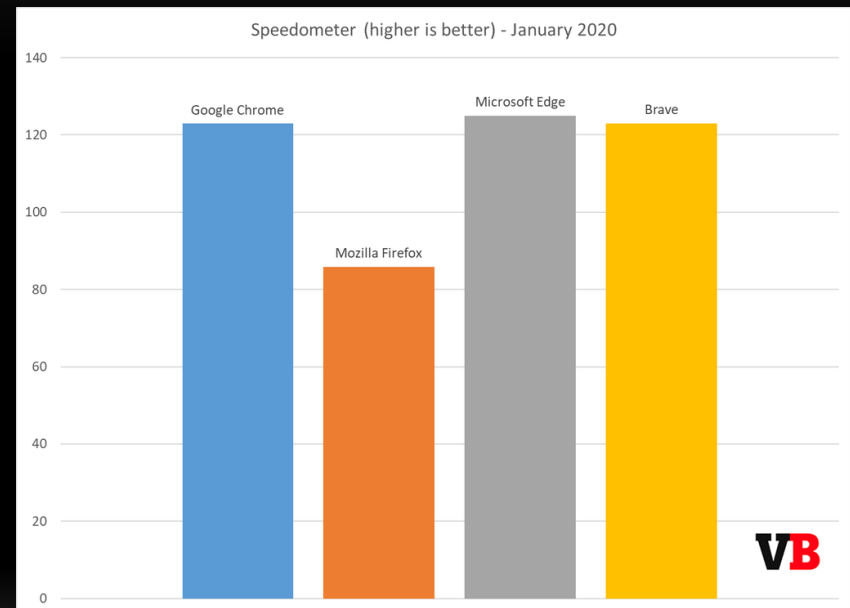
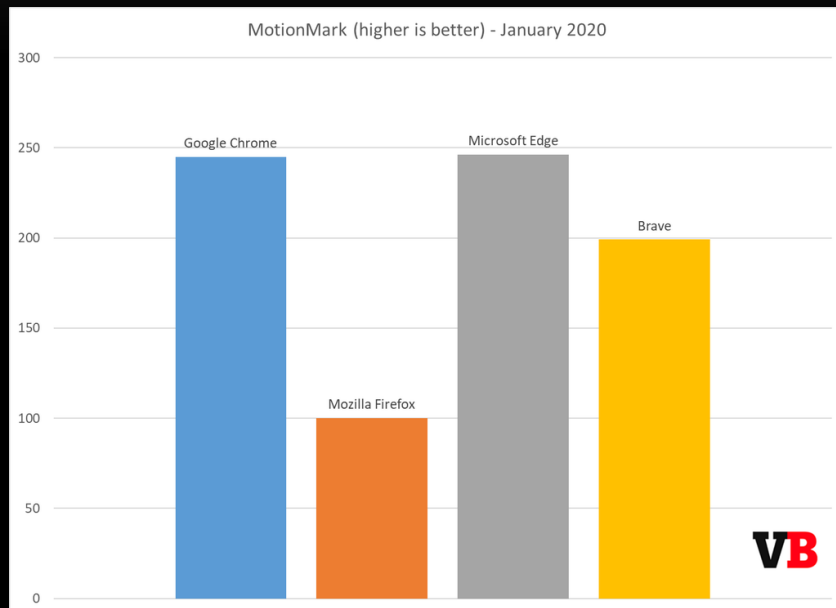


- JetStream is a JavaScript benchmark developed by Apple.
  - Chrome did OK.
  - Firefox did worse.
  - Edge managed to edge out Chrome.
  - Brave took third.
- Looks like Microsoft still knows Apple's benchmark the best, even with Chromium powering it. That's right: Edge has consistently won this one over the years.

<https://venturebeat.com/2020/01/15/browser-benchmark-battle-january-2020-chrome-firefox-edge-brave/view-all/>

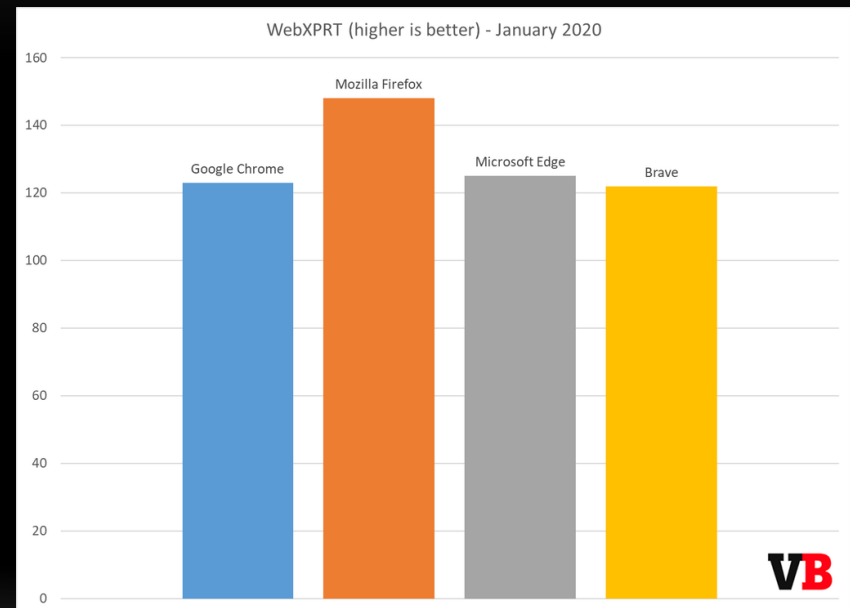
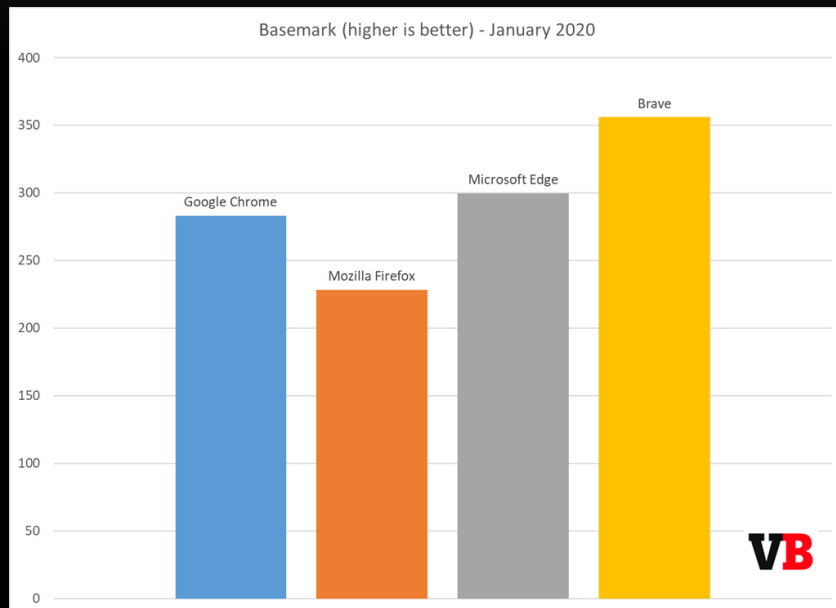


# BENCHMARKING – MOTIONMARK & SPEEDOMETER



<https://venturebeat.com/2020/01/15/browser-benchmark-battle-january-2020-chrome-firefox-edge-brave/view-all/>

# BENCHMARKING – BASEMARK & WEBXPRT



<https://venturebeat.com/2020/01/15/browser-benchmark-battle-january-2020-chrome-firefox-edge-brave/view-all/>

## BROWSER BENCHMARK BATTLE JANUARY 2020: CHROME VS. FIREFOX VS. EDGE VS. BRAVE

Test	Chrome	Firefox	EDGE	Brave
SunSpider	2	4	1	3
Octane	1	4	3	2
Kraken	3	1	4	2
JetStream	2	4	1	3
MotionMark	2	4	1	3
Speedometer	2	4	1	3
BaseMark	3	4	2	1
WebXPRT	3	1	2	4
	<b>18</b>	<b>26</b>	<b>15</b>	<b>21</b>

<https://venturebeat.com/2020/01/15/browser-benchmark-battle-january-2020-chrome-firefox-edge-brave/view-all/>

# A SIMPLE WAY TO VIEW BROWSER(S) IMPACT ON YOUR PC'S PERFORMANCE

## CPU Loading

1. Launch Task Manager on your PC
2. Windows Start, enter Task Manager, left click to Run
3. Sort the current tasks to show CPU usage in descending order
4. Launch your browser and watch the results

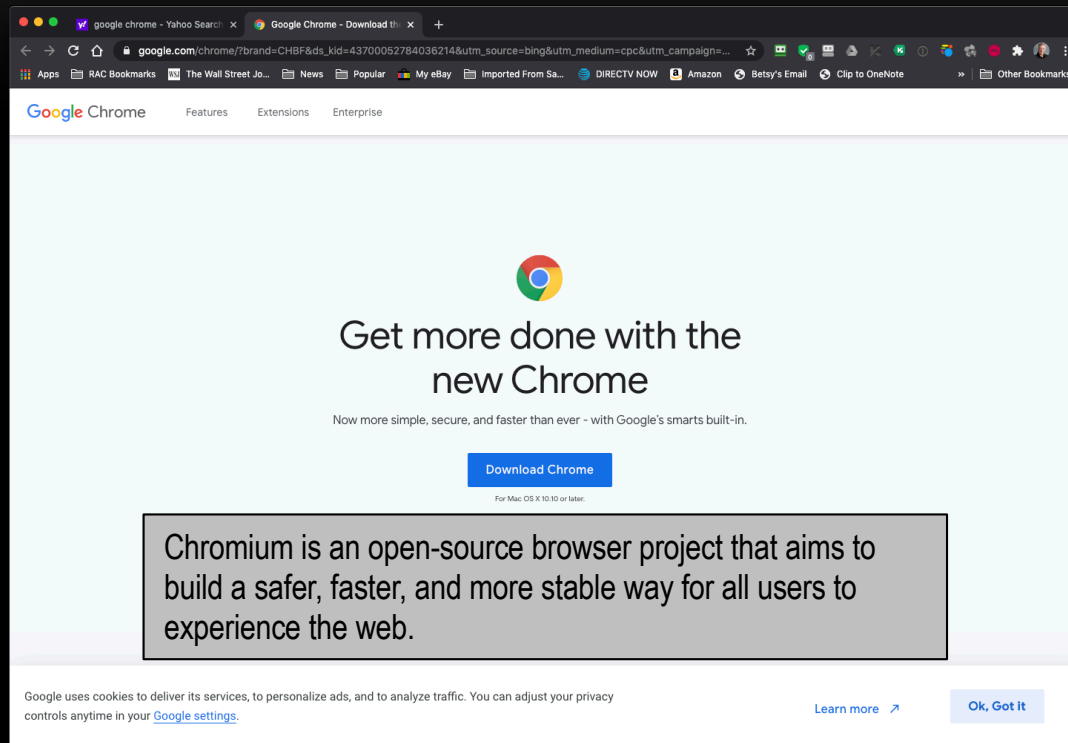
- <Insert Task Manager screenshot>

## RAM Usage

1. Now re-sort Task Manager to show RAM usage
2. Close your browser
3. Launch your browser and watch the results

Higher CPU loading and/or RAM usage can adversely impact response and performance of other concurrent applications

# CHROMIUM BASED BROWSERS



- *Chromium*
- Google Chrome
- Microsoft EDGE
- Opera
- Vivaldi
- Brave
- *Blisk*
- *Colibri*
- *Epic*
- *Iron*



## BEST BROWSERS FOR SECURITY & PRIVACY – EXPRESS VPN

	MS Edge	Opera	Safari
Pros	<ul style="list-style-type: none"><li>• Chromium based</li><li>• Updated weekly</li><li>• Feature set</li></ul>	<ul style="list-style-type: none"><li>• Chromium based</li><li>• Built-in AD blocker</li><li>• EasyPrivacy Tracking Protection List</li><li>• Free built-in VPN</li></ul>	<ul style="list-style-type: none"><li>• Runs suspicious web pages in a sandbox</li><li>• Intelligent Tracking Prevention</li><li>• Useful extensions</li></ul>
Cons	<ul style="list-style-type: none"><li>• Sends persistent identifiers that can be read by back end servers; can be turned off by user</li></ul>	<ul style="list-style-type: none"><li>• Opera's default window will cache your data; private window will not</li><li>• Owned now by a PRC company</li></ul>	<ul style="list-style-type: none"><li>• Only available on Apple products</li><li>• Infrequent updates</li></ul>
Comments	<a href="https://support.microsoft.com/en-hk/help/4468242/microsoft-edge-browsing-data-and-privacy">https://support.microsoft.com/en-hk/help/4468242/microsoft-edge-browsing-data-and-privacy</a>		

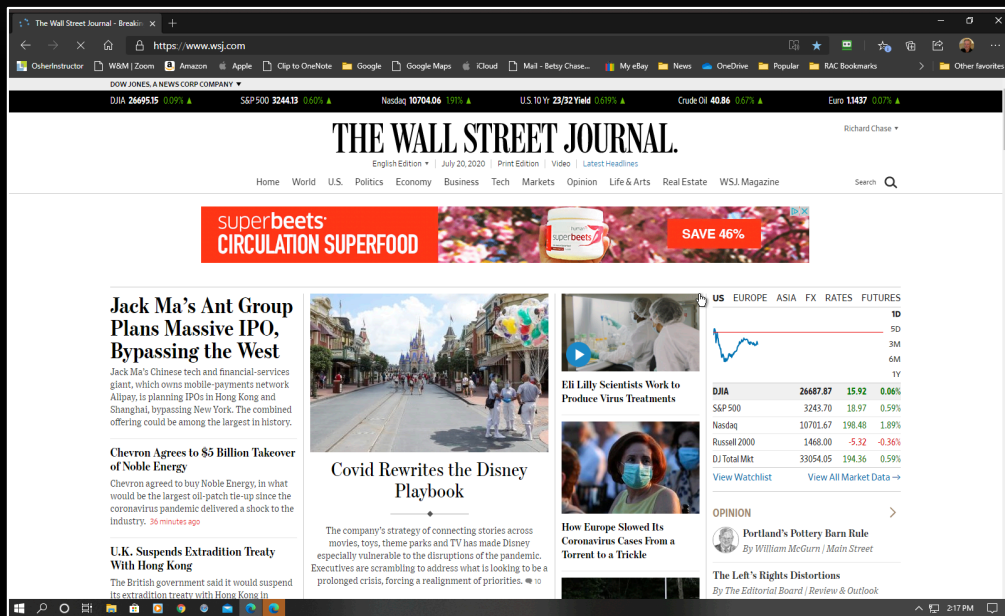
## BEST BROWSERS FOR SECURITY & PRIVACY – EXPRESS VPN

	Google Chrome	Brave	Mozilla Firefox
Pros	<ul style="list-style-type: none"><li>• Market share leader</li><li>• Automatically updates every 6-8 weeks</li><li>• Encourages hackers to find vulnerabilities</li></ul>	<ul style="list-style-type: none"><li>• Default AD blocker</li><li>• Unencrypted site(s) to https feature</li><li>• Robust user-controlled security settings</li></ul>	<ul style="list-style-type: none"><li>• Non-profit</li><li>• Phishing &amp; malware protection</li><li>• Extensive privacy &amp; security settings</li></ul>
Cons	<ul style="list-style-type: none"><li>• Monetizes “knowing everything about you”</li><li>• Automatically signs you in</li><li>• Numerous extensions at price of less privacy</li></ul>	<ul style="list-style-type: none"><li>• Launched its own ad program in April 2019</li></ul>	<ul style="list-style-type: none"><li>• Nothing really</li></ul>
Comments	<ul style="list-style-type: none"><li>• Situational ethics</li></ul>	<ul style="list-style-type: none"><li>• Brave’s cryptocurrency, called the Basic Attention Tokens</li></ul>	

## BEST BROWSERS FOR SECURITY & PRIVACY – EXPRESS VPN

	TOR	
Pros	<ul style="list-style-type: none"><li>• Encrypts your traffic by “bouncing your communications around a distributed network of relays” of thousands of volunteer computers</li><li>• Based on Firefox; follows their updates</li></ul>	
Cons	<ul style="list-style-type: none"><li>• Internet speed is likely to be affected as it routes traffic over three different hops through the Tor network, and it may break some sites because of its NoScript feature</li></ul>	
Comments		

# MS EDGE BROWSER - DEMO



- Versions available for Windows, Mac, Android and iOS
- Ability to synch settings (e.g. bookmarks, browsing history, encrypted web credentials, etc.)
- Collections
- Immersive Reader (F9)
- Sharing
- Supports most Chrome extensions
- <https://www.microsoft.com/en-us/edge/features>

# BROWSER BEST PRACTICES

- Keep your browser up to date
- Be wary of adding extensions from 3<sup>rd</sup> parties – research before installing
- Graphics and media intensive pages can put a hurt on your PC's performance – even when browser is minimized
- Bookmarks
  - Create folders to consolidate like websites (e.g. news, restaurants, sports, search engines, etc.)
  - Prune your bookmarks periodically
- Use Favorites & Favorites Bar (Ribbon) for frequently visited websites
  - Consider truncating bookmark names

Use Collections (MS Edge) and Reading List (Safari) to store web pages that have limited shelf life or need

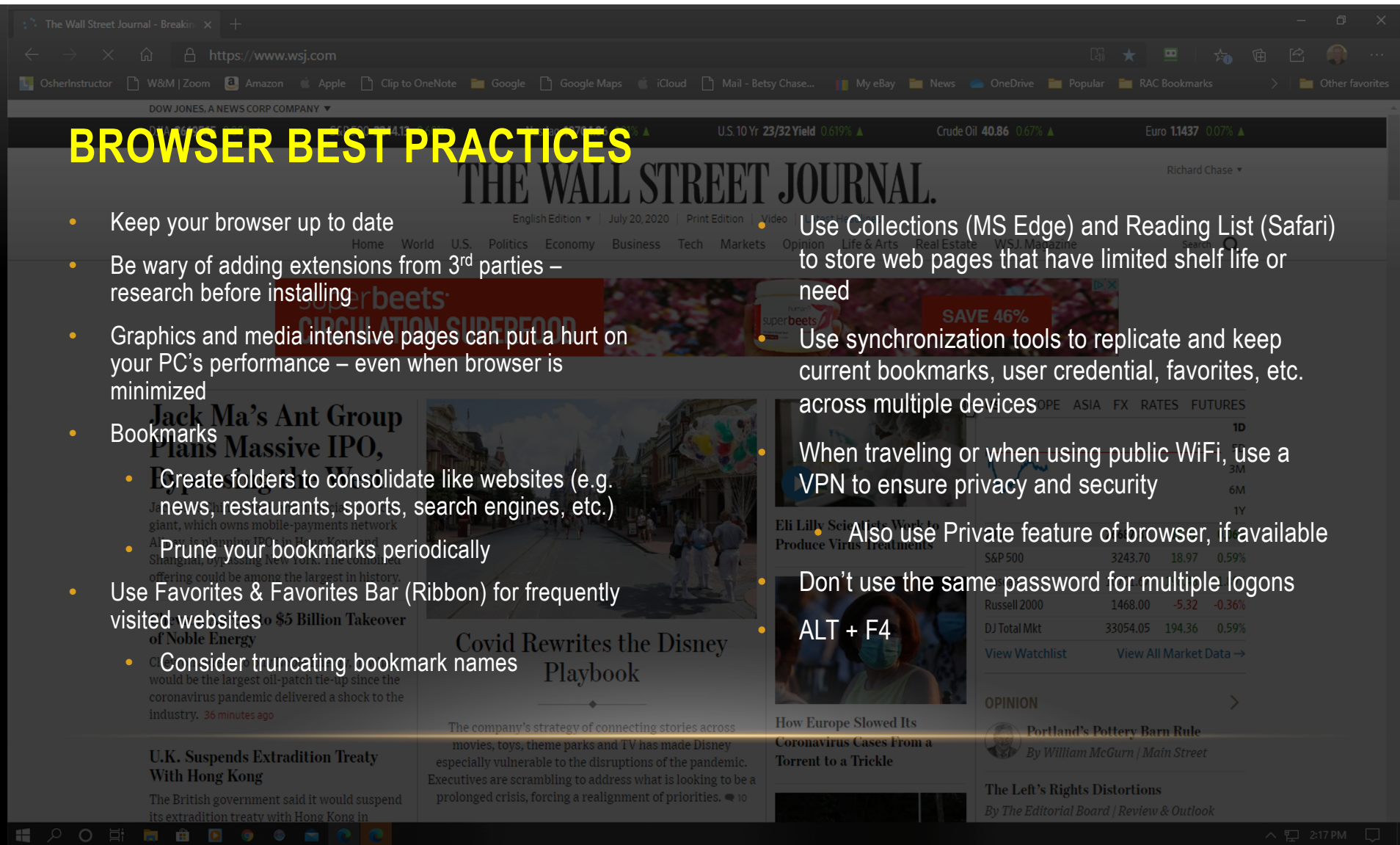
Use synchronization tools to replicate and keep current bookmarks, user credential, favorites, etc. across multiple devices

When traveling or when using public WiFi, use a VPN to ensure privacy and security

Also use Private feature of browser, if available

Don't use the same password for multiple logons

ALT + F4





# REFERENCES

- Articles on Comparing Browsers

<https://www.digitaltrends.com/computing/best-browser-chrome-vs-firefox-vs-safari-vs-edge/>

<https://www.pcmag.com/news/chrome-edge-firefox-opera-or-safari-which-browser-is-best>

<https://www.pcmag.com/news/dump-chrome-7-alternative-web-browsers>

[https://www.expressvpn.com/blog/best-browsers-for-privacy/?offer=3monthsfree&offer\\_code=3c6hjoor69&refID=campaignid=1614598491&gclid=Cj0KCQjw3s\\_4BRDPAIsAJsyoLNPugbMeKG2J6JvPYdrkDtju0C\\_RzLFCdwDQcq5fS1GkfSzCsEviv0aAp2zEALw\\_wcB](https://www.expressvpn.com/blog/best-browsers-for-privacy/?offer=3monthsfree&offer_code=3c6hjoor69&refID=campaignid=1614598491&gclid=Cj0KCQjw3s_4BRDPAIsAJsyoLNPugbMeKG2J6JvPYdrkDtju0C_RzLFCdwDQcq5fS1GkfSzCsEviv0aAp2zEALw_wcB)

<https://venturebeat.com/2020/01/15/browser-benchmark-battle-january-2020-chrome-firefox-edge-brave/view-all/>

<https://www.pcmag.com/reviews/microsoft-edge-chromium>

- Browser Download Links

MS Edge: <https://www.microsoft.com/en-us/edge>

Chrome: <https://www.google.com/chrome/?brand=CHBD>

Firefox: <https://www.mozilla.org/en-US/firefox/new/>

Brave: <https://brave.com>

Opera: <https://www.opera.com>

## WSJ Article

<https://www.wsj.com/articles/quit-chrome-safari-and-edge-are-just-better-browsers-for-you-and-your-computer-11594558801>