

Performance of HTTP/2 vs HTTP/3 difference Regardless Security

CSE310 Final Project

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Intro how much HTTP/3 performs better than HTTP/2? Does it really?

Idea

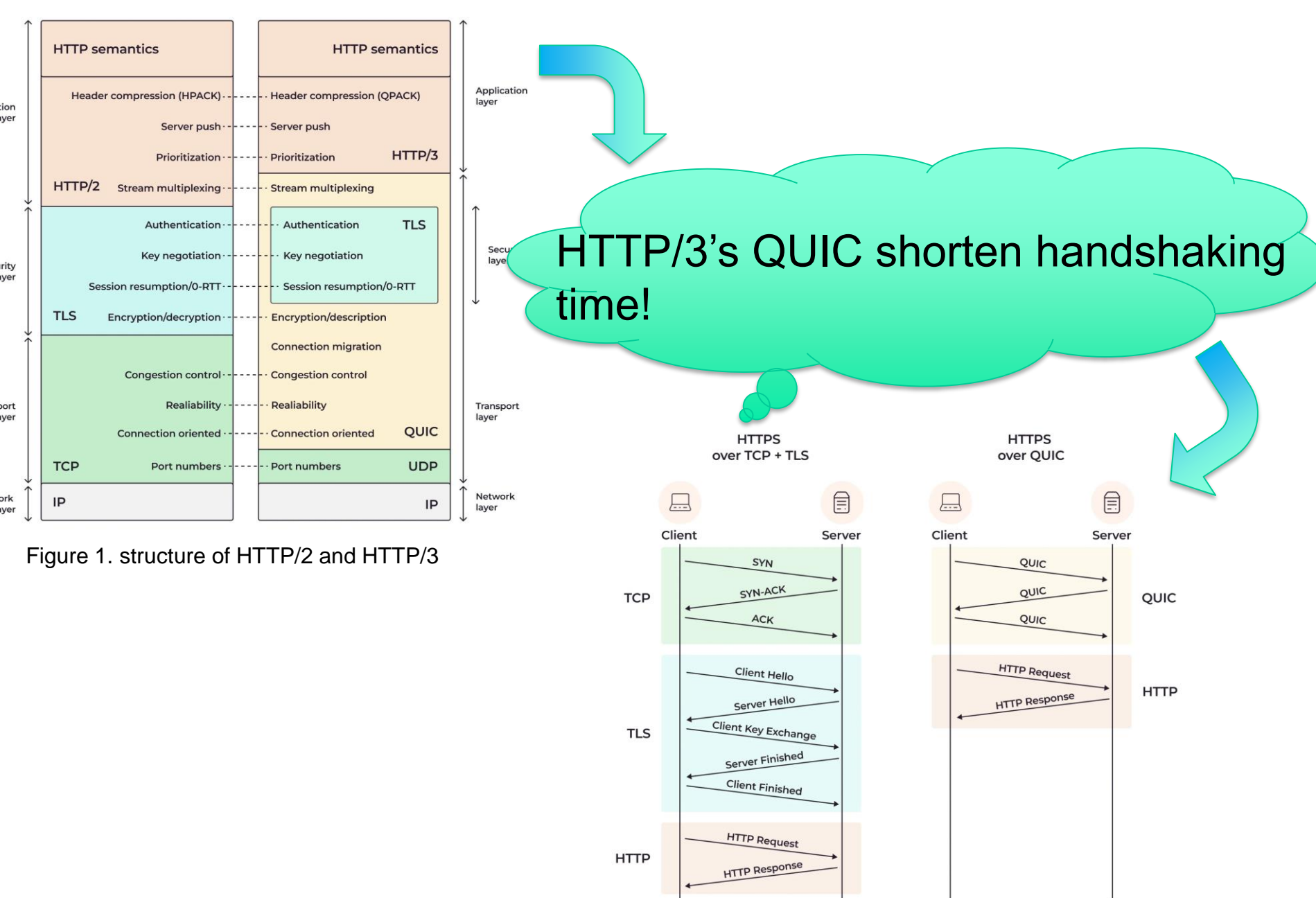


Figure 1. structure of HTTP/2 and HTTP/3

Plan Compare times to fully load various websites when QUIC enabled and when QUIC disabled.

Proceed this 10 times each per websites, get average of the time and COMPARE which is **FASTER!**

Findings



Graphs of Google America (www.google.com), Google Japan (www.google.co.jp), Google Korea (www.google.co.kr), Google Canada (www.google.ca)

Google and Others Average Time with QUIC vs without QUIC

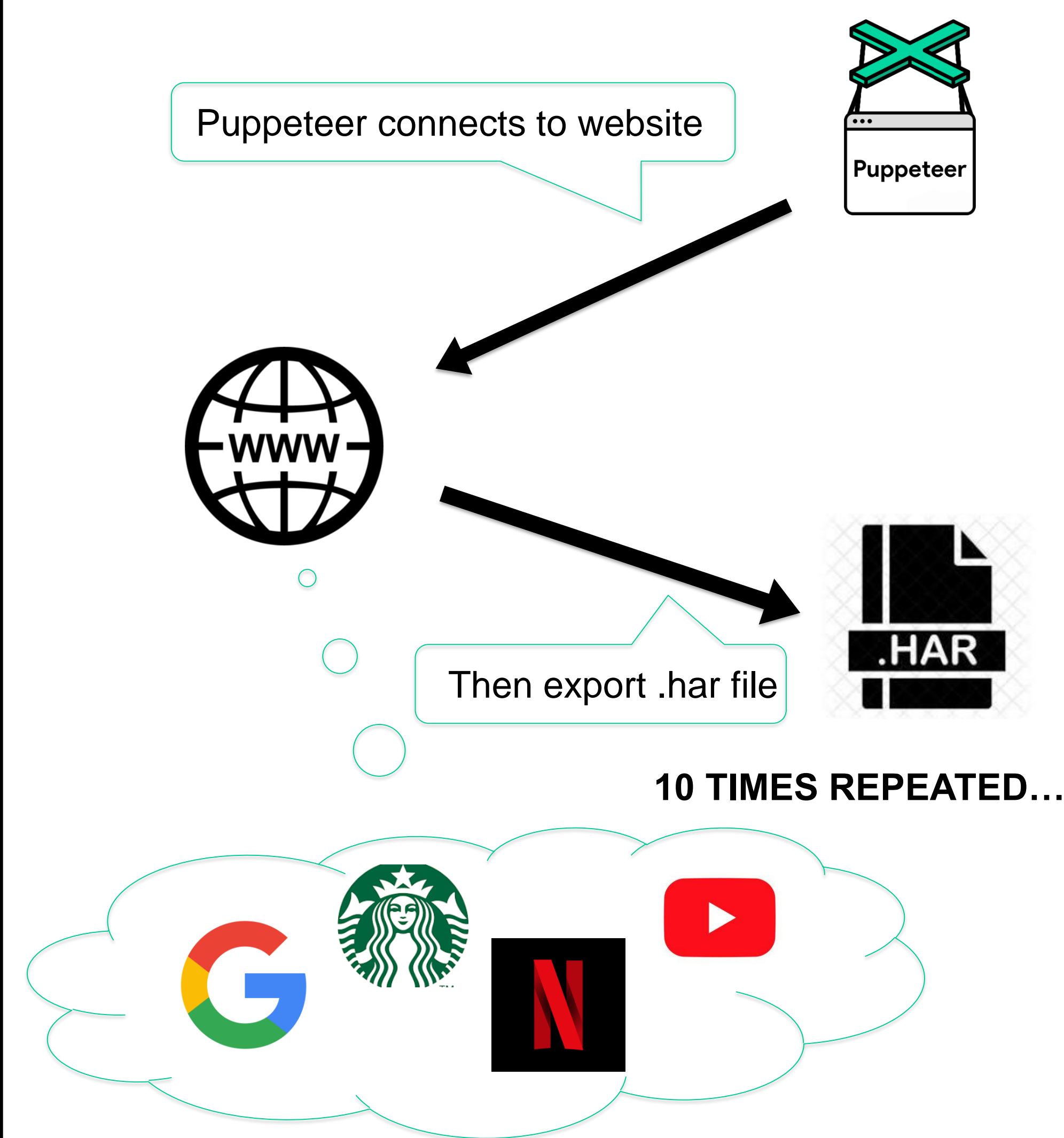
	with QUIC	without QUIC
www.google.com	371.5	392.1
www.netflix.com/kr	947.8	1002.9
www.youtube.com	1149.3	1249.0
www.starbucks.co.kr	1191.0	1389.0

Google Average Time with QUIC vs without QUIC

	with QUIC	without QUIC
www.google.com	371.5	392.1
www.google.ca	368.0	386.6
www.google.co.jp	374.1	408.8
www.google.co.kr	363.3	395.8

Set-up Laptop connected with optical fiber (avg download ~70 mbps, avg upload ~83 mbps)

Methodology



Takeaways

Google...

America vs Canada vs Japan vs Korea differs?

Google HTTP/3 & Google HTTP/2 NOT much different!

NO!

→ Website Location DOES NOT MATTER

Google HTTP/2 vs Google HTTP/3 differs?

Google HTTP/3 ~365ms, Google HTTP/2 ~ 395ms

YES!

→ approx. **30ms** differs!!! It performs BETTER

Google vs Netflix vs Starbucks vs Youtube differs?

YES!

min. 371ms ~ max. 1191ms VARIES

→ contents (video, img, js, css, ...) MATTERS

Netflix, Starbucks, Youtube HTTP/2 vs HTTP/3 differs?

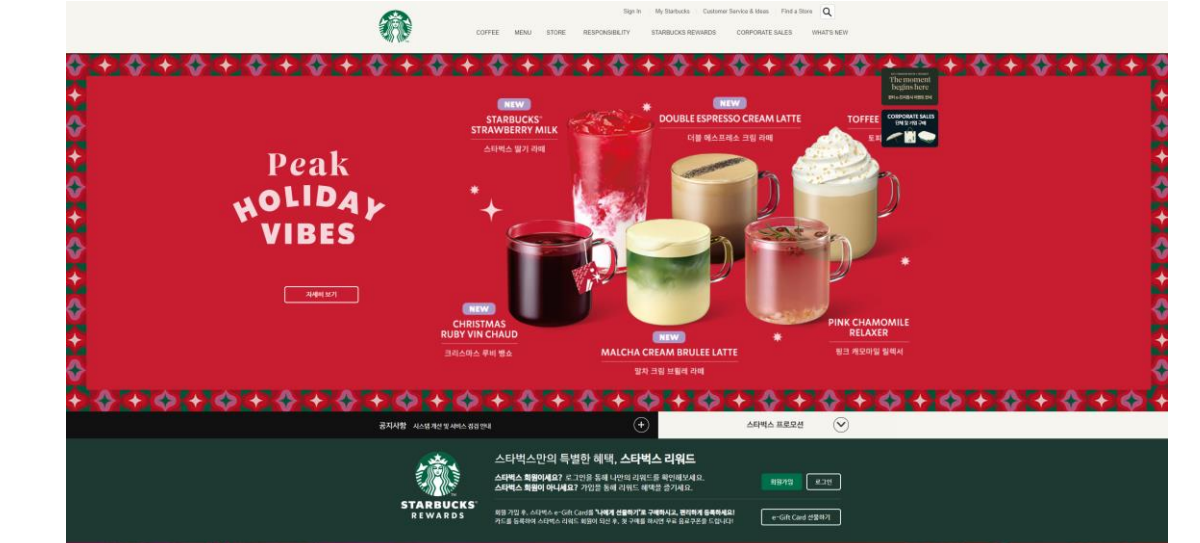
YES!

HTTP/3 avg. 93ms FASTER.

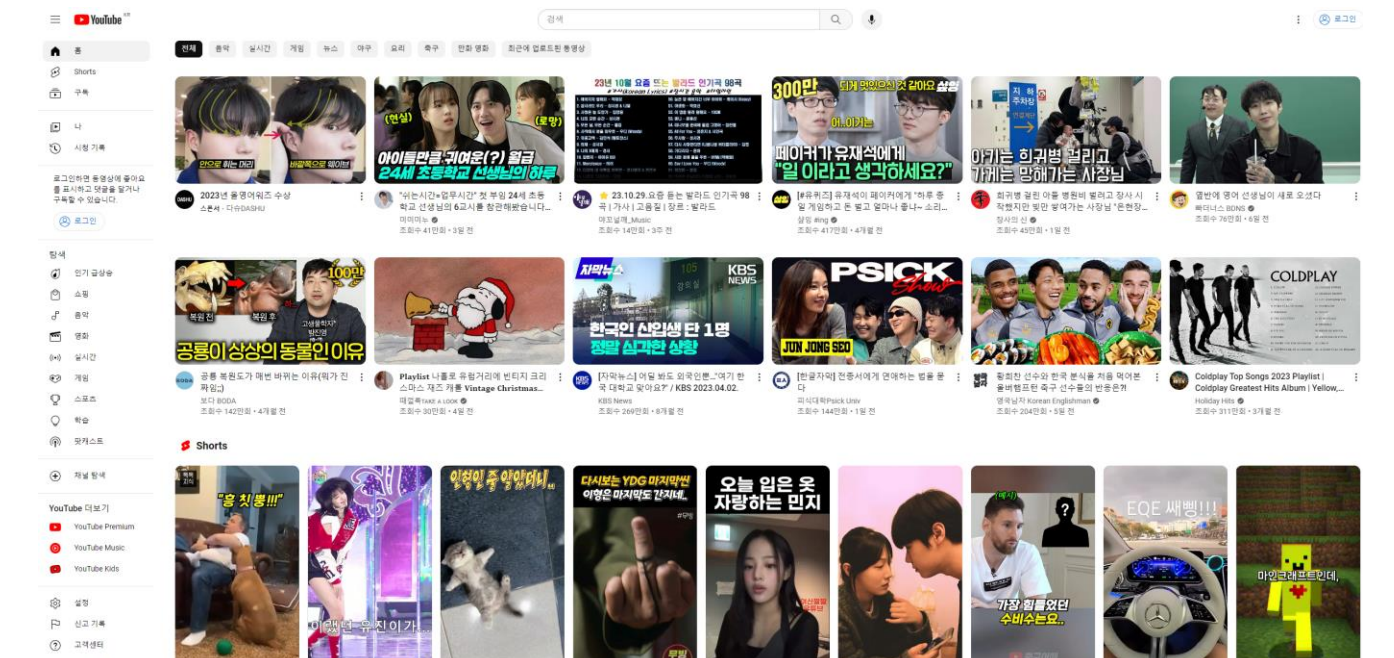
→ the more time takes, the bigger the difference between HTTP/2 and HTTP/3

WHY????

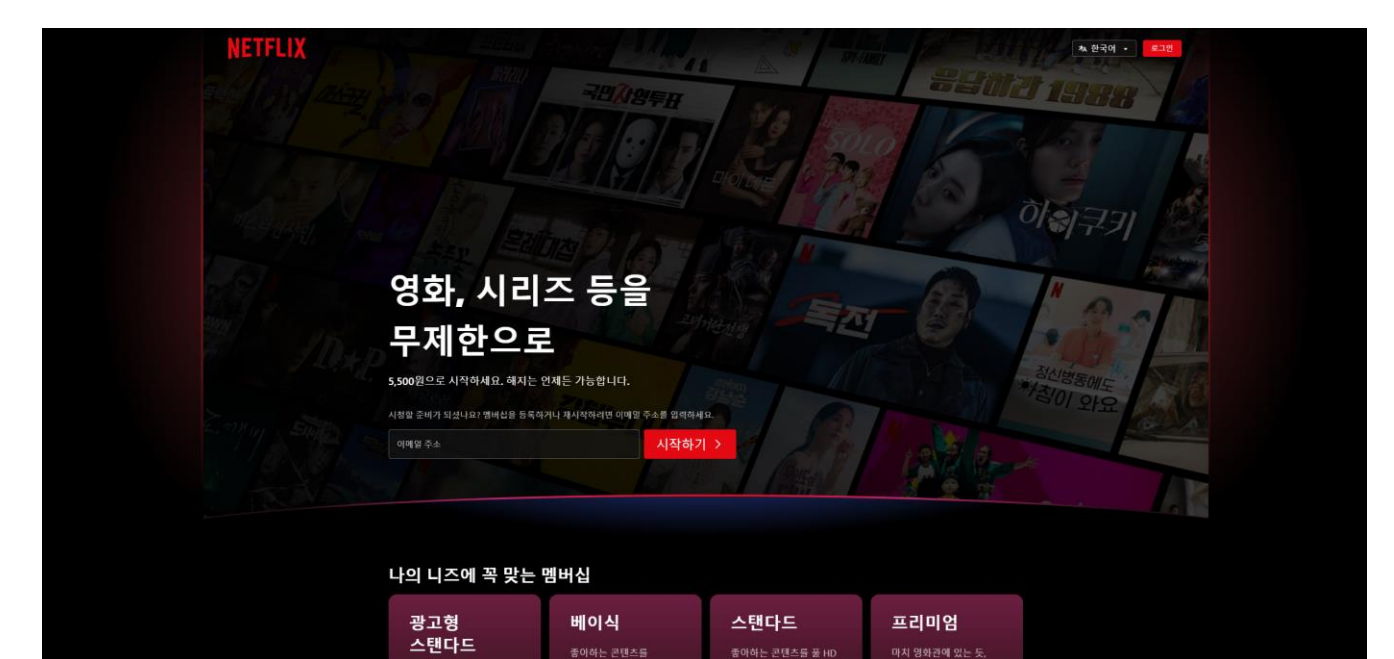
G vs



MOST js functions



MOST video contents



MORE js func & video contents

References puppeteer