Comparative Analysis & Optimization Strategy Report

Performance Evaluation of CNN, Galala University, and Noon

Based on Mobile & Desktop Metrics

December 2, 2025

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1 Revised Executive Summary & Methodology

1.1 Executive Summary

This report evaluates the performance of three websites—**CNN**, **Galala University (GU)**, and **Noon**—using Google PageSpeed Insights in both Mobile and Desktop modes.

Collecting data from both device types provides a broader understanding of how each website behaves under different conditions. However, all comparisons, rankings, bottleneck identification, and optimization recommendations in this report are based primarily on **Mobile performance**, as mobile metrics are more demanding, more relevant to real-world users, and aligned with the assignment requirements. Desktop results are included only to provide additional context in the findings.

1.2 Methodology

The methodology followed a standardized testing approach:

1. **Analysis:** Each website was analyzed using PageSpeed Insights in both Mobile and Desktop modes.
2. **Data Collection:** Key performance metrics were collected, including Performance Score, Largest Contentful Paint (LCP), Interaction to Next Paint (INP), Cumulative Layout Shift (CLS), and load-related timings such as FCP and TBT.
3. **Comparison:** A comparison table was generated (based on Mobile results) to evaluate differences across websites.
4. **Deep Dive:** The worst-performing website was identified using Mobile results and analyzed in detail, including bottleneck identification and optimization recommendations.

This approach ensures consistent measurement and provides a clear pathway for improving performance according to industry best practices.

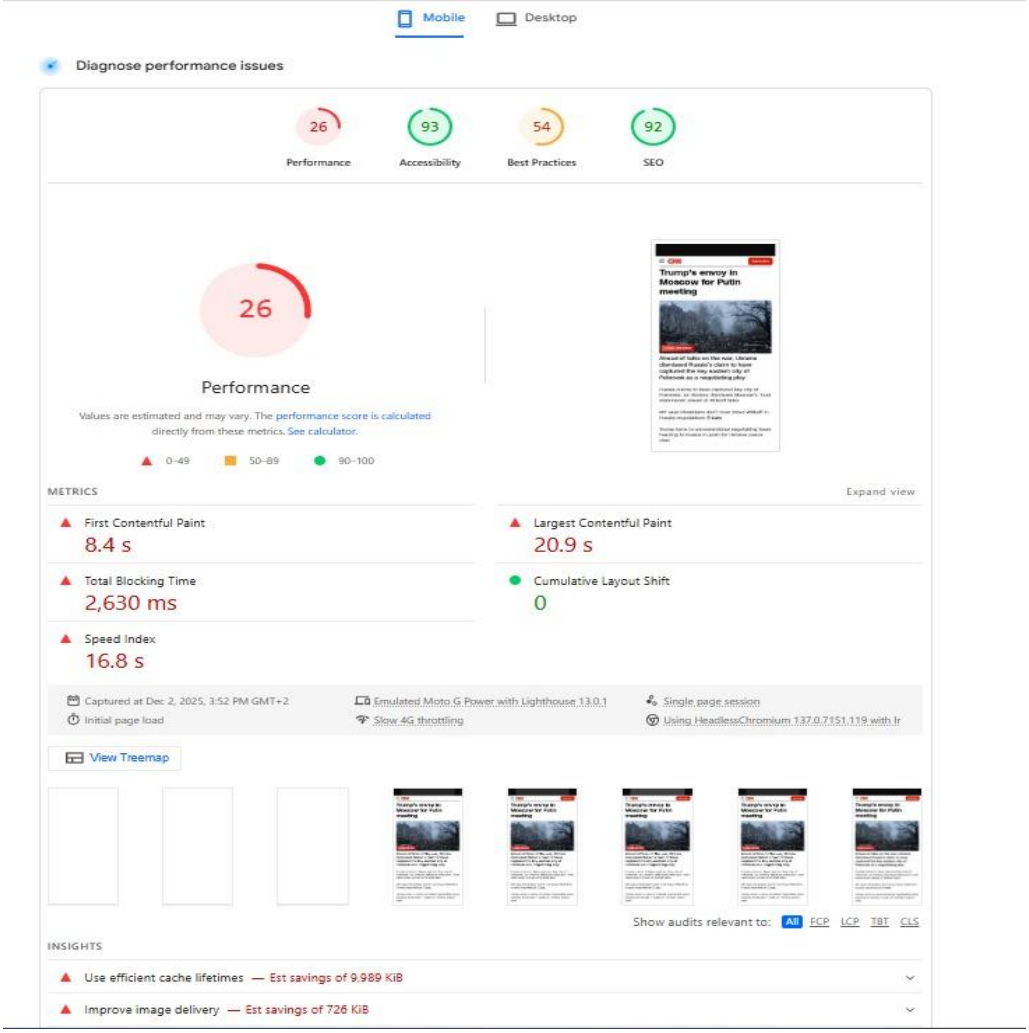
2 Detailed Findings for Each Website

2.1 1. CNN Mobile Performance

Status: Weakest Performance

Metric	Value
Performance Score	26
Largest Contentful Paint (LCP)	20.9s
Interaction to Next Paint (INP)	159ms
Cumulative Layout Shift (CLS)	0.01
First Contentful Paint (FCP)	8.4s
Total Blocking Time (TBT)	2630ms

Analysis: CNN shows the weakest performance among the tested websites. Its extremely high LCP and TBT indicate render-blocking scripts, unoptimized images, and inefficient resource delivery, which severely degrade the mobile user experience.



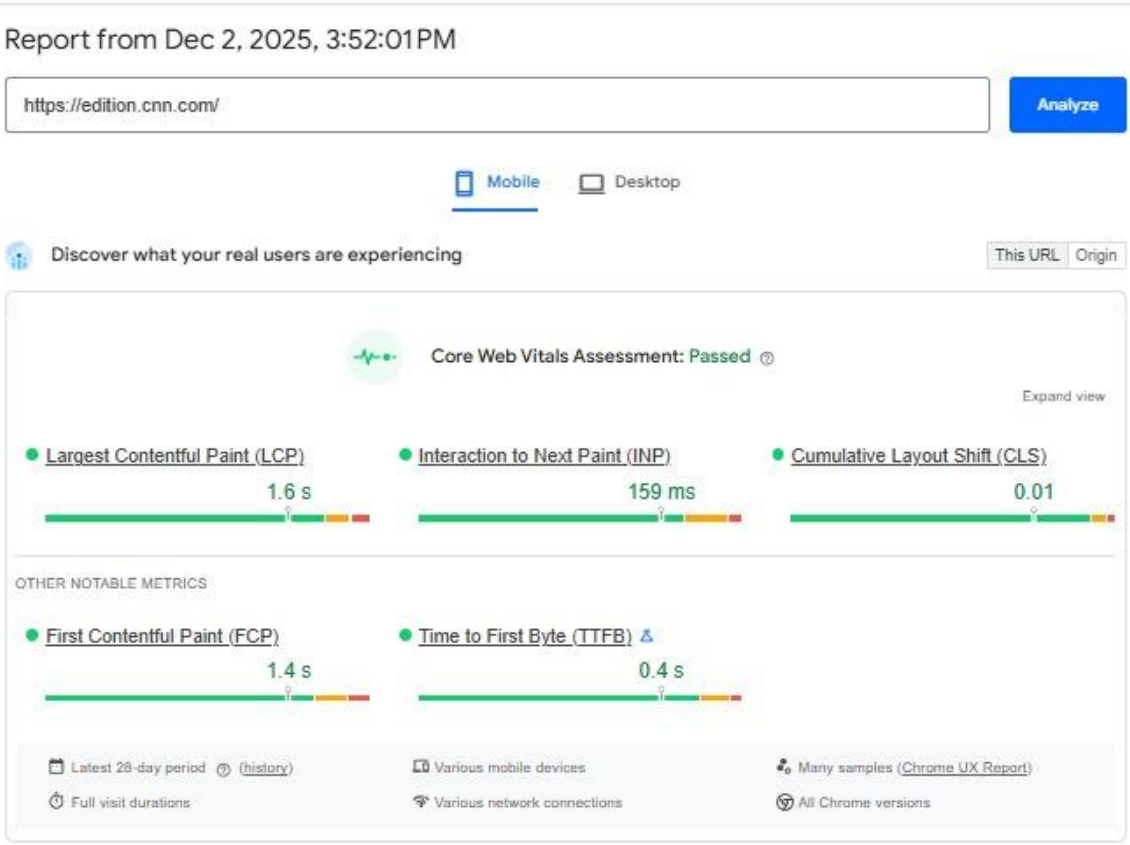


Figure 1: CNN Mobile Performance Overview

2.2 2. Galala University (GU) Mobile Performance

Status: Moderate Performance

Metric	Value
Performance Score	41
LCP	3.6s
INP	217ms
CLS	0.02
FCP	3.1s
Time to First Byte (TTFB)	1.6s

Analysis: The GU website demonstrates moderate performance. Its Core Web Vitals are acceptable, but server response time and overall loading speed show clear room for improvement.

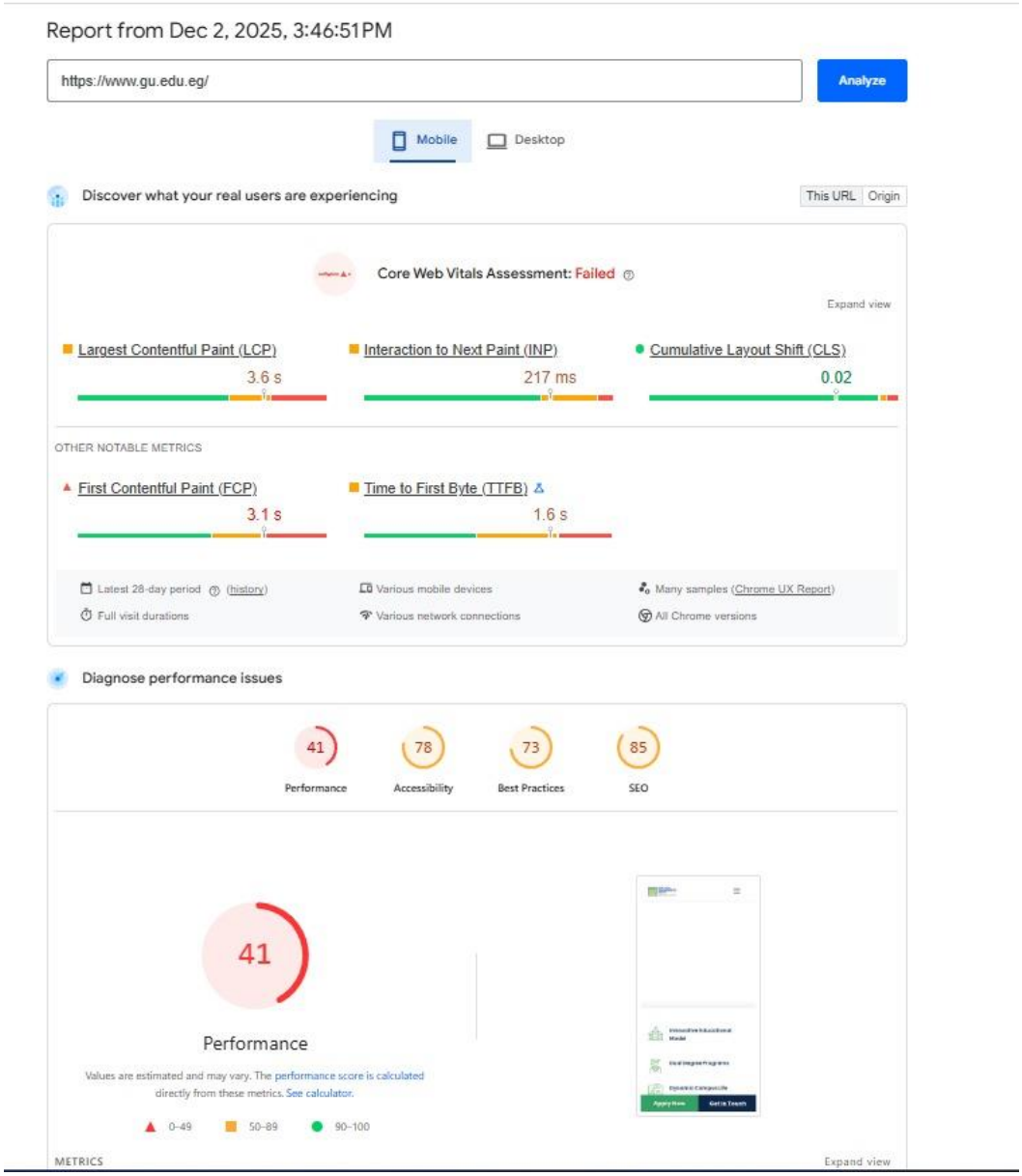


Figure 2: Galala University Mobile Performance Overview

2.3 3. Noon Mobile Performance

Status: Best Performance

Metric	Value
Performance Score	60
LCP	3.1s
INP	N/A
CLS	0.00
FCP	2.3s
TTFB	1.3s

Analysis: Noon performs the best overall. It achieves the fastest loading speeds and perfect layout stability, although the LCP can still be improved to meet the ideal threshold ($< 2.5s$).

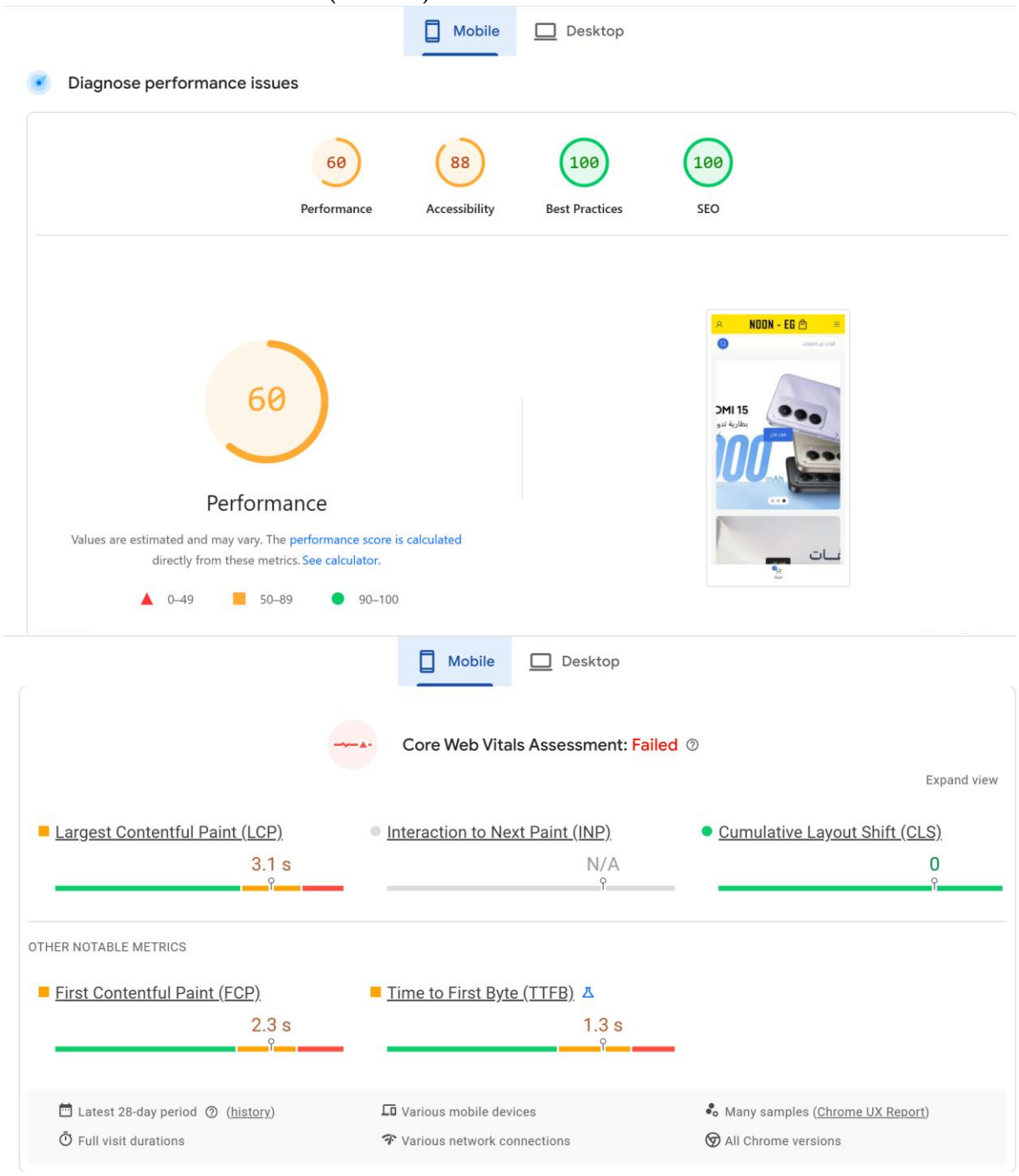


Figure 3: Noon Mobile Performance Overview

3 Comparison Analysis

The comparison of the three websites reveals significant performance differences:

- **1st Place: Noon**
  Highest performance score (60), fast LCP/FCP, and perfect CLS.
- **2nd Place: Galala University (GU)**
  Moderate results with acceptable Core Web Vitals but slower server response.
- **3rd Place: CNN**
  Very poor loading times and heavy resource blocking issues.

Conclusion: These results highlight varying levels of optimization. CNN requires substantial improvements, GU needs moderate frontend and backend optimization, and Noon requires only minor enhancements.

4 Optimization Recommendations

Based on the analysis, the following strategies are recommended (particularly for CNN as the worst performer):

4.1 1. Image Optimization

- Compress large images to reduce file sizes.
- Convert images to next-generation formats such as WebP.
- Apply lazy loading so off-screen images load later.
- Define image width and height to maintain stable layout and reduce render- ing delays.

4.2 2. Code Optimization

- Minify CSS and JavaScript to decrease file sizes.
- Remove unused CSS/JS to reduce parsing and execution time.
- Use code splitting so only essential code loads during the initial page view.

4.3 3. Caching Strategy

- Improve browser caching by setting longer cache lifetimes for static assets.
- Deliver images, CSS, and JS through a Content Delivery Network (CDN) for faster global loading.
- Use a service worker to cache key assets and improve repeat-visit performance.

4.4 4. Critical Rendering Path

- Inline critical CSS needed for above-the-fold content.
- Defer or async non-critical JavaScript to avoid blocking rendering.
- Preload important resources such as primary fonts and the main stylesheet.

4.5 5. Content Delivery

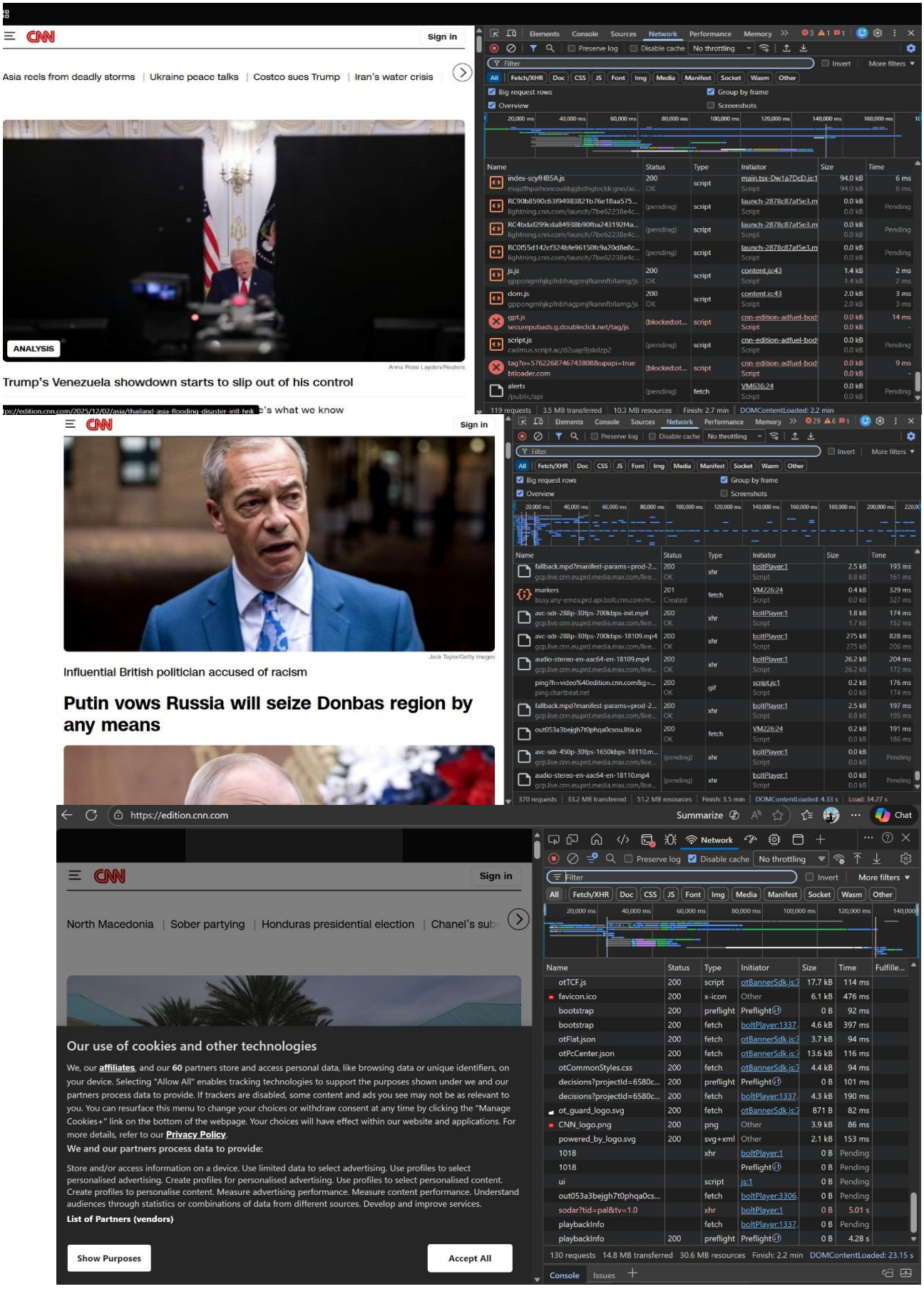
- Serve all static assets through a CDN to reduce latency.
- Enable Gzip or Brotli compression to reduce transfer sizes of HTML, CSS, and JS files.

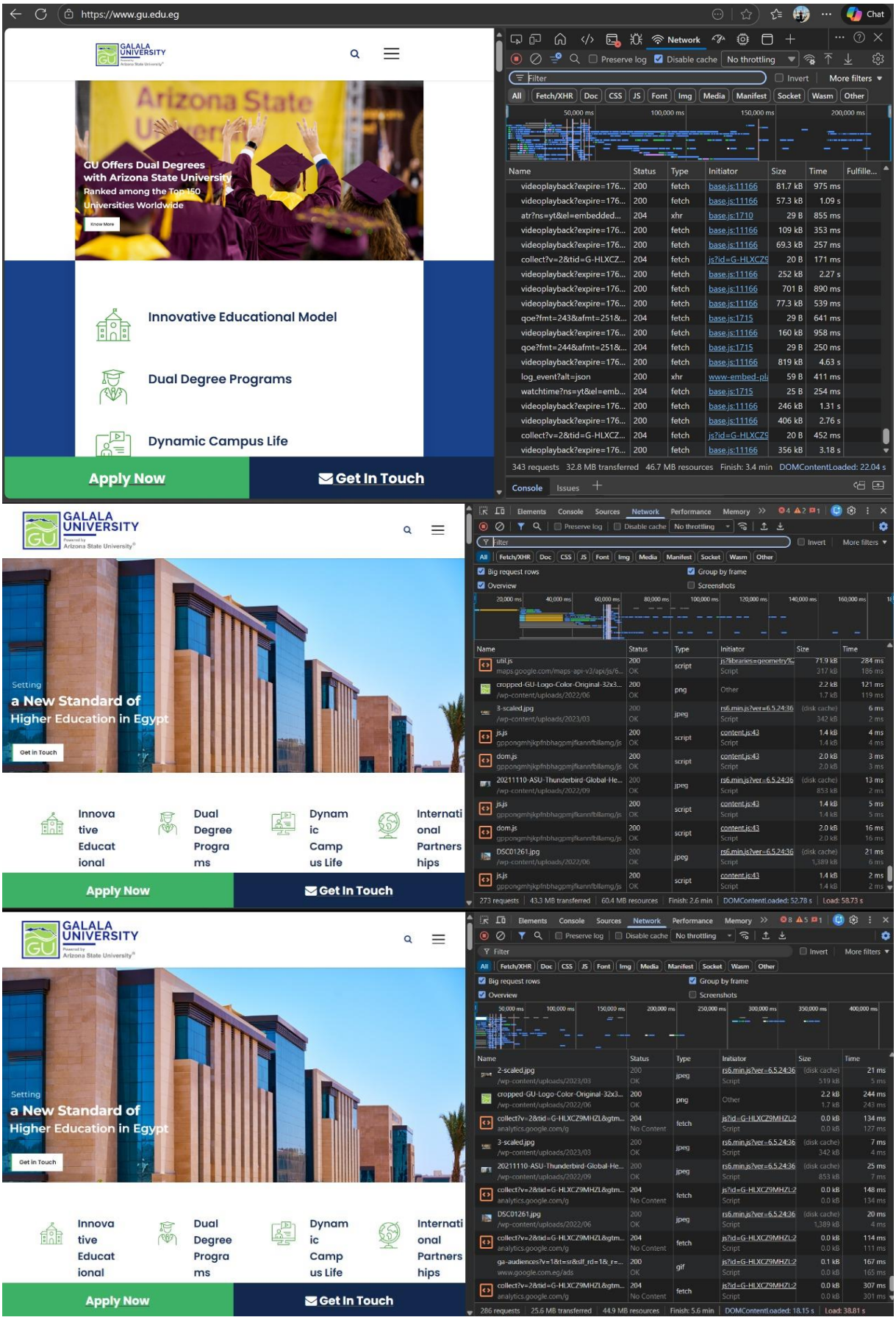
5 Conclusion

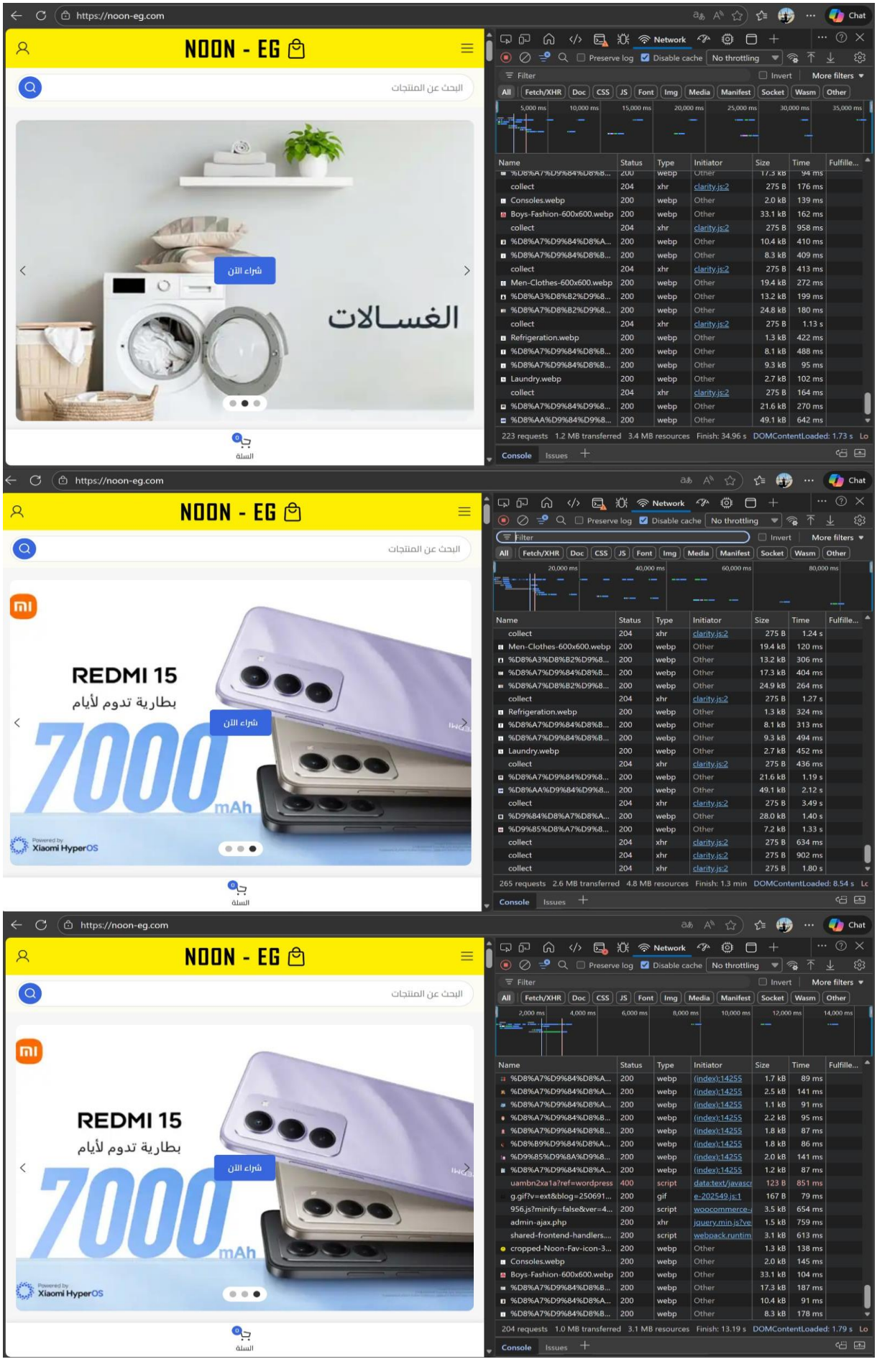
The performance evaluation clearly identifies **CNN** as the worst-performing website due to severe delays in loading and heavy script execution. **GU** per- forms moderately well but still requires optimization, particularly in reducing server response time. **Noon** provides the best mobile experience, with fast loading and excellent layout stability, needing only minor adjustments to fur- ther improve its Core Web Vitals.

Applying the recommended optimizations, especially for CNN, will significantly enhance page load speed, responsiveness, and visual stability, ultimately improving user experience and SEO outcomes.

6 Evaluation of Network Requests and Media Loading:


CNN
Sign in
Asia reels from deadly storms | Ukraine peace talks | Costco sues Trump | Iran's water crisis
ANALYSIS
Trump's Venezuela showdown starts to slip out of his control
Influential British politician accused of racism
Putin vows Russia will seize Donbas region by any means
https://edition.cnn.com
Summarize
Chat
North Macedonia | Sober partying | Honduras presidential election
Our use of cookies and other technologies
We, our affiliates, and our 60 partners store and access personal data, like browsing data or unique identifiers, on your device. Selecting "Allow All" enables tracking technologies to support the purposes shown under we and our partners process data to provide. If trackers are disabled, some content and ads you see may not be as relevant to you. You can resurface this menu to change your choices or withdraw consent at any time by clicking the "Manage Cookies+" link on the bottom of the webpage. Your choices will have effect within our website and applications. For more details, refer to our Privacy Policy.
We and our partners process data to provide:
Store and/or access information on a device. Use limited data to select advertising. Use profiles to select personalised advertising. Create profiles for personalised advertising. Use profiles to select personalised content. Create profiles to personalise content. Measure advertising performance. Measure content performance. Understand audiences through statistics or combinations of data from different sources. Develop and improve services.
List of Partners (vendors)
Show Purposes
Accept All
Elements Console Sources Network Performance Memory
Preserve log Disable cache No throttling
Filter Invert More filters
All Fetch/XHR Doc CSS JS Font Img Media Manifest Socket Wasm Other
Big request rows Group by frame
Overview Screenshots
Name Status Type Initiator Size Time
119 requests 3.5 MB transferred 10.3 MB resources Finish: 2.7 min DOMContentLoaded: 2.2 min
370 requests 33.2 MB transferred 51.2 MB resources Finish: 3.5 min DOMContentLoaded: 4.33 s Load: 34.27 s
130 requests 14.8 MB transferred 30.6 MB resources Finish: 2.2 min DOMContentLoaded: 23.15 s
Console Issues


https://www.gu.edu.eg
GALALA UNIVERSITY
GU Offers Dual Degrees with Arizona State University
Ranked among the Top 150 Universities Worldwide
Know More
Innovative Educational Model
Dual Degree Programs
Dynamic Campus Life
Apply Now
Get In Touch
Network
Preserve log
Disable cache
No throttling
Filter
Invert
More filters
All
Fetch/XHR
Doc
CSS
JS
Font
Img
Media
Manifest
Socket
Wasm
Other
Name
Status
Type
Initiator
Size
Time
343 requests 32.8 MB transferred 46.7 MB resources Finish: 3.4 min DOMContentLoaded: 22.04 s
Console
Issues
GALALA UNIVERSITY
Setting
a New Standard of
Higher Education in Egypt
Get in Touch
Innova tive Educat ional
Dual Degree Progra ms
Dynam ic Camp us Life
Internati onal Partners hips
Apply Now
Get In Touch
Elements
Console
Sources
Network
Performance
Memory
Big request rows
Group by frame
Overview
Screenshots
273 requests 43.3 MB transferred 60.4 MB resources Finish: 2.6 min DOMContentLoaded: 52.78 s Load: 58.73 s
GALALA UNIVERSITY
Setting
a New Standard of
Higher Education in Egypt
Get in Touch
Innova tive Educat ional
Dual Degree Progra ms
Dynam ic Camp us Life
Internati onal Partners hips
Apply Now
Get In Touch
286 requests 25.6 MB transferred 44.9 MB resources Finish: 5.6 min DOMContentLoaded: 18.15 s Load: 38.81 s


https://noon-eg.com
NOON - EG
البحث عن المنتجات
شراء الآن
الغسالات
السلة
Network
Preserve log
Disable cache
No throttling
Filter
Invert
More filters
All
Fetch/XHR
Doc
CSS
JS
Font
Img
Media
Manifest
Socket
Wasm
Other
Name
Status
Type
Initiator
Size
Time
Fulfille...
223 requests 1.2 MB transferred 3.4 MB resources Finish: 34.96 s DOMContentLoaded: 1.73 s
Console
Issues
https://noon-eg.com
NOON - EG
البحث عن المنتجات
REDMI 15
بطارية تدوم لأيام
7000
mAh
شراء الآن
Powered by Xiaomi HyperOS
السلة
265 requests 2.6 MB transferred 4.8 MB resources Finish: 1.3 min DOMContentLoaded: 8.54 s
Console
Issues
https://noon-eg.com
NOON - EG
البحث عن المنتجات
REDMI 15
بطارية تدوم لأيام
7000
mAh
شراء الآن
Powered by Xiaomi HyperOS
السلة
204 requests 1.0 MB transferred 3.1 MB resources Finish: 13.19 s DOMContentLoaded: 1.79 s
Console
Issues