



WEB PROGRAMMING

SECV2223 (SECTION 01)

2024/2025 – SEMESTER 2

REPORT

COMPARATIVE EVALUATION OF WEBSITES

LECTURER: TS. DR. SARINA BINTI SULAIMAN

2/ SECBH

GROUP 5 : BUGGED OUT

NAME	MATRIC NO.
NURUL ATHIRAH SYAFIQAH BINTI MOHD RAZALI	A23CS0163
NAZATUL NADHIRAH BINTI SABTU	A23CS0144
CHIN PEI WEN	A23CS0065
TAN ZHAO HONG	A23CS0188

Introduction

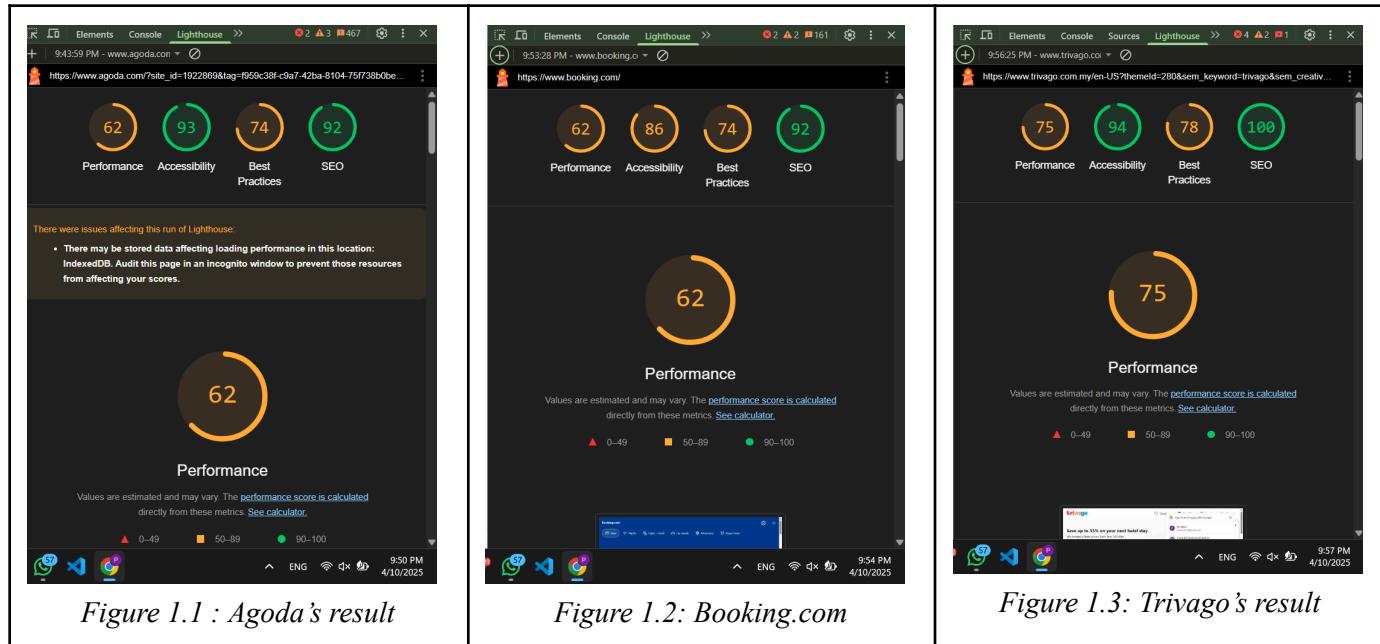
Online bookings have become a game-changer for the hotel industry. The hotel industry is witnessing a significant shift towards digital solutions, and an online booking system is at the forefront of this transformation. These platforms have become integral to the hospitality sector, enabling users to compare prices, read reviews and make reservations easily. To ensure these platforms deliver optimal user experiences, tools like Google Lighthouse are employed to assess various performance metrics. This report aims to compare five prominent hotel booking websites which are Agoda, Booking.com, Trivago, Airbnb and Traveloka. By analyzing key metrics, we seek to identify strengths and areas for improvement, ultimately offering recommendations to enhance user experience and performance across these platforms.

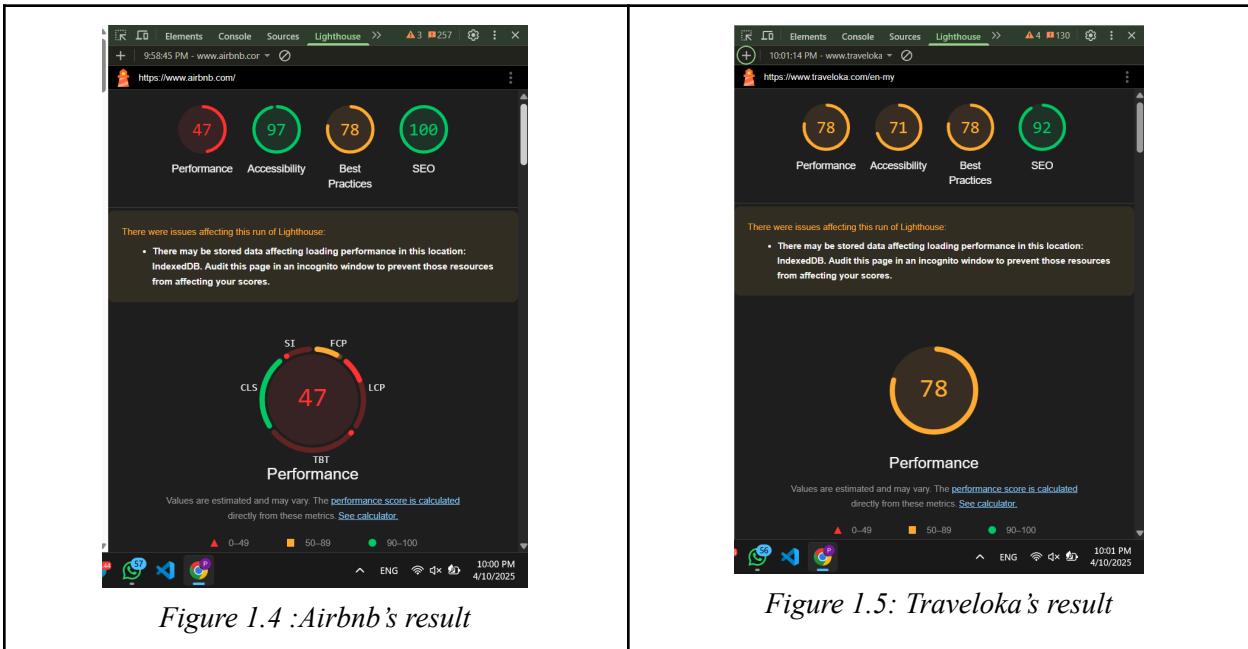
Methodology

To conduct a comprehensive analysis of hotel booking websites, we have selected five popular platforms within the same domain; [Agoda](#), [Booking.com](#), [Trivago](#), [Airbnb](#), and [Traveloka](#).

These platforms were chosen based on their global and regional popularity, featuring richness and relevance in the online travel and hospitality industry. We utilized Google Lighthouse which is an open-source performance auditing tool developed by Google, to evaluate each website. Lighthouse provides audits for various aspects of the web page quality including performance, accessibility, best practices and SEO.

Results





Results Summary

Website	Performance	Accessibility	Best Practice	SEO
Agoda	62	93	74	92
Booking.com	62	86	74	92
Trivago	75	94	78	100
AirBNB	47	97	78	100
Traveloka	78	71	78	92

Analysis

Agoda

- Strength:

Agoda demonstrates strong accessibility with a score of 93 which indicates that the website is well-designed for users with various needs including those with disabilities. It has a solid SEO score of 92 as it is well-optimized for the search engines and likely to appear prominently in the search results.

- Weakness:

Agoda's performance score is relatively low at 62 as the website could benefit from improvements in speed and responsiveness. Its best practice score of 74 indicates that there is room to enhance its technical standards and development practices.

- Recommendation for optimization and improvement:

Agoda should improve the performance by compressing the images, using lazy loading for non-critical content, and optimizing script execution to speed up load times.

Booking.com

- Strength:

Booking has a good accessibility score of 86 to ensure a user-friendly experience for a broad range of users. Its SEO score of 92 also shows that it is effectively optimized for search visibility.

- Weakness:

The performance score of 62 implies that the site could be improved in terms of loading time and efficiency. Its best practice score of 74 suggests that while it meets most technical standards as there is still potential for refinement.

- Recommendation for optimization and improvement:

Booking can increase performance by minifying CSS files, reducing unused JavaScript, and optimizing image sizes to improve loading speed.

Trivago

- Strength:

Trivago has the highest overall scores across all categories, especially in SEO with a score of **100** and accessibility with a score of **94**. Its performance score of **75** is also above average, reflecting efficient design and resource loading.

- Weakness:

Although Trivago is strong overall, there's still minor room to enhance its performance and best practices (**78**) to reach peak optimization.

- Recommendation for optimization and improvement:

Trivago can improve its performance further by implementing more aggressive caching strategies, reducing unused CSS, and deferring offscreen images.

Airbnb

- Strength:

It has an outstanding accessibility score(97) which ensures the website is highly usable for people with disabilities. SEO score is 100, meaning the website is optimized for search engines, leading to better visibility and ranking in search results.

- Weakness:

Performance of the website is 47 which might be slow to load, have high resource usage or lack responsiveness. This can make users frustrated and lead to potential drop offs.

- Recommendation for optimization and improvement:

Airbnb should focus on enhancing its website performance by implementing lazy loading for images and resources. The company should also refine its coding best practices by adding Content Security Policy (CSP) headers to enhance security.

Traveloka

- Strength:

Traveloka scored high in SEO(92), showing that the website is well-optimized for search engines. This is likely due to good meta tags, clear structure, and mobile-friendly design. This website has implemented a fair number of best practices(78) which mean there is room for improvement, the platform is likely to freeform some major security or performance issues.

- Weakness:

Traveloka's performance score of 78 is decent but could be improved to make the website load faster, especially on mobile that can negatively affect user experience. Moreover, the accessibility score of 71 is the weakest point, meaning users may indicate issues who rely on assistive technologies such as, missing images description,, poor colour contrast or lack of proper semantic HTML.

- Recommendation for optimization and improvement:

Traveloka can increase the accessibility by adding descriptive alt-text to images and ensure sufficient contrast for text/background.

Conclusion

Based on the analysis above, **Trivago** is the most balanced performer, scoring consistently high in all four categories. **Airbnb** has the best accessibility and SEO, but its performance is the weakest, indicating a trade-off between visual/design richness and speed. **Traveloka** leads in performance, but falls behind in accessibility, hinting at prioritizing speed over inclusivity. **Agoda and Booking** share similar profiles, with average performance but strong accessibility and SEO — suggesting a safe but improvable web architecture.

Appendix

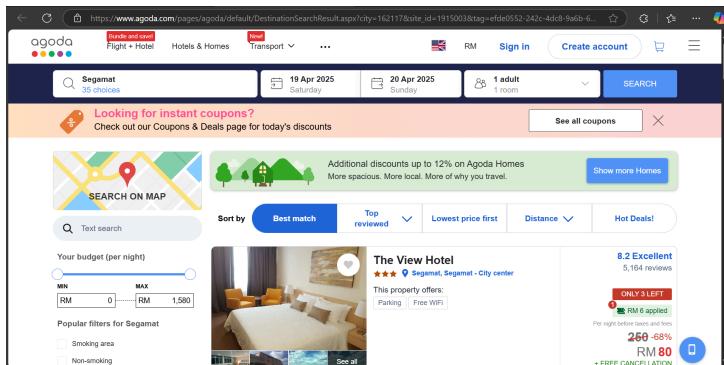


Figure 2.1 : Agoda's website

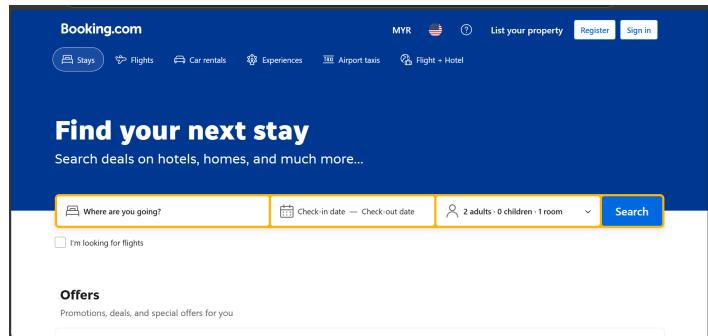


Figure 2.2 : Booking.com's website

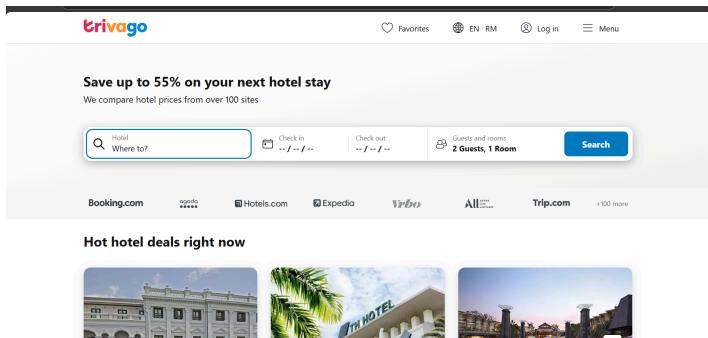


Figure 2.3 : Trivago's website

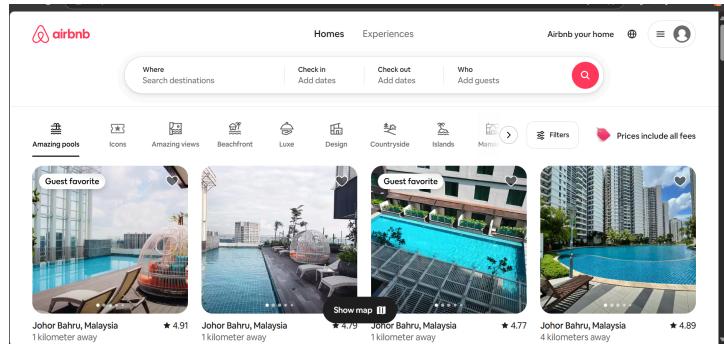


Figure 2.4 : Airbnb's website



Figure 2.5 : Traveloka's website

References

1. QueueMe. (n.d.). *5 reasons to use online booking system for your hotel reservation*. QueueMe. <https://queueme.io/blog/5-Reasons-to-Use-Online-Booking-System-for-Your-Hotel-Reservation.html>
2. Morris, W. (2021, September 2). *What is Google Lighthouse and how to use it*. Elegant Themes. <https://www.elegantthemes.com/blog/wordpress/what-is-google-lighthouse-and-how-to-use-it>
3. Titti, V. (2020, March 29). *Website-performance analysis using Google Lighthouse*. LinkedIn. <https://www.linkedin.com/pulse/website-performance-analysis-using-google-lighthouse-vinayak-t/>
4. Farside Dev. (n.d.). *Why website performance matters*. Farside Dev. <https://www.farsidedev.com/post/why-website-performance-matters#:~:text=In%20conclusion%20website%20performance%20is%20critical%20for%20providing,server%20response%20time%2C%20code%20quality%2C%20and%20media%20optimization.>
5. Forbes Business Council. (2023, March 20). *Understanding the importance of web accessibility*. Forbes. <https://www.forbes.com/councils/forbesbusinesscouncil/2023/03/20/understanding-the-importance-of-web-accessibility/>
6. HubSpot. (2010, March 4). *6 guidelines for exceptional website design and usability*. HubSpot. <https://blog.hubspot.com/blog/tabid/6307/bid/30557/6-guidelines-for-exceptional-website-design-and-usability.aspx>
7. SEMrush. (n.d.). *The importance of SEO*. SEMrush. <https://www.semrush.com/blog/importance-of-seo/?msockid=373414bd534965f22f550049520c6405>