

Ministry of Education and Science of Ukraine
Kryvyi Rih National University
Faculty of Information Technologies
Department of Computer Systems and Networks

XVIII All-Ukrainian Scientific and Practical WEB Conference of postgraduates, students, and young scientists “Computer Intelligent Systems and Networks”

CISN-2025

25-28 March 2025

Kryvyi Rih

Dear professors and students! The organizing committee invites you to participate in the XVIII All-Ukrainian Scientific and Practical WEB Conference for postgraduates, students, and young scientists "Computer Intelligent Systems and Networks" (CISN-2025).

The conference will be held on March 25-28, 2025, by Kryvyi Rih National University (KNU), Department of Computer Systems and Networks (CSN). You are warmly invited to participate in the WEB conference.

The conference will Address topics in the following directions:

1. **DIAGNOSTICS.** Diagnostics of computer systems and networks (**section 1**).
2. **PARALLEL COMPUTING.** High-performance computer systems, parallel and distributed computing. (**section 2**).
3. **DESIGN.** Design of computer systems and networks (**section 3**).
4. **PROGRAMMING.** System and applied programming (**section 4**).
5. **ARTIFICIAL INTELLIGENCE.** Computer system and networks of artificial intelligence (**section 5**).
6. **AUTOMATION, INDUSTRY 4.0.** Industrial networks, cyber-physical systems, big data, Internet of things, mobile and cloud services, augmented reality tools (**section 6**).
7. **SECURITY.** Information security in computer systems and networks (**section 7**).

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Muzyka I.O. - PhD (engineering), Associate Professor, Dean of the Faculty of Information Technologies, Kryvyi Rih National University, Kryvyi Rih.

The registration form for the conference is available on the website:: <https://sites.google.com/view/kicm/>

Working languages of the conference: Ukrainian, English.

The publication of abstracts is planned before the conference.

For timely publication in the conference proceedings, we kindly ask you to submit participant applications and abstracts in electronic format by March 12, 2025 (in any electronic storage medium or by email: cisn@knu.edu.ua). Regarding participation in the WEB conference, organizers will send instructions for setting up the relevant software directly to participants a week before the conference.

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Technical Secretary: Kosei M.P., Romanenko O.O.

Requirements for formatting conference materials:

1. Abstracts of presentations should be submitted as a file, with a content of **one or two full pages** of A4-sized text.
2. Margins: top, bottom, left, right - 2.0 cm.
3. Font: **Times New Roman**, font size - **14**, line spacing - **1.0**.
4. Working languages: Ukrainian and English.
5. The title of the presentation - **IN CAPITAL LETTERS** symmetrically centered.
6. Above the title, to the **right, in italics** - initials and last name of the author(s) and supervisor, academic degree and title, position, place of work.
7. Annotation in **italics**, up to **50** words.
8. **Single** spacing - text of the abstracts with an indent of **0.9** cm.
9. If necessary, a list of references is printed in accordance with the requirements of the state standard and must include in-text citations **in square brackets**. Additionally, **references** to figures and tables are required (e.g., **Table 1** and **Fig. 1**).
10. You can find an example of abstract formatting below.

ORGANIZATION OF THE EDUCATIONAL PROCESS USING MODERN WEB TECHNOLOGIES

The prospects of applying server-side web technologies, such as C++, Apache PHP, Asp.NET MVC, Node.js, for high-load educational systems are analyzed. A characterization of Node.js is provided, along with a comparison of its performance with other technologies.

At present, the issue of the lack of convenient software for students and teachers is relevant in our country. This particularly concerns scheduling systems, journals, and exam management...

Node.js is an open-source platform for writing the server-side of web applications in JavaScript, created by Ryan Dahl [1]. It is designed for the isolated execution of high-performance network applications in JavaScript. The platform is not limited to creating server scripts for the web; it can also be used to create regular client and server network programs. To execute JavaScript code, it uses the V8 engine developed by Google...

In Table 1, an analysis of the performance of various technologies (programming languages) for creating web applications is provided. The testing was conducted on a computer with a Core 2 Duo E8400 (3 GHz) processor and DDR2 800 MHz RAM.

Table 1 – Execution Time of Programs on Different Web Technologies

Technology	Volume of Input Data				
	200k	400k	600k	800k	1000k
C++	0.91	1.94	3.08	3.96	5.05
Node.js	1.35	2.75	4.02	5.57	7.29
ASP.NET	1.52	3.39	5.21	7.13	9.21
Apache(PHP)	1.65	3.5	5.52	7.37	9.57

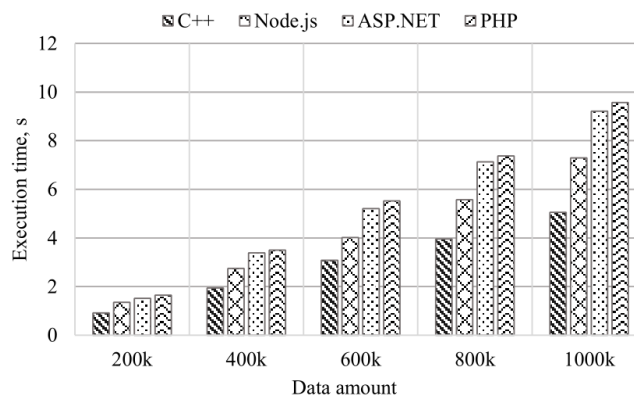


Fig. 1. Performance Diagram

CONCLUSIONS

Thus, Node.js is a relatively new technology on the Internet. It has attractive functional features, such as non-blocking operations of asynchronous input/output. This technology provides higher speed (approximately 24%) compared to PHP, but its widespread adoption is currently limited by its high cost.

REFERENCES

1. Official Node.js Website. URL: <https://nodejs.org> (accessed on: 01.11.2024).