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One Click Web: AI-Based Website Builder

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ABSTRACT: The rapid advancement of artificial intelligence has transformed the way websites are designed and developed by reducing manual effort and simplifying the development process. Traditional website development requires knowledge of programming languages such as HTML, CSS, and JavaScript, along with considerable time and technical expertise to create responsive and visually appealing web pages. This paper presents OneClickWeb, an AI-based website builder that enables users to generate customized and responsive websites from natural language prompts. Instead of manually writing source code, users can describe their website requirements in simple language, and the system processes these instructions using an AI model to generate the corresponding website structure and code. The proposed system integrates React.js for the frontend and Node.js with Express.js for backend services, providing an interactive and userfriendly environment for website creation. The platform also incorporates project management functionalities that allow users to preview, edit, save, retrieve, and manage previously generated websites through a unified interface. By combining AI-assisted code generation with modern web technologies, OneClickWeb aims to make website development more accessible to students, beginners, freelancers, and small businesses while reducing development time and effort. The modular architecture supports future enhancements, including automated website deployment, advanced customization, real-time collaborative editing, and multilingual website generation. This work demonstrates the potential of artificial intelligence in simplifying website development and providing an efficient approach to creating websites without requiring extensive programming expertise.

KEYWORDS: Artificial Intelligence, AI-Based Website Builder, Website Development, React.js, Node.js, Express.js, Generative AI, Natural Language Prompts, Prompt Engineering, Responsive Web Design.

I. INTRODUCTION

Artificial Intelligence (AI) has become one of the most influential technologies in modern software development, enabling automation and reducing manual effort. Recent advancements in Generative AI and Large Language Models (LLMs) have introduced new possibilities for transforming natural language instructions into executable code. Traditional website development requires knowledge of HTML, CSS, JavaScript, and other web technologies, making the process time-consuming and technically challenging for beginners.

This system aims to simplify website creation using an AI-based website generation technique. The proposed OneClickWeb platform enables users to generate responsive websites by describing their requirements through natural language prompts. The system processes these prompts using an AI model to generate the corresponding website structure and source code. It integrates React.js for the frontend and Node.js with Express.js for backend services, allowing users to preview, edit, save, and manage their generated websites through an interactive dashboard.

Many users, including students, freelancers, and small businesses, require an accessible solution for creating customized websites without extensive programming knowledge. Existing template-based platforms may limit flexibility, while AI coding tools may require additional manual integration. OneClickWeb addresses these challenges by combining AI-assisted website generation with project management in a unified application. The platform can reduce development effort and support rapid website prototyping.

II. LITERATURE SURVEY

Recent advancements in Artificial Intelligence have significantly influenced software development by enabling automated code generation. Large Language Models (LLMs) can understand natural language instructions and generate source code for various programming tasks. Existing website development platforms such as Wix, Squarespace, and

Webflow provide predefined templates and drag-and-drop interfaces to simplify website creation. However, these platforms may limit customization and flexibility.

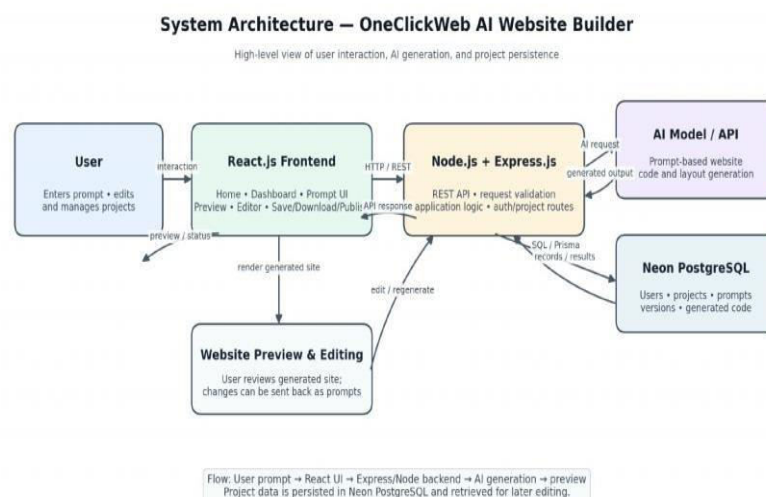
AI-powered development tools such as GitHub Copilot, Cursor, Bolt. New, and Lovable assist developers in generating code, user interfaces, and application logic from textual instructions. These tools reduce manual coding effort but may require additional modifications and project management. Generative AI provides opportunities for creating customized websites directly from user requirements.

The proposed **OneClickWeb** system combines AI-assisted website generation with project management in a unified platform. The system uses React.js for the frontend and Node.js with Express.js for backend services. Users can generate responsive websites using natural language prompts and preview, edit, save, and manage their projects through an interactive dashboard.

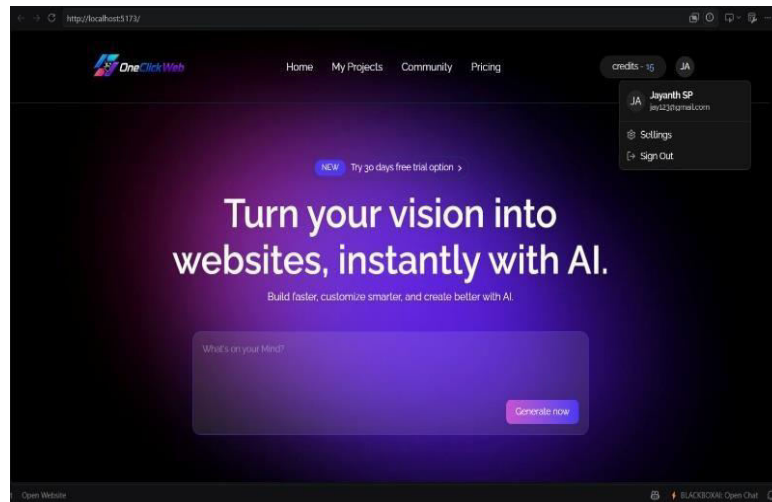
III. METHODOLOGY

The proposed OneClickWeb system uses Artificial Intelligence to generate websites from natural language prompts. Users describe their website requirements, and the AI model processes the input to generate the corresponding website structure and source code. The system uses React.js for the frontend and Node.js with Express.js for backend processing. The generated website is displayed for preview, allowing users to review and modify the output. The system processes user prompts through the backend, communicates with the AI model, and returns the generated website to the frontend. Users can preview, edit, and save their projects through an interactive dashboard. The system also supports project management, allowing previously generated websites to be retrieved and modified whenever required.

IV. SYSTEM ARCHITECTURE

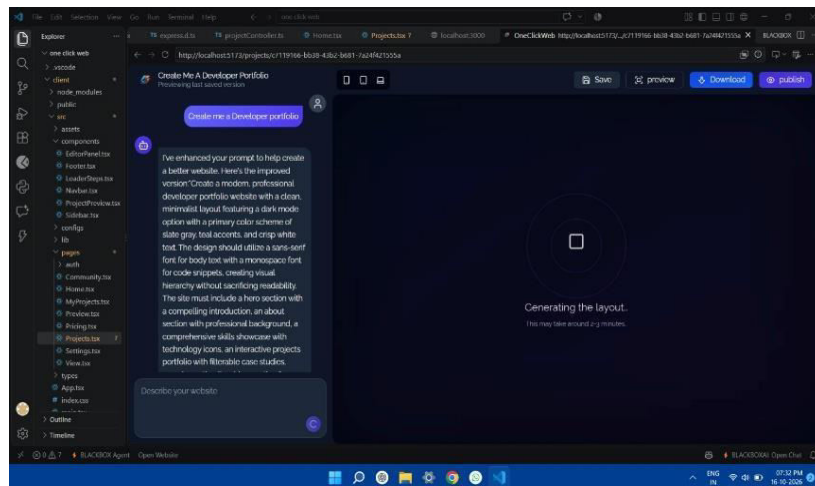


V. EXPERIMENTAL RESULTS



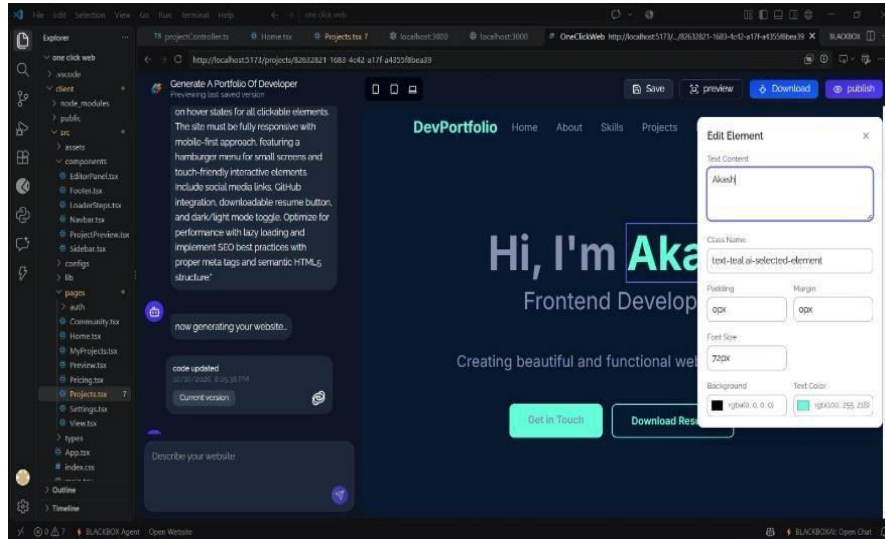
(a)

Fig.(a). AI Website Builder Home Interface: The platform provides an intuitive dashboard where users can enter natural language prompts to generate websites, access their projects, and explore available features.



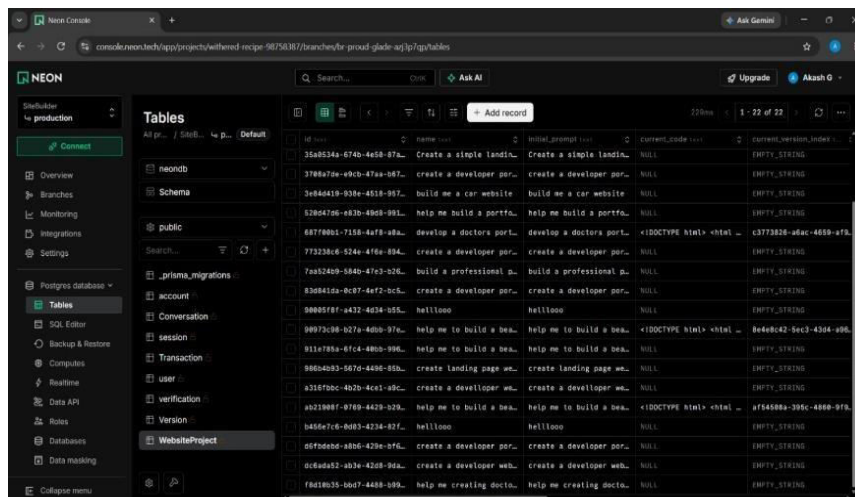
(b)

Fig. (b). AI-Powered Website Generation in Progress: The system refines the user's natural language prompt and initiates automated layout generation, demonstrating the prompt-processing and website creation workflow.



(c)

Fig. (c). Interactive Website Customization Interface: The platform allows users to modify generated website elements, including text content, styling, spacing, and font size, providing greater control over the design and personalization of AI-generated websites.



(d)

Fig. (d). Database Management of Generated Website Projects: The Neon PostgreSQL database stores website project records, including user prompts and generated code, enabling persistent storage and retrieval of projects for future editing.

VI. CONCLUSION

This paper presents OneClickWeb, an AI-based website builder that simplifies website development by generating responsive websites from natural language prompts. The system integrates Artificial Intelligence with React.js, Node.js, and Express.js to provide a user-friendly platform for website creation. It allows users to generate, preview, edit, and manage websites through a unified interface, reducing manual coding effort. The modular architecture supports future enhancements, including automated deployment, advanced customization, and real-time collaborative editing. The

proposed system demonstrates the potential of AI-assisted website generation in making web development more accessible and efficient for students, freelancers, and small businesses.

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