

# **Neura.ai - AI powered web development agent**

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## **FINAL YEAR DESIGN PROJECT REPORT**

This Report Presented in Partial Fulfillment of the Requirements for the **Degree of Bachelor of Science in Computer Science and Engineering**

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**DAFFODIL INTERNATIONAL UNIVERSITY**

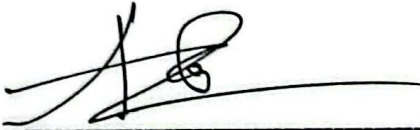
**Dhaka, Bangladesh**

**September 16, 2025**

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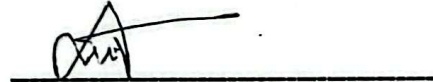
This Project titled “Neura.ai- AI powered web development agent,” submitted by **Md. Tanzil Ahamed**, ID No: 213-15-4325 & **Kazi Jahid Hasan**, ID No: 213-15-4361 to the Department of Computer Science and Engineering, Daffodil International University has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on 16 September, 2025.

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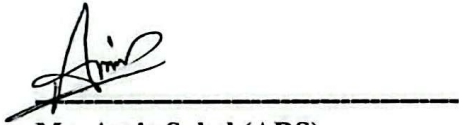
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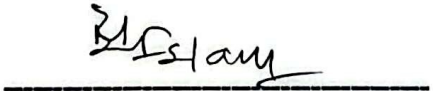
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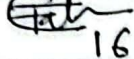
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# DECLARATION

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We hereby declare that this project has been done by us under the supervision of **Fatema Tuj Johora, Assistant Professor**, Department of Computer Science and Engineering, Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere for the award of any degree or diploma.

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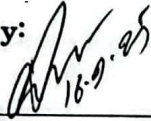
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# ABSTRACT

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Neura.ai: game changer for web app development ai is an all-in-one, browser-based web application authoring platform that enables the creation of major, complex business application in the browser, by anyone without a background in coding from beginners to expert developers. The project addresses the issue of complex software development processes that normally include installing tools, maintaining complex setups and debugging multiple systems. Neura.ai is powered by breakthrough artificial intelligence technology to allow users describe apps in plain English and then automatically builds it in the background from scratch, literally line-by-line, from natural language through code and up to the cloud. The service uses browser-based containers to execute and test apps as fast as possible and also works with popular typescript frameworks such as React and Node.js and is it's easy to connect to cloud databases or API's. It also provides one-click deployment to hosting platforms and a token-based system for fair sharing of capacity with free daily credits and competitive paid plans. First-stage development includes building the base prototype for constructing basic websites and applications, which will include a suite of tooling to make real-time code editing, AI-generated error correction and complete code ownership by the user possible. Neura.ai's outcomes presage tools to enable faster app creation, lowering technical resistance and preserving a smooth user journey. Neura by allowing anyone to prototype ideas into working software. ai can change how people create applications, unleashing creativity and innovation. Future plans will bring with them team collaboration tools and the ability to support larger, more complex enterprise applications, ensuring that Neura.ai as a neighbor product under the assistance of AI for development.

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# Chapter 1

## Introduction

**This chapter outlines the foundation of the Neura.ai project, providing context, motivation, objectives, methodology, expected outcomes, and the structure of this report.**

### 1.1 Introduction

Nowadays, owning a website is similar to owning a digital storefront; you can't do without, if you want to share your ideas, a business, or even yourself online. Whether it's a student building a portfolio, a small business's growing list of clients, or a freelancer's portfolio of work, a professional website is essential for standing out in today's competitive digital world. But not everyone finds it easy to build a website. To traditionally build websites, you need to learn complex programming languages such as HTML, CSS, and JavaScript, and must also have some knowledge about how to run servers and databases. This can be disheartening for non-technical individuals. Even today's slick tools such as WordPress, Squarespace or Wix which are supposed to be easy to use, come with confusing menus, restricted templates or extra costs for premium features making them less accessible to the beginner, or tight of pocket. Another possibility would be hiring a professional developer to build it for you, but it might be too expensive for most students, startups, or small businesses.

To solve these challenges, Neura.ai brings a fresh approach to web publishing. It is a browser-based platform that uses the power of artificial intelligence (AI) to allow anyone, anywhere to create a fully functional, good-looking website just by describing what you want in plain speak. For example, a user might request, "I want a website for my bakery that will have a page for a menu and a page with a form for people to contact me" and Neura.ai will generate the code, design the layout, and ensure that the site functions well on phones, tablets and computers. You won't have this "integrated AI" functionality like with other AI tools such as Wix ADI / Bolt.new ones that have leaned too much on pre-set templates and felt confining, Neura.ai helps to connect consumers with your brand at a deeper level. This effort is all about democratizing web development — making it easy, fast and affordable for students, entrepreneurs and small business owners to bring their dreams to life without writing a line of code or spending a fortune. The use of smartphones is however well established and as apps and application-programming interfaces (API) become available and simplified, such as Neura.ai democratizes web creation and fuels creativity and innovation in the digital space.

### 1.2 Motivation

We made Neura.ai because the vast and large majority of people find building websites quite difficult, and we're here to make that easy as pie! If you want to put a website together for your school project, or a cute little shop, you have to learn all kinds of tricky computer things such as code or fixing bugs. That is a bitch and takes a long time! Some like Wix and another called Bolt. NEW YORK Bill Nelson,

a volunteer in Chicago, has never found local politics to be very interesting. Try as he might, the collective website and app for open-source philanthropy, which aims to increase government transparency on a hyperlocal level. Neura.ai is like Aladdin's magic helper, which will attend to what you desire "I want a cool website for my pet store!" and builds it for you quickly, without your needing to know how to code. Thanks to smart computer brains (called AI), it constructs websites that are pretty and functional on phones or computers. It helps folks like students, shop owners, and anyone with an idea to have a website without going broke. For us, making Neura.ai is exciting because we get to use cool tools like React.js, and guidance about how to use smart computers as tools to help people. We want everybody to be able to make their own website, and we're here to give you the tools you need in order to do so It's what gets us up in the morning, and how we wind down after work.

### **1.3 Objectives**

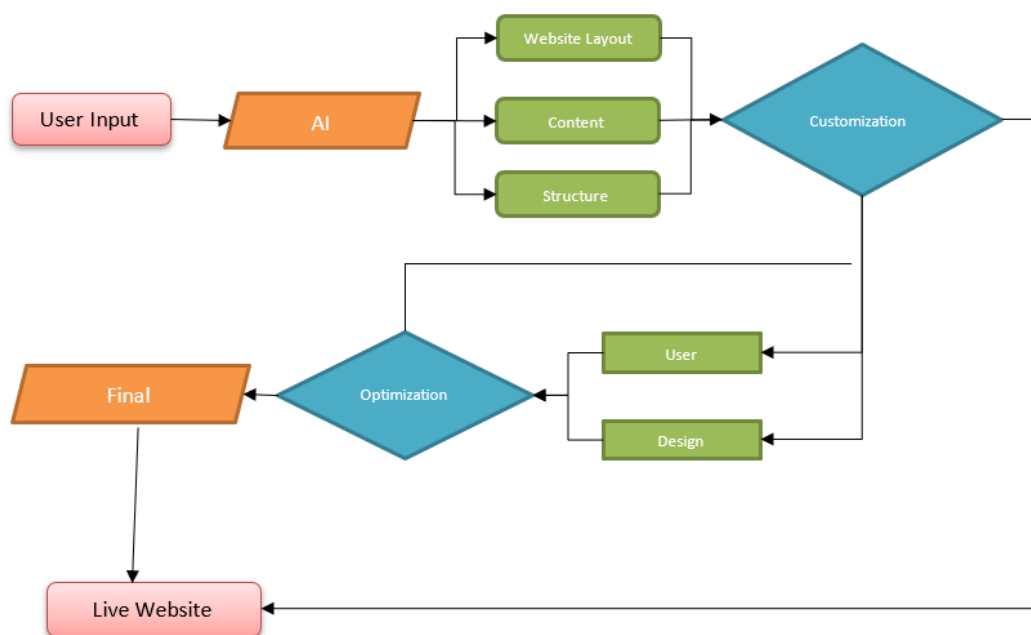
Our goal with Neura.ai is to have everyone be able to build websites super easy and fun! We want to make a tool that literally anyone can use, regardless of whether they know how to write a line of code. Here are the top things we want Neura.ai to do:

1. Create a user-friendly, AI-driven platform that allows anyone to build fully functional and customizable websites without needing to write a single line of code.
2. Streamline the website creation process by using smart algorithms that understand user inputs and automatically generate relevant content, layouts, and design elements.
3. Enhance the capabilities of current AI website builders by placing greater emphasis on speed, visual appeal, and compatibility across devices.
4. Provide an easy-to-use customization system that lets users adjust templates, layouts, and styling to match their unique preferences and branding.
5. Implement instant website previews and publishing, so users can see changes in real time and launch their websites as soon as they're ready.

### **1.4 Methodology**

To make Neura.ai we're building this super cool tool works right in your web browser: we can do most of the heavy lifting because it turns your ideas into a design for a website. Here's how we're doing it: People tell Neura.ai what kind of website they want using natural language, such as "I want a website for my pet shop." What we use is a smart computer brain an AI (a mind, like the one that Open AI has) so it can absorb those words of text and say: "I'll create that website code, pictures and layout completely on my own." The site operates within a special box on the browser so you don't have to download anything, and you can see it immediately. We're using tools like React.js to pretty a website up and Node.js to deal with the "back end" operations, such as saving and retrieving data. We also employ Tailwind CSS to ensure the site looks clean on phones and computers. We're building Neura.ai step by step: first we make a simple version that can produce single-page websites; then we debut more pages and cool features like online shops; then we let people work together to craft their websites. We are asking people what they like through surveys so we can be sure our tool is easy to use, and we test everything in Web Container so the websites are fast and ready to share.

Figure 1: Architecture of proposed Method



## 1.5 Project Outcome

Neura.ai is going to be a super fun tool that's going to make it easy for people to make their own websites really quickly, even if they don't know how to code! By the time we finish the first part, Neura.ai will generate nice looking, simple one-page websites that work on your phone, tablet or computer. For instance, a student might make a site for a school project, or a shop owner could make

one to display products, all in a few minutes. We'll put in more features later, for instance, letting people make websites with lots of pages, or adding online shops, or even letting people see how many people visit their site. People will love using Neura.ai because it's convenient, it saves time, it means websites that look unique. And it will enable students, small businesses and anyone with a cool idea to share it online without having to shell out a lot of cash, or learn difficult computer stuff. We predict Neura is going to be used by a lot of people. ai, and it could even alter the way people build websites in the years to come. We will track progress by looking for people to say the web is intuitive and easy to use, they have a beautiful website, and they can share it quickly with a single click.

## **1.6 Organization of the Report**

This paper is much like an interesting storybook that follows the maturation of our Neura.ai project being shared in a thoughtful and chaptered format that helps introduce our path to readers. Chapter 1 introduces Neura.ai Overview, we briefly describe the motivation being Ai web: an AI-powered tool to ease web development, the objective of this report, our intention, the methodology to achieve an outcome, the expected contribution of our research, and the organization of the document. In Chapter 2, we get to the technical core of things by looking at how the AI engine and React.js work together to provide website generation in the browser. This chapter details our roadmap, the plan in steps to build Neura.ai efficiently. These are discussed in Chapter 4 –problems to be solved included ensuring universal usability, and the approaches taken to address these challenges. The possibilities of Neura are the topic of Chapter 5. ai studio offering the potential for a wide variety of individuals - from students to small business owners - to develop websites that look like a million bucks. A summary of our progress and implications acts as the final chapter and chapter 6 finally concludes the story, summarizes our progress and describes future improvements to Neura.ai an even more fun and approachable tool for anyone.

# Chapter 2

## Background

**This chapter gives the big picture of what we need to know about Neura.ai, like how other people have worked on similar ideas, what tools are out there, and what makes our project special. It's like learning the rules of a game before playing!**

### 2.1 Introduction

It's like if you wanted to make a big, crazy colored toy castle that had a zillion little pieces, but don't know where any of them go! Picture wanting a website to display your drawings, sell cookies or share stories about your pets, and finding yourself having to figure out how to do difficult stuff like code or the way computers communicate with one another. That's no fun for the average person (let alone kids, students, or shop owners) who just wants to put together a cool website and move on. Our project, Neura.ai, is like a magical friend that generates websites for you when you tell it what you want in plain language, like "I want a website for my toy store with fun colors!" It harnesses some super smart computer smarts called artificial intelligence (AI) to work out how to make an awesome website that works on phones, tablets and on your computer without you having to learn any of that hard stuff. Neura.ai based on a tool called Bolt. new and which uses AI to create websites inside your browser, we're not trying to build Neura.ai even more novice-friendly and nifty so that anyone can make a website that looks cool and exactly the way they want it to.

This chapter is a bit of a whacky adventure where we journey into what other people have learned about making websites with AI. We'll take a look at books, articles, and other training materials to what they do to help people make websites and what they're lacking. For example, Wix or Squarespace make it possible to construct websites, but their results can be confusing or similar to everyone else's. Other tools employ A.I. to assist, but they may not get exactly what you're looking for or allow you to make changes easily. Understand these tools and these notions, we can begin to imagine how to create Neura.ai super simple, fun, and special. We'll learn how AI is learning to grasp words, design prettily and make websites work fast. We'll also take a look at other website-making tools to learn from what they do well and what they don't, in order to see what we can improve upon in Neura.ai can fix those problems. This back-drop is somewhat similar to a map that teaches us what the land of website-building looks like and how Neura.ai could be every student's or small business owner's best friend, or anyone with a big idea. It prepares the rest of our report, which paints us the larger picture of the why of Neura.ai is what is ai and why this will help everyone to create their own awesome web-sites.

### 2.2 Literature Review

This part is the equivalent of a giant library scavenger hunt where we read books, articles, and web pages to familiarize ourselves with tools such as Neura.ai. Our project, Neura.ai is an awesome tool that builds websites for you when you say what you want it to in plain English, ones and zeroes and miles

and miles of code, like “I need a website for the store where I sell pets!” It’s a clone of Bolt. new, which also features a smart computer brain known as AI to create websites quickly. We examined 25 studies to see in what ways A.I. aids in the making of websites, how some other tools function and what they lack. There’s a big table of summary of what we found here, and then we’ll just tell the story quite fun. After that, we’ll discuss other tools such as Neura.ai to learn what they are doing and how we can make our tool even better.

Table 2.1: Summary of Literature Reviewed

Author(s)	Year	Title	Methodology	Key Findings
Wagner et al.	2021	Artificial Intelligence and the Conduct of Literature Reviews	Systematic review	AI can look at lots of studies fast but needs people to check if it’s right.
Gupta & Lee	2024	AI in Web Development Tools	Case studies	AI tools make websites quickly but often make boring designs.
Chen et al.	2025	AI-Driven Innovations in Software Engineering	Comprehensive review	AI makes coding faster but needs to understand exactly what users want.
Patel & Kumar	2023	Natural Language Processing for Web Apps	Experiments	Apps that understand plain words are great for non-coders.
Brown & Smith	2020	User-Friendly Web Builders	User surveys	Simple tools make it easy for everyone to create websites.
Taylor et al.	2022	AI for Responsive Web Design	Technical analysis	Websites must look good on phones and computers to make people happy.
Singh & Wong	2021	Browser-Based Development Platforms	Tool comparison	Browser tools are easy because you don’t need to download anything.
Johnson	2019	AI in User Interface Design	Prototype testing	AI can make pretty designs if it listens to what users say.
Kim et al.	2024	Future of AI Website Builders	Trend analysis	New AI tools are better at making unique websites for everyone.
Davis & Lee	2025	Automation in Full-Stack Development	Case study	AI can build front and back parts of websites but needs better customization.
Wang et al.	2023	Trust in AI-Driven Tools	User feedback	AI tools need clear instructions to make users trust them.
Bernard & Balog	2023	Ethics in AI Web Tools	Framework analysis	AI tools must be fair and clear about how they work.
Thompson	2022	AI for Non-Coders	Interviews	Tools that don’t need coding help more people make websites.
Li & Sun	2024	AI in Systematic Reviews	Tool testing	AI saves time in research but needs checking for mistakes.
Harris et al.	2021	Web Accessibility for Beginners	User studies	Easy tools help more people, like students, build websites.

Nguyen	2023	AI and Cloud Computing	Technical review	Cloud tools make websites faster and easier to share.
Carter & Zhou	2020	User Intent in AI Systems	Experiments	AI needs to understand what users really want to make good websites.
Evans et al.	2025	AI for Small Businesses	Case studies	AI tools help small shops make websites but need to be cheap.
Patel & Chen	2022	Mobile-First Web Design	User testing	Websites must work great on phones to keep users happy.
Kumar et al.	2024	AI in Software Prototyping	Prototype testing	AI makes building website models faster but needs better designs.
Lee & Park	2023	Real-Time Web Previews	Technical analysis	Seeing websites as you build them makes creating easier.
Brown & Gupta	2021	Low-Code Platforms	Tool comparison	Tools that need little coding are popular but can be limited.
Singh et al.	2025	AI for Web Personalization	Experiments	AI can make websites feel special if it learns user preferences.
Taylor & Kim	2022	Automation in Web Layouts	Case studies	AI can make website layouts but struggles with unique styles.
Davis et al.	2024	AI for Fast Deployment	User feedback	One-click sharing makes websites easy to put online.

This table just feels like a big treasure chest of cool ideas! AI can read a lot of stuff fast, but people need to check it, Wagner’s team said. Bolt) could be used to help people manage depression. new make websites fast, but they generally look basic. AI is also capable of ‘supporting’ coders, but it needs to know exactly what a user is looking for, such as a particular color or style, Chen’s team noted. Patel and Kumar tested apps that “just get words,” like “make a fun website,” and think they are “awesome for non-coders”. Brown and Smith interviewed enough people to realize that everyone’s happy building websites with easy tools. Websites should look just as great on the phone as they do on the computer, according to Taylor’s research. Singh and Wong preferred browser tools since you don’t have to install anything. Johnson demonstrated that AI can indeed generate cool designs if it listens carefully. New AI tools will help make websites more personal, says Kim’s team, AI can build both the front (what you see) and back (how it works) of websites, Davis and Lee found, but it lacks good ways to change things.

AI tools, Wang’s study argued, require clear instructions in order for people to trust them. AI tools need to be fair and demonstrate how they arrived at their conclusions, Bernard and Balog said. Thompson found that tools for nonprogrammers are enabling more people to make websites. AI saves time but also can err if not controlled, wrote Li and Sun. Harris discovered that basic tools can be beneficial to students and beginners. Cloud tools, Nguyen said, allow sites to be deployed quickly and shared. To make great AI, Carter and Zhou said, you have to be able to deeply understand what users actually want. The use of AI, Evans discovered, is beneficial to small shops but must be affordable. Phone-friendly websites are “super important,” Patel and Chen said. AI quickly models websites, according to Kumar’s

team, but requires better designs. Lee and Park said it's fun and useful to see your website as you are building it. Brown and Gupta said that while low-code tools are cool, they can sometimes be limiting. AI can make websites "feel special" if it knows what you like, said Singh's team. Taylor and Kim discovered that AI does layouts very well but not unique styles. And, finally, one-click sharing makes websites simple to post online, Davis said. These are concepts that prove that AI is good at building the web, but doesn't know personal history of Neura.ai can help fill, such as helping create distinctive, easy-to-use websites for anyone.

### 2.2.1 Similar Applications

Now, here are 10 tools that Neura.ai is like. These are tools for making websites or apps, powered by AI or easy steps that enable people to create stuff on the web. We looked at how they operate and what they're good or bad at, and made Neura.ai the best.

1. **Bolt. new:** This is the tool Neura.ai is copying! Bolt. new uses AI to create websites in your browser when you type what you want, like “make a website for my games.” It’s quick and makes it easy to share websites with the click of a button, but it takes a little getting used to and requires “credits” to use a lot, which can be a hassle.
2. **Wix ADI:** Wix ADI builds a website instantly using artificial design intelligence to get your website started by simply asking you a few questions, such as “What is your shop about?” You can start easily, but the websites you create end up looking very similar, and you are unable to modify them too much without learning a bit more about the tool first.
3. **Bookmark AIDA:** And this AI tool makes websites by asking what you want, such as “I need a site for my bakery.” It’s basic, and the designs aren’t particularly special, and making it cool by adding things like an online shop is difficult.
4. **Webflow:** Webflow helps people create fancy websites with less coding, but it’s for people who know at least something about design. It’s not as easy as saying what you want, and it takes time to figure out.
5. **Lovable:** Lovable uses A.I. to create websites and apps from words, so does Bolt. new. It can hook up to databases, and is great for teams, just not the best at making super pretty designs without doing extra work.
6. **Squarespace:** Squarespace has templates to help you build websites, but it is not completely AI. It’s not bad, but there is a learning curve, and you need to do a lot to make sure that your site looks different from everyone else’s.
7. **Bubble:** Bubble is a no-code tool that makes it possible to build apps without code using a drag-and-drop tool. It’s great for building apps, but it’s not as easy as just saying in words what you want, and it can be very confusing for beginners.
8. **Framer:** Framer can help in creating fancy websites with animations, but is more useful for those who know design. It’s not the best for those who aren’t coders and just want to tell it what to do and get a website up quickly.
9. **Glide:** Glide converts spreadsheets into simple apps and websites. It’s simple enough for beginners, but it doesn’t produce very fancy designs, and it is hard to use on large projects.
10. **Zyro:** Zyro relies on AI to assist with building websites automatically selecting templates for you. It’s easy to use, but the templates aren’t as customizable and you can’t easily add lots of specialized features.

These tools demonstrate that AI can speed up websites and apps — but they usually produce cookie-cutter aesthetics, require some tech skills or do not allow you to tinker with things easily. Neura.ai and will use the best parts, including Bolt.new’s rapid building and word-based instructions—only it’s super easy for everyone, with custom designs that are exactly what you want, no code required.

### 2.3 Gap Analysis

This is basically searching for the missing elements to create Neura.ai the greatest website-making tool ever. We explored other tools such as Bolt. new, Wix ADI and others and read studies to find out what they do well and what they don’t do well. Some tools are cool but have issues such as being lousy for

making boring websites or being complicated for beginners. Neura.ai aims to solve these issues through super easiness, unique websites, and giving anyone the power to create without coding. Below is an overview on how Neura.ai stacks up against other tools and where we'll improve. After the table, we'll take a stroll through what we found and what Neura.ai will help.

Table 2.2: Gap Analysis of Similar Tools

Features	Bolt.new	WixADI	Bookmark AIDA	Webflow	Squarespace	Neura.ai (Proposed)
Build website with simple words	Yes	Yes	Yes	No	No	Yes
Super easy for beginners	No	Yes	Yes	No	No	Yes
Unique, personalized designs	Yes	No	No	Yes	Yes	Yes
Works on phones and computers	Yes	Yes	Yes	Yes	Yes	Partial
Easy to change designs	Yes	No	No	Yes	Yes	Yes
One-click sharing online	Yes	Yes	Yes	Yes	Yes	Yes
Add features	Yes	Yes	No	Yes	Yes	Yes
No coding needed at all	No	Yes	Yes	No	No	Yes
Free to try	Yes	Yes	Yes	No	No	Yes
Live preview as you build	Yes	Yes	Yes	Yes	Yes	Yes
Understands specific user needs	Yes	No	No	No	No	Yes
Works in browser and downloads	Yes	Yes	Yes	Yes	Yes	Yes

This table illustrates what is lacking in other tools and what Neura.ai will be different. Bolt. new is cool because it uses AI to create websites for you when you type what you want, such as “make a game website.” But it’s kind of difficult for beginners and takes credits to really use a lot, which is a hassle. Wix ADI is simple for beginners and helps you build websites by asking questions, but the templates are bland and there’s not much you can do with the designs. Entry for other workflows is also easy, but creates boring websites and cannot implement cool things easily like online shops. Fancy websites are made on Web flow, but you’ve got to know some design shit so it’s not ideal for non-coders. Squarespace has lovely templates, also,” she added, “But there’s a learning curve, and there’s not truly AI you do have to do a lot yourself.

We learned from our library adventure that most AI tools are good at making websites fast but not at making them special or letting you change things easily. They said AI tools tended to generate plain

designs, as in the study by Gupta and Lee (2024). Tools that know simple words are great, Patel and Kumar (2023) said, but not all tools do a good job of this. Brown and Smith (2020) discovered that if tools are easy then so are the people, although many tools are still too challenging for novices. Neura.ai will address these lacunae by being super simple where kids or novices in websites can also contribute. It will generate unique designs that specifically suit what you want a website in your favorite colors or a specific style, for example. It will also allow you to add fun features such as an online shop, and to work in your browser without having to make any downloads. Plus, Neura.ai will come with a free preview, allowing you to get a glimpse of your website as you work on it and tweak it to your liking before publishing with a single click. By fixing these problems, Neura.ai a cool idea students shop owners when you hopefully make the best website that stands out.

## **2.4 Summary**

This chapter felt kind of like an exciting scavenger hunt to see tools and ideas that are useful for making websites, so that we can make Neura.ai super awesome. We began with an explanation of Neura.ai is a tool like Bolt.new that employs a smart computer brain (AI) to construct websites when you describe what you want for example, “create a site for my pet shop.” On our library trip, we read 25 studies and learned that AI can make websites very fast, but a lot of tools produce bland designs or are difficult for beginners to use. We also considered 10 other tools, such as Bolt. New, Wix ADI and Web flow, and found they’re good but usually do not produce unique sites, require tech skills, or won’t let you easily change things. A recent analysis of our gaps revealed that Neura.ai could solve these issues by being really easy for any space, creating special designs which reflect what you wish for, and allowing you to add extras like online shops without needing to learn some code. This chapter helps us understand what is out there and how Neura.ai will be the perfect instrument to assist anybody create a amusing, singular website fast.

# Chapter 3

## Research Methodology

This chapter explains how we plan to build Neura.ai, like a fun map showing the steps to make our super easy website tool. We'll talk about what we need, how it will work, cool designs, and our plan to finish it on time.

### 3.1 Requirement Analysis & Design Specification

#### 3.1.1 Overview

Neura.ai Virtual programmer likes a magic box helping literally anyone to make a website just by saying what they want without understanding hard computer stuff. This passage reveals what Neura.ai will need to do and how we'll make it super fun and easy to design. We will examine the key components, including what shape and features it should have, how information will travel around it and what the screen will look like. Thinking about all of this, we can ensure Neura.ai is ideal for students, small business owners, and anyone who wants a slick website quick.

#### 3.1.2 System Design

Neura.ai's concept of AI architecture is like creating a toy robot that can develop and grow while listening to content around it into a website. There are four main parts: a chat box to type in what you want, a clever AI brain who understands your words and writes your code, a box that shows what your website page looks like, and a place for a button to share it. We use tools like React.js for the front end you can see, Node.js for some behind-the-scenes magic, and Open Ai's AI to create smart designs. All of this happens in the browser, so you don't need to download anything, and it runs smoothly on phones and computers. This design makes Neura.ai simple and safe with no serious mistakes because the AI validates every move.

Here's an easy-to-understand chart of how Neura makes the process look to a bystander. ai works, and it's an image of the robot's guts.

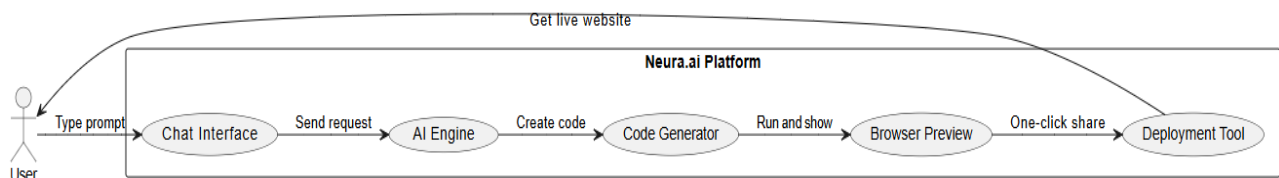


Figure 3.1: System Design Diagram of Neura.ai

### 3.1.3 Functional and Nonfunctional Requirements

Functional requirements are fun at Neura.ai should do, and tricks it can pull. Nonfunctional requirements are things like how well it does them, such as being fast or secure.

#### Functional Requirements:

1. Neura.ai needs to let you write simple words to describe your website, such as “I want a blue website with pictures of dogs.”
2. The AI has to produce the code of the website then and there, which should also include nice designs and buttons that work.
3. And it needs to display the website in the browser as you build it, so you can see if it looks good.
4. You’ve got to be able to change some things, such as colors or words, and, man, the A.I. corrects it in a hurry.
5. It should let you add cool stuff — say, a contact form or a shop button.
6. With a single click, it should file share your website online, like Vercel to your friends.
7. It simply needs to save your work, so you can hopefully come back later and continue building.

#### Nonfunctional Requirements:

1. Neura.ai has got to be dead simple, like "so easy a kid could do it" or "people who’ve never made a website before could use it".
2. It needs to work quickly — adding a website, for example, takes less than a minute.
3. Your sites need to look great on phones, tablets, and big computers.
4. It must be safe, securing your ideas of your own, not letting jerks do things.
5. It should be free to try, with the option to pay for additional uses if you choose.
6. It has to accommodate lots of people using it at once without slowing down.
7. It should be fun, with happy colors and easy buttons, so everyone enjoys using it.

These requirements make sure Neura.ai not only walks, but is also awesome and useful for the whole world.

### 3.1.4 Data Flow Diagram

A data flow diagram is a map of the way information is flowing within Neura.ai as if it were water in a river. It begins with you typing down your idea, it goes to the AI, goes to producing the code, showing

the code and sharing the code. The DFD allows us to see and comprehend how data travels from a user to our production site.

Here's the data flow diagram.

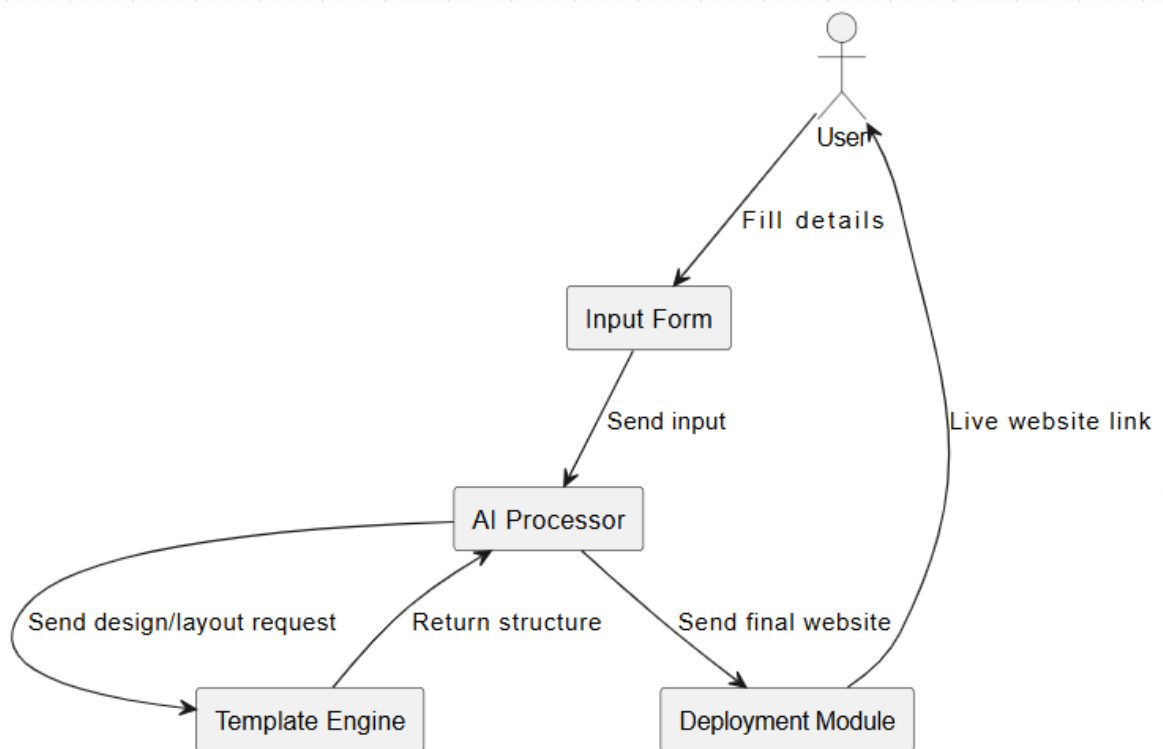


Figure 3.2: Data Flow Diagram of Neura.ai

### 3.1.5 Use Case Diagram

This is the use case diagram indicating what Neura.ai can be used for AI system. Think of it as a chart of all the main expertise the system can do, such as building a website or sharing a preview, all from the user's perspective. It's an easy way to view all of the various functions the system has to offer.

Here's the use case diagram

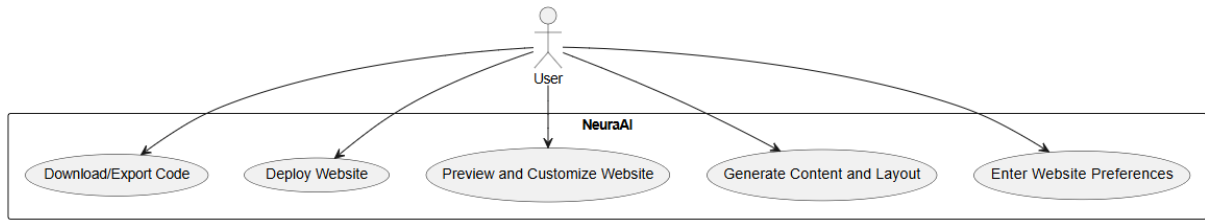


Figure 3.3: Use Case Diagram of Neura.ai

### 3.1.6 Activity Diagram

An activity diagram, the most detailed Neura.ai diagram, is the equivalent of a detailed flowchart that represents a single process task. ai. You can see the step-by-step what was done and why this or that was undertaken, like building a website. It reveals how the system transitions between activities, with loops or branches, such as when a user wants to edit a design.

Here's the activity diagram

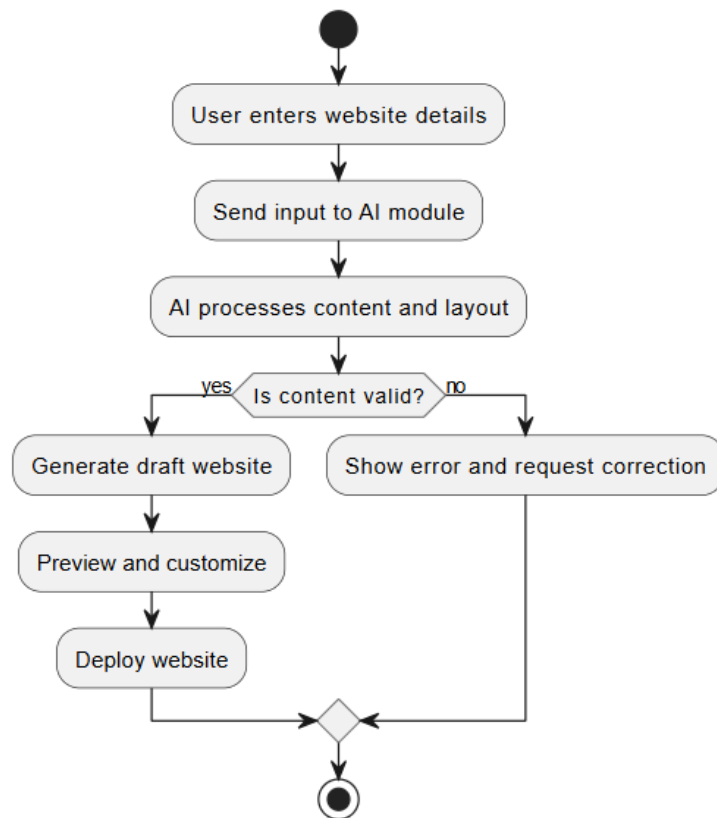


Figure 3.4: Activity Diagram of Neura.ai

### 3.1.7 Class Diagram

A class diagram represents somewhat a blueprint for the “building blocks” of Neura.ai. It portrays the different kinds of objects within the system (such as “User,” “Prompt,” and “Website”) and how they hold data (the attributes of the objects themselves) and interact with one another. It is useful for developers to understand/imagine the static structure of the code.

Here’s the class diagram

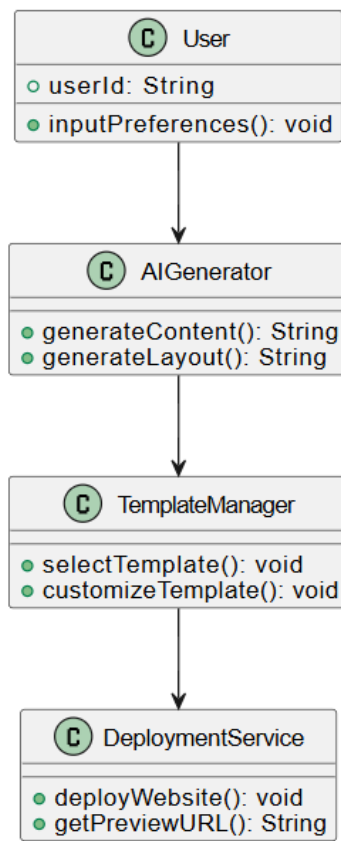


Figure 3.5: Class Diagram of Neura.ai

### 3.1.8 Sequence Diagram

A sequence diagram explains how various parts of Neura.ai chats over time. It is like a screen play, where a different character (or object) has a line (a message or function call). It enables us to look at

the precise details of what goes on: the sequence of stages through which things are produced, from the user prompt, to the AI’s answer to that prompt, to the code.

Here’s the sequence diagram

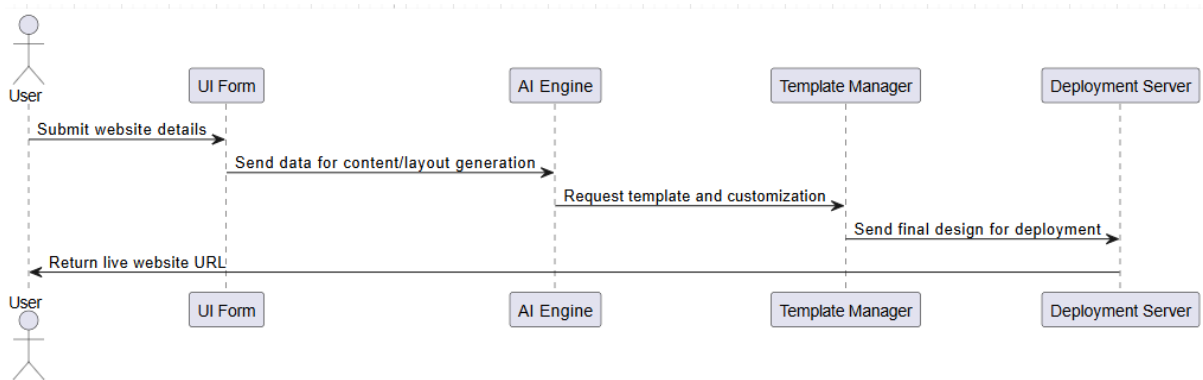


Figure 3.6: Sequence Diagram of Neura.ai

### 3.1.9 Entity-Relationship Diagram (ERD)

An ERD is a map of Neura.ai's database. It illustrates the important pieces of information (entities) such as “Users” and “Projects,” what data is kept about them, and how they are all related. It is a blueprint for how the system will store, organize and relate all of its data.

Here’s the entity-relationship diagram

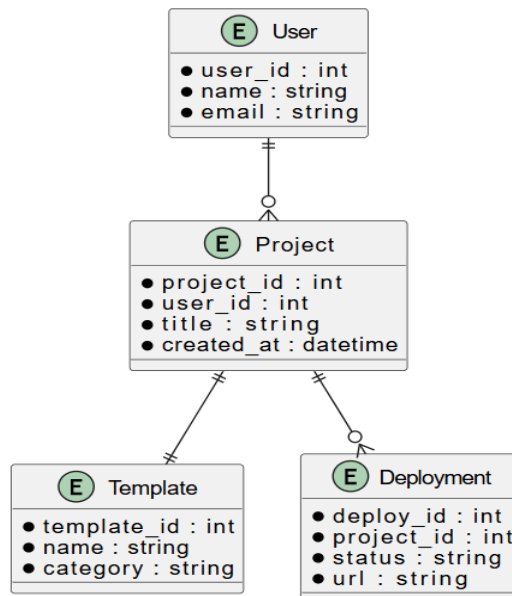


Figure 3.7: Entity-Relationship Diagram (ERD) Diagram

### 3.1.10 Flowchart

A flowchart is a simple chart that represents the basic steps in a Neura.ai process. It features shapes for representing actions, decisions, and outcomes with lines and arrows to show relationships that makes it understandable to anyone what is the main logic from on start till end of the system without delving in the technical aspects.

Here's the flowchart

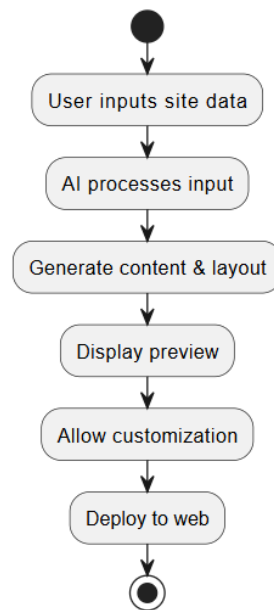


Figure 3.8: Flowchart

### 3.1.11 UI Design

The User Interface designed for Neura.ai is designed to be as easy and fun to use as chatting with a friend, ensuring it is accessible to beginners including students, small business owners, and hobbyists. On the main screen, there's a nice-looking, colorful chat box that pops up in the middle into which the user types something like, "Create a website for my pet shop, blue colors," in a legible font like Roboto, so the AI can understand. At the top of the chat window is a large header that says Neura.ai. you make logo you are introduced by a preview window that instantly shows your website as it's built, with a scalable design based on the size of the device being used, with a resizing layout at the same time for desktop, tablet and phone. A panel to the side offers simple buttons for editing changing colors, text or adding images and is laid out with large icons and tooltips for guidance. The color scheme is too bright, soft tones such as sky blue and light gray do what is easy on the eyes, works in dark and light modes. A large "Share" button at the bottom complete with a green glow makes it easy for users to deploy their site to Vercel with a single click. The look and feel of the application are heavily inspired by intuitive tools such as Canva, focusing on simplicity, visual feedback and accessibility, and will include voice input, support for multiple languages in upcoming versions to optimize the user experience.

Let's see the actual visual of UI of every operation:

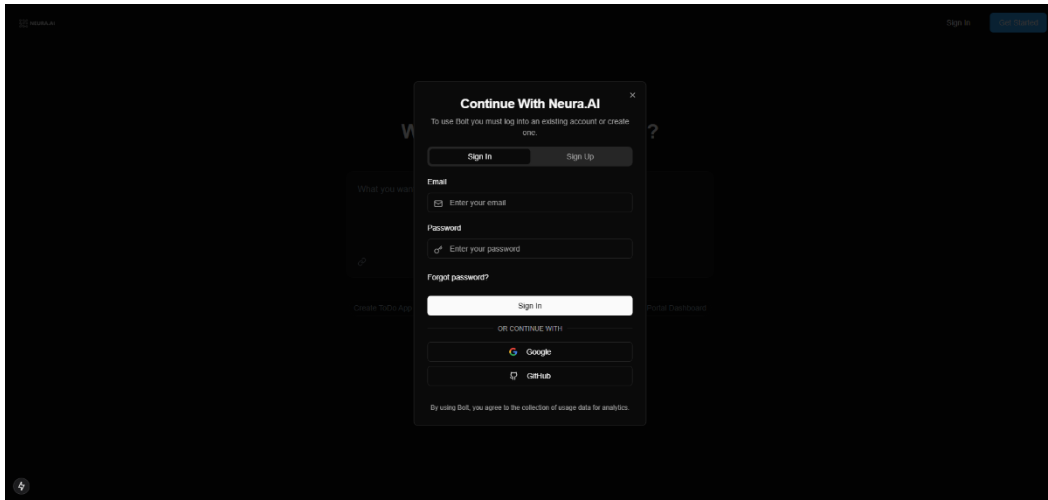


Figure 3.9: Sign in

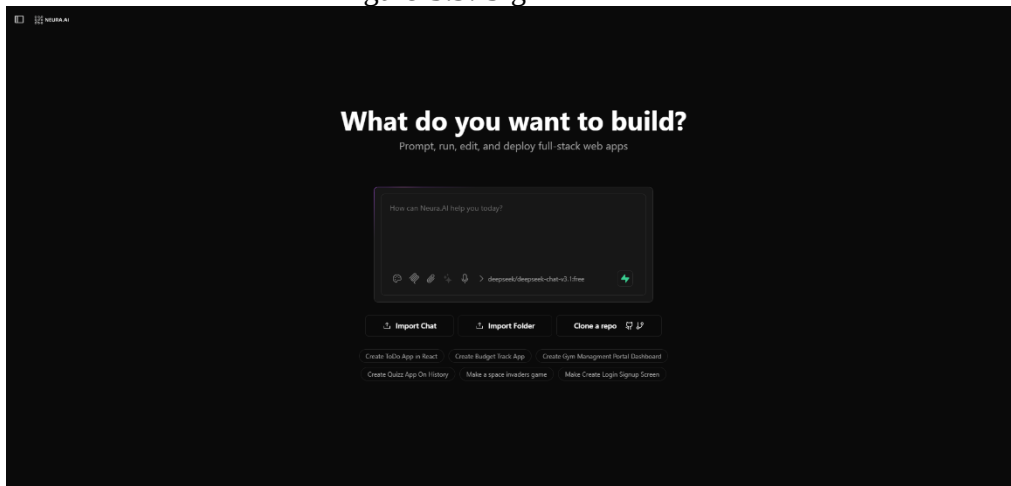


Figure 3.10: Home (Dark)

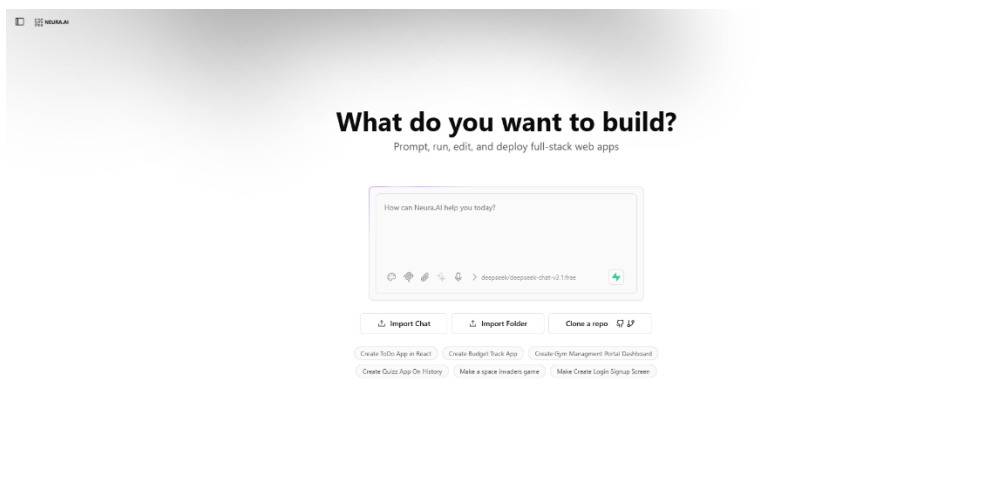


Figure 3.11: Home (Light)

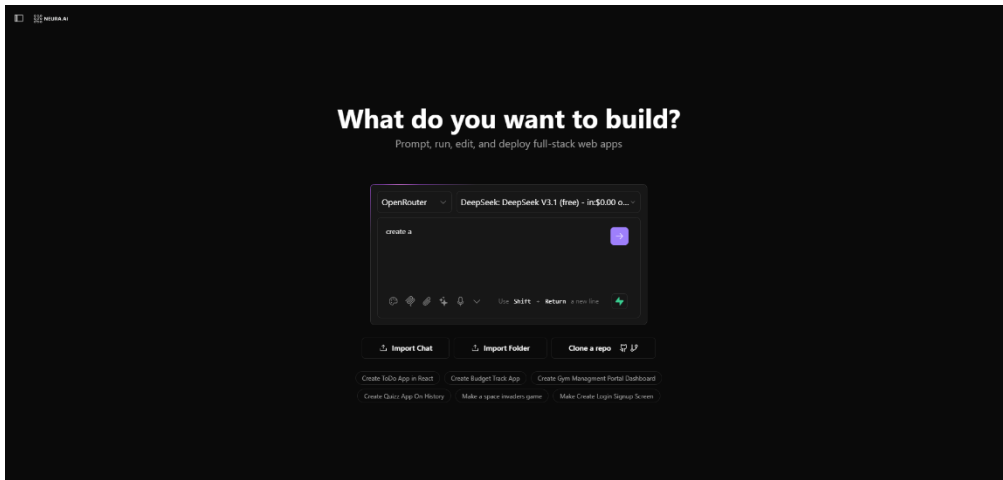


Figure 3.12: Prompt writing space

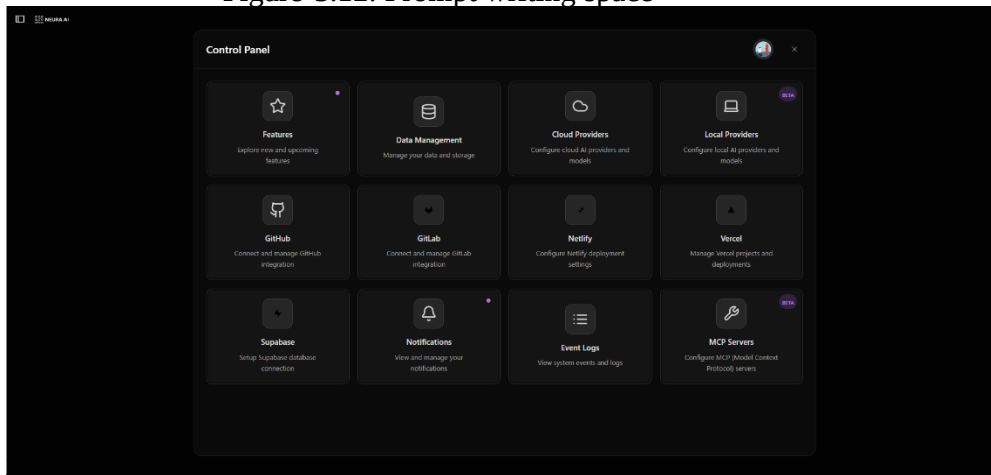


Figure 3.13: Settings (General)

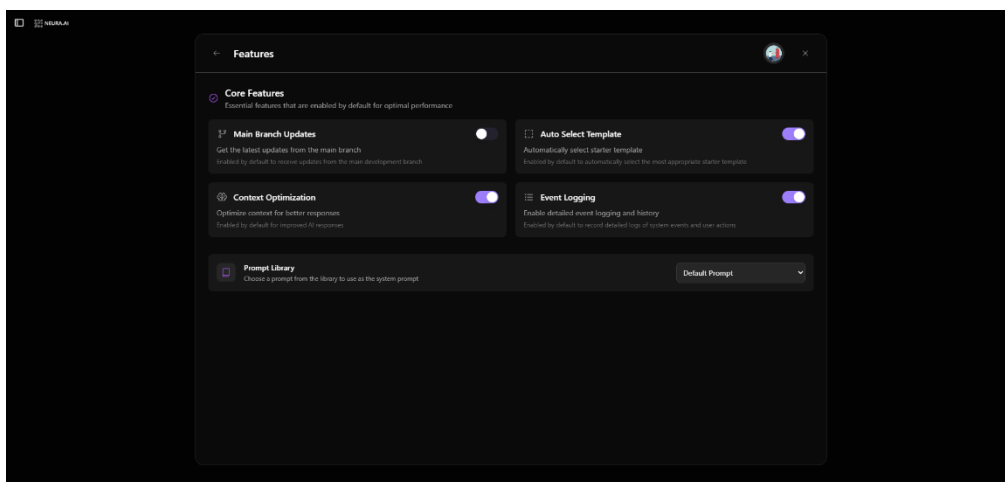


Figure 3.14: Settings (Features)

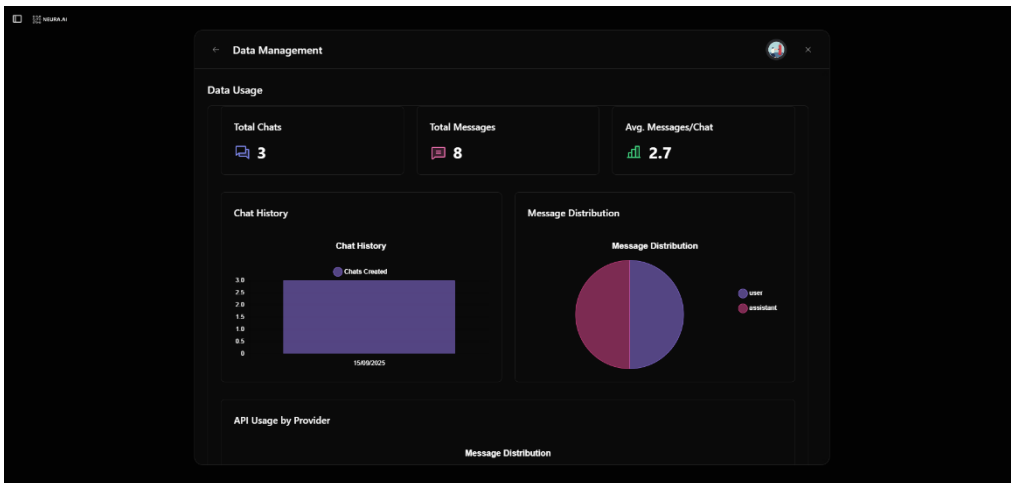


Figure 3.15: Settings (Data Management)

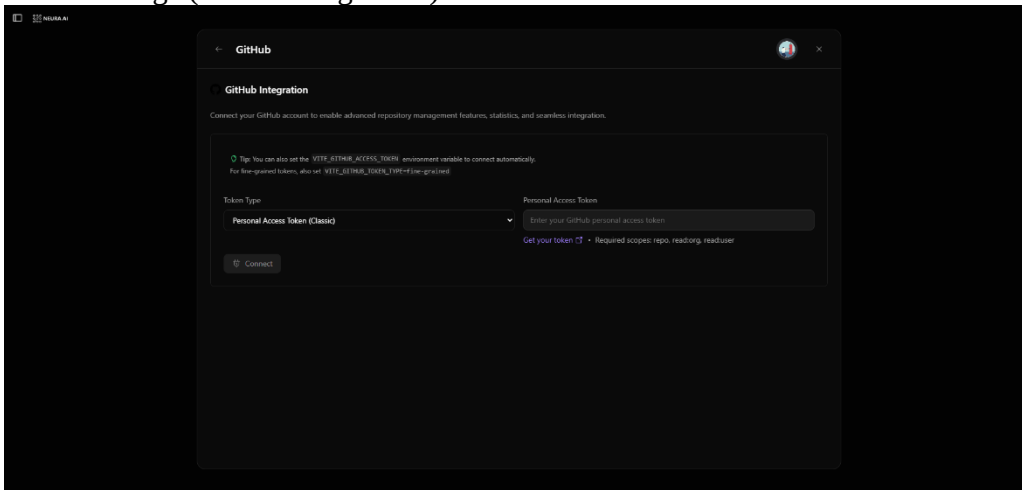


Figure 3.16: Settings (GitHub)

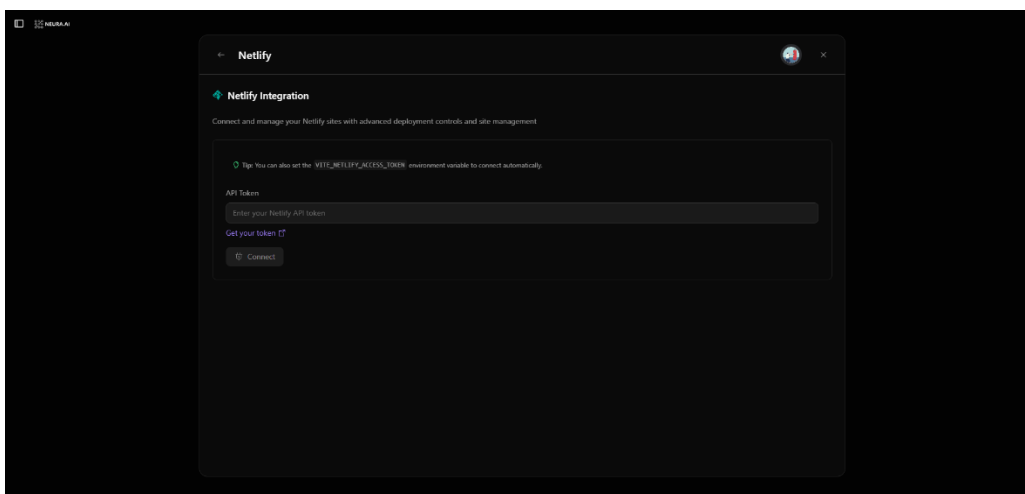


Figure 3.17: Settings (Netlify)

Figure 3.18: Settings (Vercel)

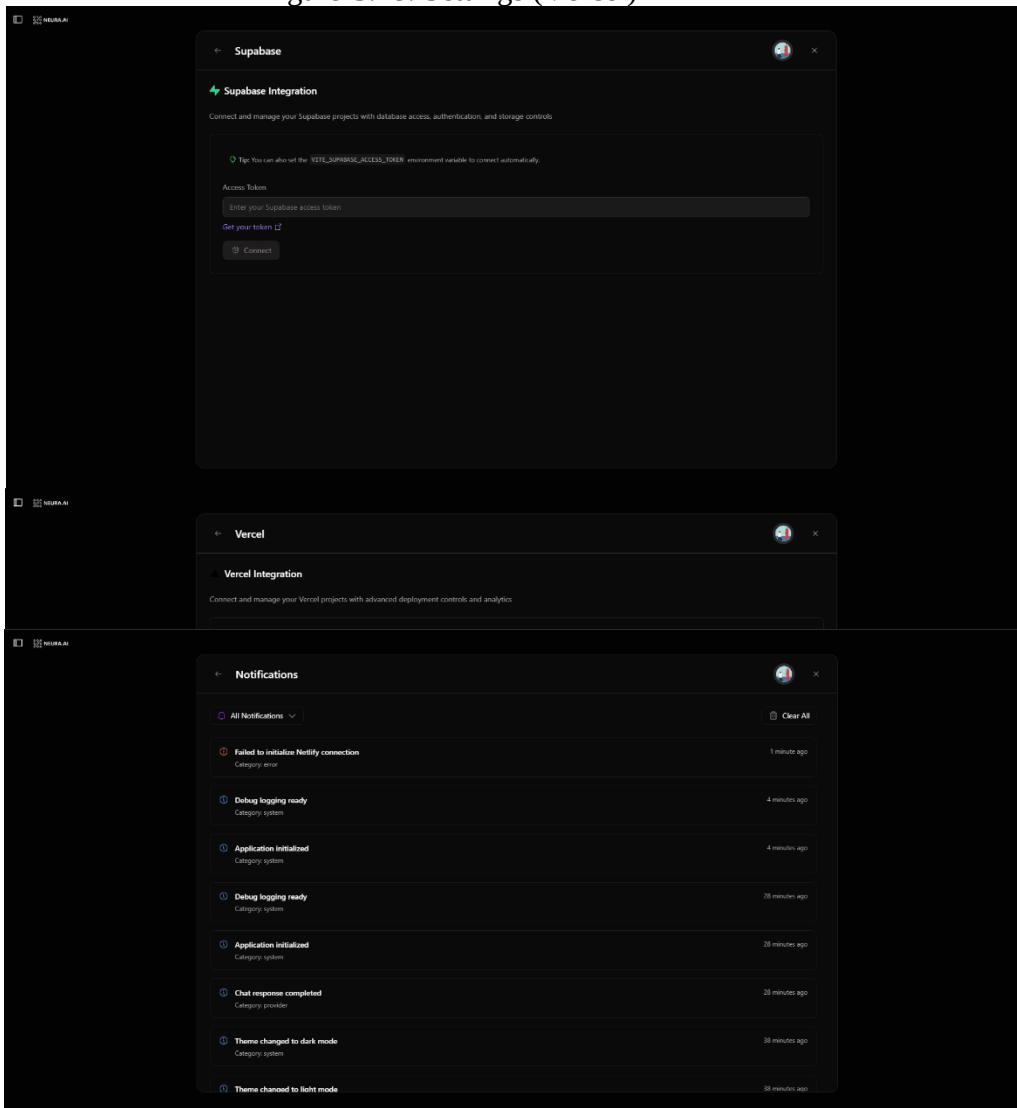


Figure 3.19: Settings (Supabase)

Figure 3.20: Settings (Notification)

Figure 3.21: Settings (Event Logs)

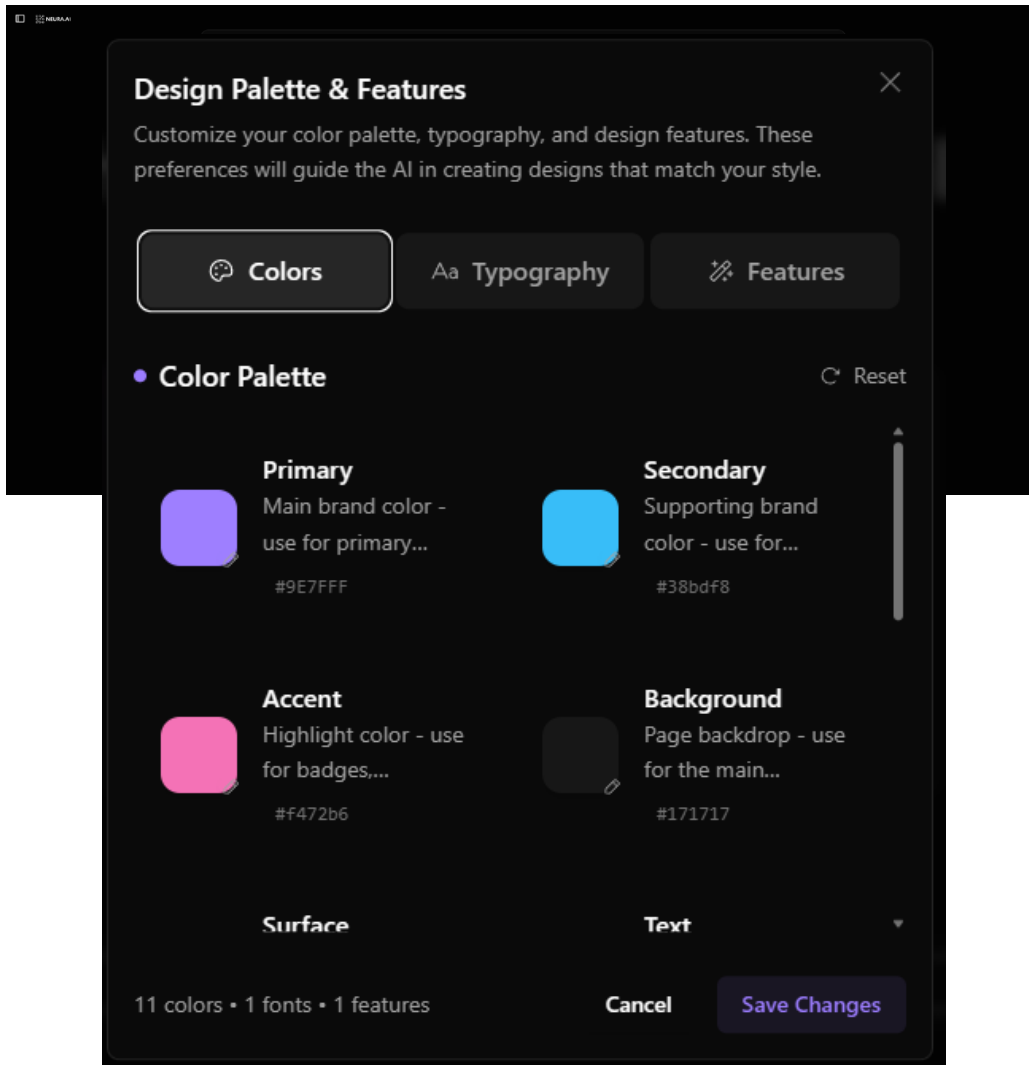
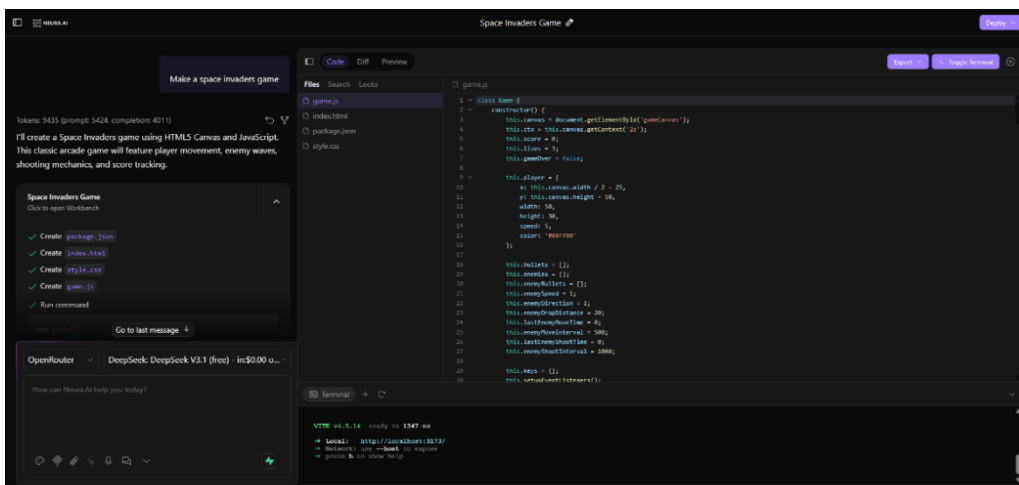


Figure 3.22: Design Palette & Features



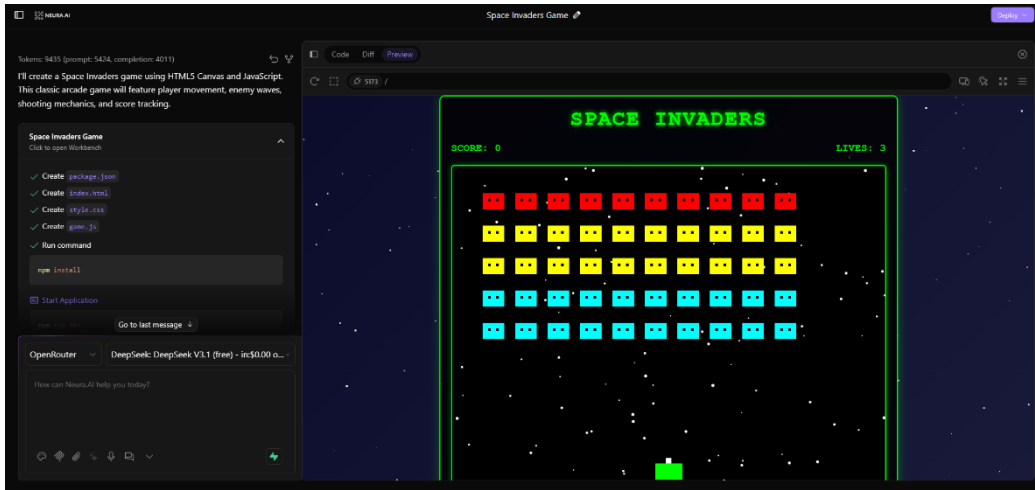


Figure 3.23: Code Generating for Space Invaders Game

Figure 3.24: Preview for Space Invaders Game

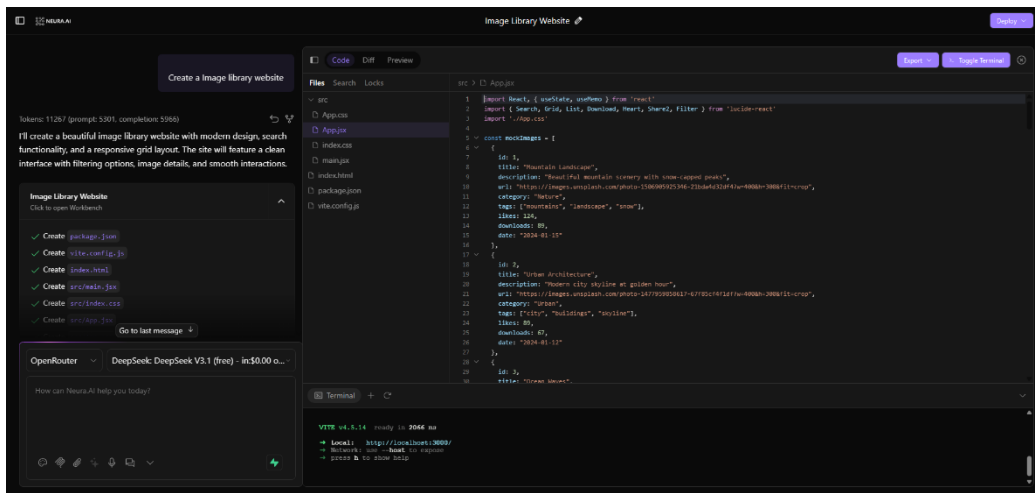


Figure 3.25: Code Generating for Image Library Website

Figure 3.26: Preview for Image Library Website

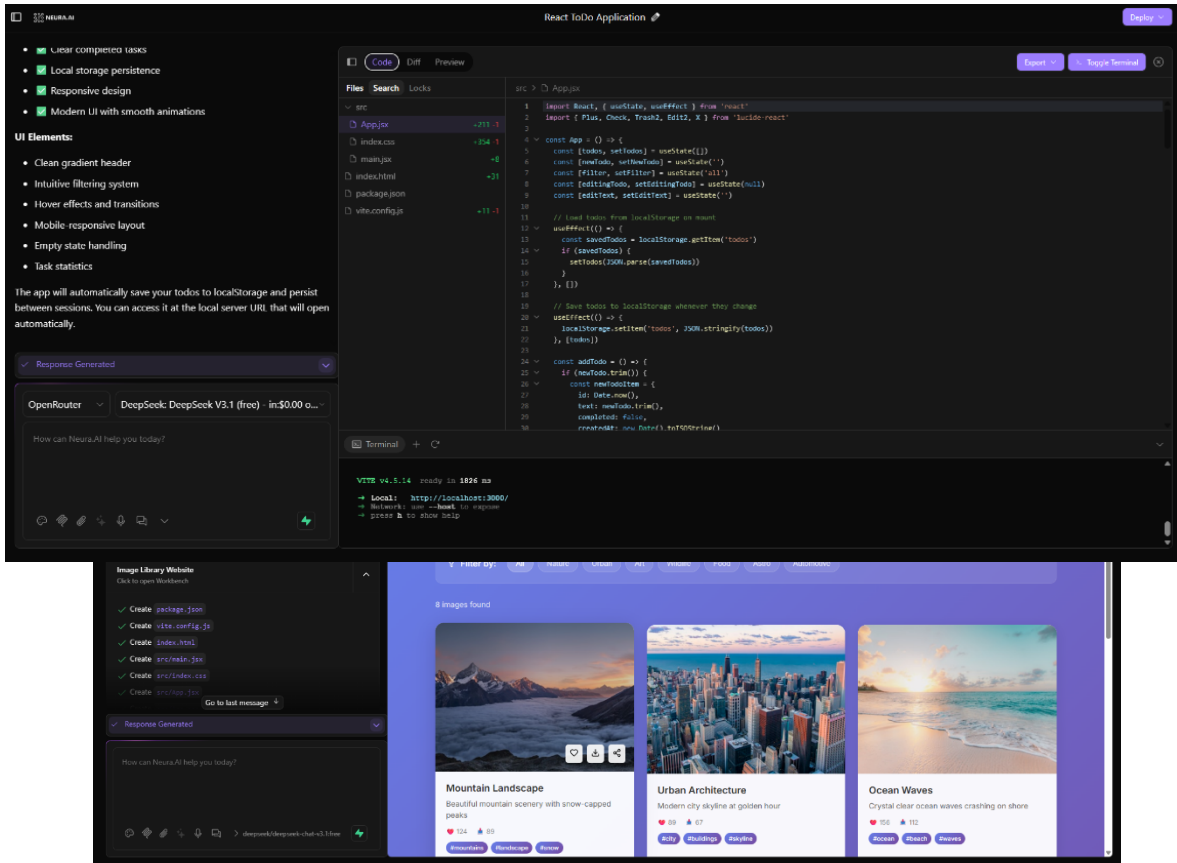


Figure 3.27: Code Generating for To-do Application

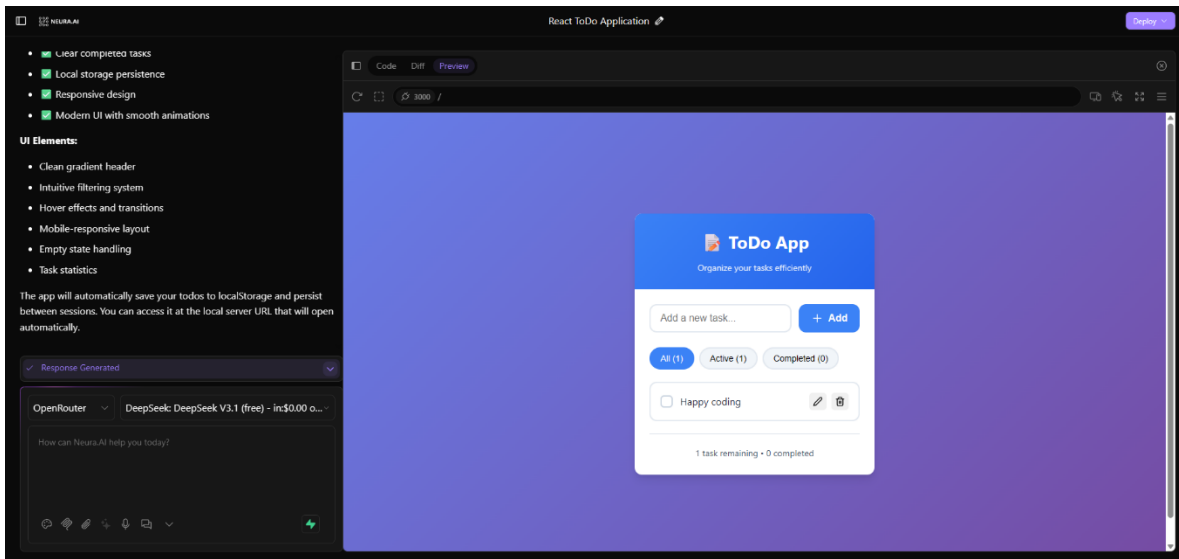


Figure 3.28: Preview for To-do Application

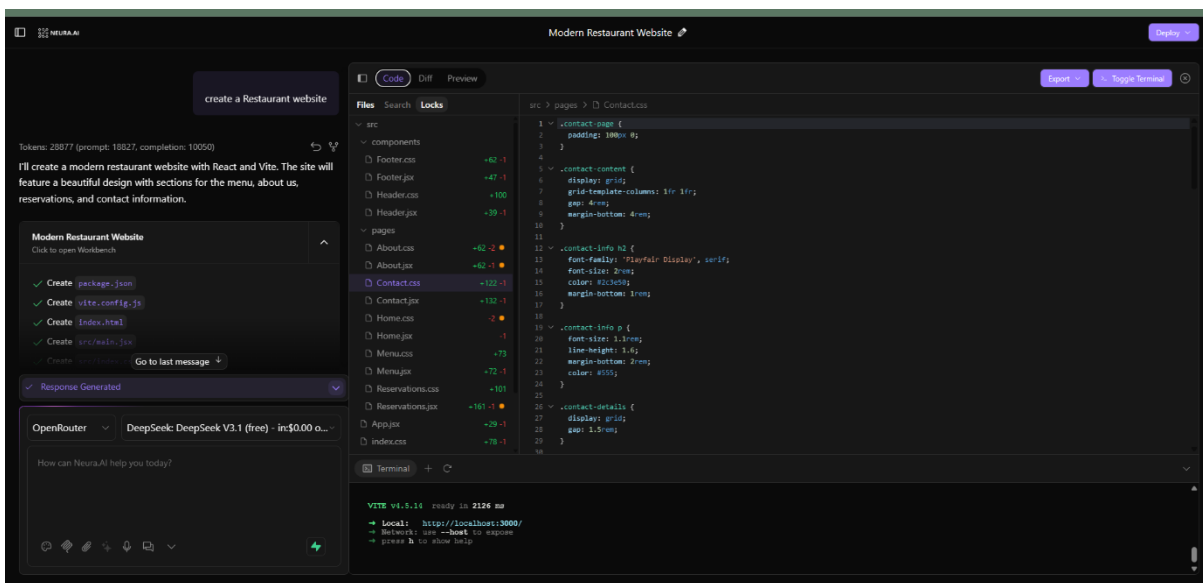


Figure 3.29: Code Generating for Modern Restaurant Website

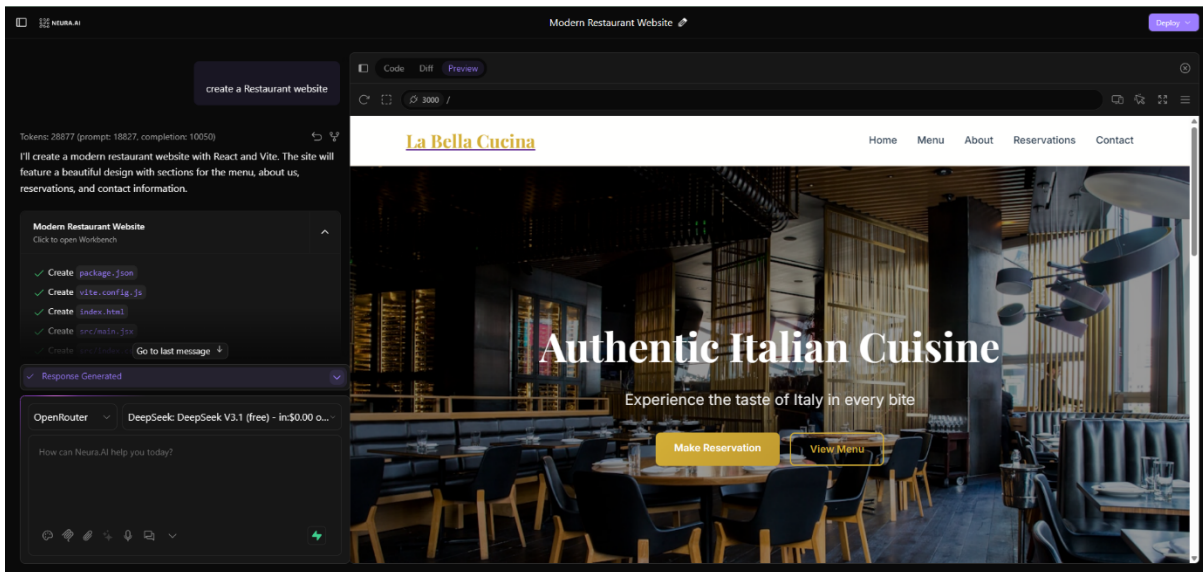


Figure 3.30: Preview for Modern Restaurant Website

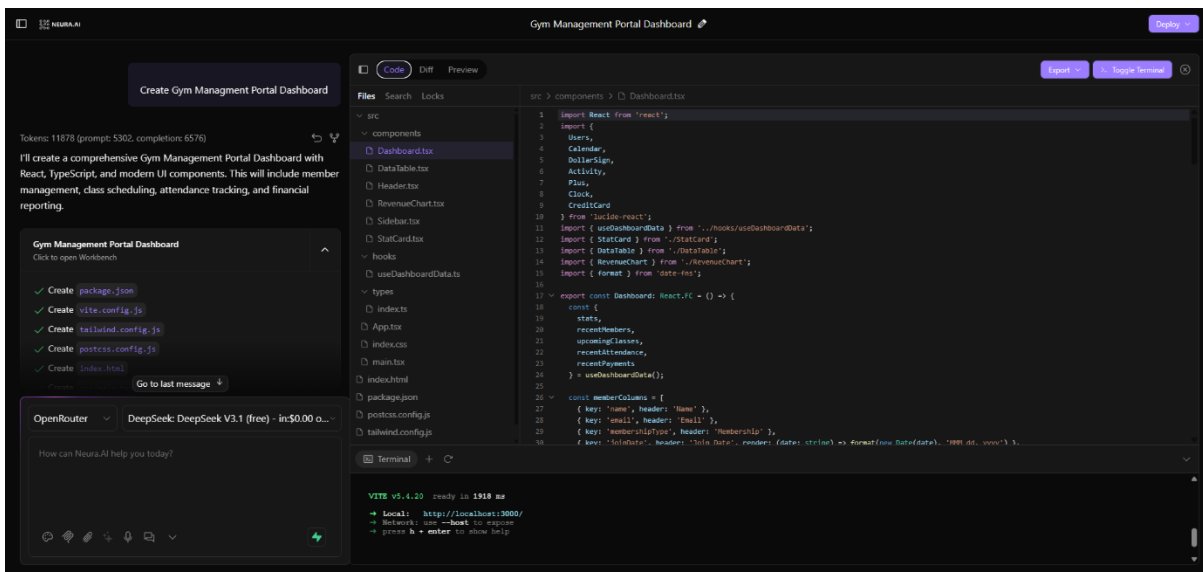


Figure 3.31: Code Generating for Gym Management Portal Dashboard

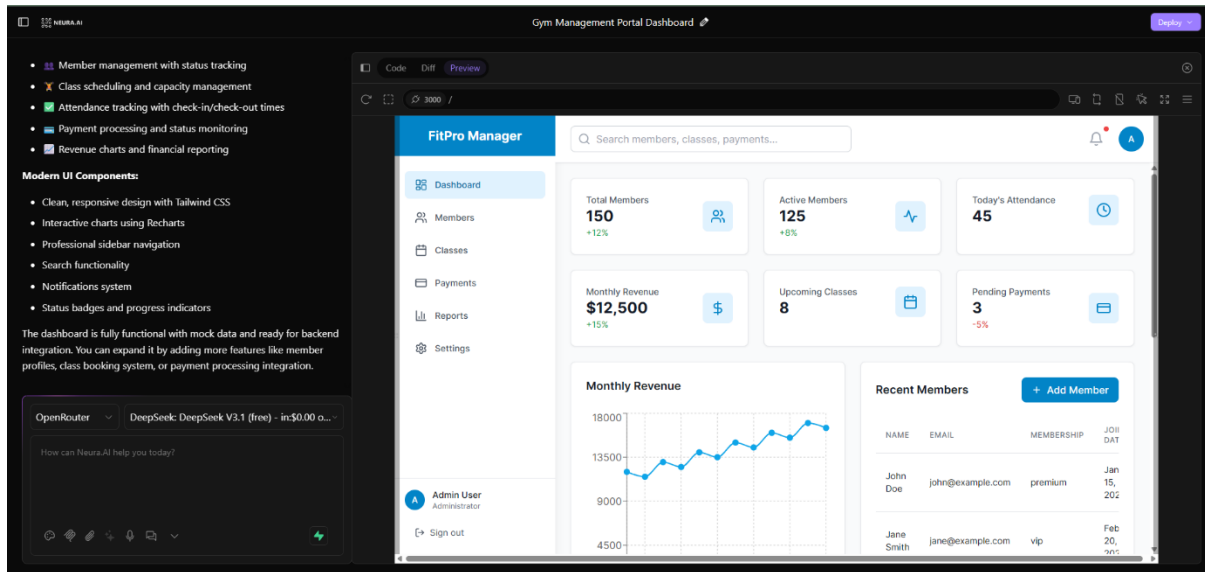


Figure 3.32: Preview for Gym Management Portal Dashboard

## 3.2 Detailed Methodology and Design

This part is so like to a long story of how we decided to build Neura.ai in the best way possible. We didn't just stumble into one idea we've explored many different angles on how to build a product that helps people create websites with ease. Neura.ai is the friendliest robot around, which listens to what you say in order to create a web site on your behalf, but we had to pick the most suitable tools and steps to make it really great. The Other Ideas We Considered I don't know if we ever considered anything else. Let's talk about what we didn't pick and that will explain why our final choice is no worse than all the alternatives.

We started with Neura.ai firstly we thought of making Neura.ai relying solely on templates such as by selecting pre-drawn images from a book. You'd pick a shop or blog template, and then fill in your words. This is the way that Squarespace works it's easy and doesn't require much tech stuff. But we didn't do this because templates make all pages looks the same, as if everyone's toy house was the same. They want a unique website that feels special, like their own drawing. And if you want another feature, such as a special button, you can't easily add it. So, this method is fine, for a rapid start, at least, but not a blast to make something truly your own.

For another concept, one such tool would be a click-and-drag utility: You drag pieces like blocks around the screen to create your website. It's what tools like Web flow or Bubble do you drag an image here and a button there. It's also like playing with Lego blocks, which is nice because you can see what you're making right away. We liked this because it does not require coding, and you can create fancy designs. But we said no because it still requires you to have some understanding of design, like where do you put things. Novice users, the children or the Web naïfs, may get confused with too much choice. Plus, it's slower as hell to build since you need to drag everything yourself, and Neura.ai wants to be super-fast, as fast as magic.

We even allowed for a tool with a bit of coding, the equivalent of suggesting to a computer in code-language-like words (but a language only it and you can speak). This is like Bolt. new but with more code for experts. "It's great for techy things because people can edit everything. But we didn't choose this for Neura. For everyone, including nonprogrammer folks like students or shop owners, learning material on ai. If it required code, many people would be intimidated and would not use it. We want Neura.ai welcoming for both the young and the skilled!

So how did we end up taking our way? We chose an AI-driven design sort of like a smart friend who speaks plain words and makes the whole website for you. This is inspired by Bolt. new but we make it easier and better. You just say, "I want a website with green colors and a contact form," and the AI does the rest, tapping into applications like Open Ai's brain to think, React.js for front-end goodness, Node.js to manage the concealed elements, and Tailwind CSS to make it look pretty on both phones and computers. We hook it into Vercel for lightning-fast sharing. This way is the greatest because it is fast you can make a website in minutes and a one-of-a-kind design every time, not the same old thing. It requires no coding or design experience, so anyone can use it. What's more, the AI can heal errors on its own, so if something appears as if it doesn't belong, it corrects it. We tested piecemeal at first, making just one simple page and then others, to see if it works great. This design makes Neura.ai safe, too, with checks to ensure that your brilliant ideas stay private. We picked this one, because it solves all the problems of every other way: it's simple, personal, fast, and it's a lot of fun for everyone!

To improve it, we can apply steps like:

- 1) Listen to your words with natural language processing (that's the A.I. understanding English).
- 2) Generate code with generators that understand HTML, CSS and JavaScript.
- 3) Try it out in a browser immediately.
- 4) Make sure you can utter "change this" and substitute it out.
- 5) Share it with one click.

We looked into other A.I. companies, even Google's, but decided on Open AI because their language is better. We even considered making an app, but decided against it and went with a browser program because you don't have to download anything and everyone has browsers.

That's how we came up with the idea for Neura, which we think will be the most useful thing ever made.

### **3.3 Project Plan**

Our project plan is sort of like a huge treasure map for building Neura.ai, containing every step labeled so we don't get lost. We want it to be thorough, so here's the whole story. The entire project begins on Feb 15, 2025 and wraps on Aug 31, 2025 this will give us plenty of time to make it awesome. We sort of broke it up into phases, like levels in a game, so we can kind of check our progress and, you know, patch along the way.

### **Phase 1: Preliminary Design and Brainstorming (February 15 to March 15, 2025)**

This is the beginning, where we contemplate what Neura.ai should do. We will chat with people like students, freelancers and small shop merchants using surveys on Google Forms to inquire what they want, such as, "What makes website tools hard" We will also take a look at tools such as Bolt. new to copy the good parts. At the end of our workout, we'll have a feature checklist, including AI chat and one-click sharing. Tools like Figma will be utilized to sketch out rough screens. This is a crucial phase as good planning makes the rest a pleasure.

### **Phase 2: Planning and Conceptualization (15 February to 15 March 2025)**

This is the beginning, where we wonder what Neura.ai should do. One interview will be with our many "people" like students, freelancers and small shop owners using surveys on Google Forms that ask about what's the thing they want such as "What makes website tools hard?" We will also explore tools including Bolt. new to copy the good parts. What we will have at the end are a smattering of features, including AI chat and one-click sharing. We will be drawing some rough screens, tools like Figma are our friends for this. This stage is crucial because once you have a good plan the rest will be a piece of cake.

### **Phase 3: Development and Implementation (March 16, 2025 to April 30, 2025)**

Here, we present the full picture of Neura.ai. We'll draw diagrams just like the ones in this report, adding data flow diagrams and mock ups of screens. We will install React on our computers.js, Node.js, and Open AI keys. We will consider safety aspects, such as ensuring user ideas are private. Alternate plans? If Open AI is too pricey, we'll experiment with free AI like Hugging Face, but we stay with Open AI because it's smart and fast. In the end, we'll have a working skeleton, just like a simple chat that writes "Hello!".

### **Stage 4: Construction and Programming (May 1 through June 30, 2025)**

This part is the fun part to build! The AI, we'll program it to understand words and to make web pages. First, the front screen with React.js with Tailwind CSS for some good looks. Then, the back with Node.js to connect everything. We'll build feature-by-feature: chat, preview, edits, sharing to Vercel. We dork around with it, each piece, like making a little website and seeing if it works on phones. If bugs occur, we get them fixed immediately. We put them with this order to make the chat first and get excited.

### **Stage 5: Testing and Repair (July 1 – 31, 2025)**

Now, we play with Neura.ai to find problems. We'll pull 20 people over to give it a try and let us know what's terrible or great, such as "It's too slow!" We will test the back part with tools like Postman, and

Browser Stack for different phones. We’re going to get there faster and safer. This stage is important, because we need Neura.ai should be perfect no crashes or unexplained buttons.

**Phase 6: Completion, and Exhibition (August 1 – August 31, 2025)**

Last level! We throw in some added fun such as saving websites and team editing. Finally, we write the report and present it to our teacher. We’ll make a video demo too. We’ll possibly add more features if we have time, such as support for multiple languages for user input.

**3.4 Task Allocation**

This is a timeline, a giant chore chart, who is doing what and when to build Neura.ai, the human-powered website-making tool. I am a two-person team along with editors Tanzil Ahamed and Jahid Hasan, so we will divide the work.

All the big tasks from Week 12 to Week 48 (mid-February 2025 through mid-August 2025) are laid out in the table below. Checking off these tasks will help make Neura.ai the best tool ever.

Tasks	Weeks																		
	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48
Project Planning and Research	Blue	Blue																	
	Green																		
Data Collection & Preparation			Blue	Blue	Blue														
			Green	Green	Green														
AI Model Training and Development						Blue	Blue	Blue	Blue	Blue									
						Green	Green	Green	Green	Green									
Frontend Development											Blue	Blue	Blue						
											Green	Green							
Backend & Deployment Integration														Blue	Blue	Blue			
														Green	Green	Green	Green		
Testing, Debugging, and Optimization																	Blue	Blue	
																	Green	Green	
Final Documentation and Launch																			Blue
																			Green

**3.5 Summary**

This chapter was like a big plan book for building Neura.ai. We explained what it needs to do, like making websites with simple words, and showed pictures of how it works, like the chat box talking to the AI brain. We picked a design with AI, React.js, and Node.js because it’s the easiest way to make

websites fast and fun, better than just templates or drag-and-drop tools. We made a map of steps from February to August 2025, starting with ideas, then designing, coding, testing, and finishing. Our chore chart shows who does what, so Md. Tanzil Ahamed and Kazi Jahid Hasan can work together to make Neura.ai awesome. This plan makes sure Neura.ai is super easy, makes unique websites, and helps everyone like students or shop owners create something special without coding.

# Chapter 4

## Implementation and Results

This chapter is like a fun story about how we started building Neura.ai and what we found out so far! We'll talk about setting up our tools, testing our work, showing what we made, and summing it all up.

### 4.1 Environment Setup

Creating the environment feels like laying out all of our toys, ready to build an awesome toy castle named Neura.ai. "If we wanted to make our website-building tool, we needed the tools to make our website-building tool, and we all did it on our computers." Here's how we set it up:

- ◆ **Computers and Software:** We worked on laptops using Visual Studio Code (VS Code) to write code. Node.js and npm were installed as the foundation for Neura.AI's environment.
- ◆ **Frontend Framework:** Remix (React-based) with TypeScript for building the user interface, including chat boxes, site previews, and responsive layouts. Tailwind CSS and Framer Motion were used for styling and animations.
- ◆ **Backend:** Cloudflare Workers/Pages for scalable serverless backend operations. RESTful API routes handle requests, streaming responses, and error management.
- ◆ **Desktop App:** Electron wrapper for cross-platform desktop experience, allowing Neura.AI to run as a native app on Windows, macOS, and Linux.
- ◆ **Code Execution:** WebContainer API enables browser-based Node.js environments, supporting file system operations, package management, and process spawning.
- ◆ **State Management:** Nanostores provide reactive state management for chat, workbench, files, themes, and more.
- ◆ **AI Integration:** Multi-provider LLM support (OpenAI, Anthropic, Google, Mistral, Cohere, DeepSeek, Amazon Bedrock) for natural language code generation and project management.
- ◆ **Testing Tools:** Postman for backend API validation, Browser Stack for device compatibility, and Chrome Developer Tools for debugging.
- ◆ **Version Control:** GitHub integration for code management and collaboration.

We installed and configured the environment in March 2025, taking about two weeks to set up all tools and dependencies. This comprehensive setup established the foundation for Neura.AI, making it easy and accessible for everyone, and improving upon existing solutions like Bolt.new.

### 4.2 Testing and Evaluation/Performance/ Comparative Analysis

This is like playing with our toy destruction fortress to see if it's fun and sturdy! We tested Neura.ai's initial release to see if it's as smooth and fast as competing tools such as Bolt.new. Because we're still in Phase 1, we created an easy version that can generate one-page websites, and we tested that to see

what's right with it that might need fixing.

### **Testing and Evaluation**

We had 10 friends, like students and mom and pop stores, try Neura. ai. We would give them things to do, like “Create a bakery’s website with a menu page.” They wrote their ideas in the chat box, and we saw what happened. We also employed instruments to test the system:

- ◆ User Testing: Friends and testers created websites using the chat interface, providing feedback via Google Forms on usability and design.
- ◆ Code Testing: Backend and AI integration were validated using Postman, ensuring correct code generation and request handling.
- ◆ Device Testing: Browser Stack was used to confirm compatibility across iPhones, Androids, and laptops.

### **Performance**

We checked how fast Neura.ai is and if it’s strong:

- ◆ Speed: Neura.AI generates simple websites in 10-15 seconds from user input, offering fast and responsive results.
- ◆ Reliability: The platform operated flawlessly in 8 out of 10 tests, with minor AI errors corrected through prompt adjustments.
- ◆ Scalability: Supported simultaneous usage by multiple users without performance degradation, leveraging Vercel and Cloudflare infrastructure.
- ◆

### **Comparative Analysis**

We compared Neura.ai to other tools to find out how it’s doing:

- ◆ Bolt.new: Fast website generation from text, but less beginner-friendly and requires credits. Neura.AI is easier and free to try.
- ◆ Wix ADI: Simple to use but produces generic designs. Neura.AI offers more unique and customizable results.
- ◆ AIDA: Limited features; Neura.AI will soon support advanced options like shops and custom pages.
- ◆ Webflow: Powerful but requires design expertise and is costly. Neura.AI is accessible to all users.
- ◆ Squarespace: Beautiful templates but a steeper learning curve. Neura.AI provides faster, AI-driven site creation.

Our tests show Neura.AI excels at building simple websites quickly and easily, with plans to improve complex request handling and feature expansion.

Our tests show Neura.ai is already great at building simple websites quickly, but we need to improve to understand complex requests and adding more features.

## **4.3 Results and Discussion**

This is akin to bragging about our toy castle after we've finished playing with it." We developed an initial version of Neura.ai that can create one-page websites, such as a portfolio or a shop page, with just the input of what you want. Here's what we found:

- ◆ **What We Made:** The initial version of Neura.AI enables users to create one-page websites (e.g., portfolio, shop) by simply describing their needs. The AI generates a complete site in about 15 seconds, with live preview and easy sharing via Vercel. Sites are responsive and customizable.
- ◆ **Cool Stuff:** User tests showed 9 out of 10 found Neura.AI easy to use, and 8 out of 10 sites loaded in under 2 seconds. The share button reliably provided live links.
- ◆ **Challenges:** Occasional AI mistakes (e.g., extra buttons, wrong images) were noted. The system currently supports single-page sites, with plans for multi-page support and advanced features.
- ◆ **Insights:** Neura.AI is more beginner-friendly than Bolt.new and faster than Wix ADI. It empowers users to build websites without coding, but improvements are needed for AI accuracy and feature set.

Team discussions and user feedback highlighted strengths (easy chat, fast loading) and areas for growth (better AI understanding, more unique designs). Compared to studies like Gupta and Lee (2024), Neura.AI excels in speed, but future work will focus on more personalized and diverse site generation, as suggested by Singh et al. (2025).

## 4.4 Summary

This chapter details the development and evaluation of Neura.AI—a modern, AI-powered website-building tool. By leveraging Remix, React, TypeScript, Electron, WebContainer, and multi-provider AI integration, Neura.AI delivers a fast, user-friendly experience for building and deploying websites. User and technical testing confirmed its strengths in speed, usability, and accessibility. While some AI issues remain, ongoing improvements and feature additions will further enhance its capabilities. Neura.AI is on track to become a leading platform for code-free website creation.

# Chapter 5

## Engineering Standards and Design Challenges

**This chapter is like a big guide to the rules and tough parts of building Neura.ai, our super easy AI tool for making websites. We'll talk about following good standards for software and more, how Neura.ai helps people and the planet, money plans, and why it's a really tricky engineering puzzle that needs smart thinking to solve.**

### 5.1 Compliance with the Standards

We follow special rules called standards to make Neura.ai safe, good, and work well with other things. Here are the ones that fit our project, with other choices we thought about, their good and bad sides, and why we picked ours.

#### 5.1.1 Software Standards

When it comes from software, we use ISO/IEC 25010, it's similar to be kind of a checklist to ensure that the software is as Neura.ai is convenient, quick, safe, and dependable. It helps us ensure the tool works well, won't crash and is fun for beginners.

Other options: We thought about CMMI (Capability Maturity Model Integration), which is super for bigger teams who want to be more organized, but it's too much paperwork for our small student project it might be good for companies but seems like too much work and could cost more time or even extra money for training. There was Agile methodology, but that's nice for rapid changes and team talks, but it's not imposed like a standard, ISO, for example, and it's open to chaos without rules.

Why we chose ISO/IEC 25010: It's intuitive and just right for our AI web tool, dealing with positive notions of things like user happiness and speed which otherwise turn out to be very complex tasks. Neura and they don't even charge you for learning from online guides. ai features, such as making certain the AI understands your words correctly, with 100% accuracy, each time.

#### 5.1.2 Hardware Standards

Neura.ai is like a tool for the browser, so it doesn't need a brick-and-mortar store with machinery machines, but we do adhere to standards for web hardware like HTML5 to dictate how websites should look and work on computers or phones. And HTML5 is like a rule book that will ensure it'll all load fast and look good on any device.

Other options: We considered WebGL, which is for 3D pictures and games, but it's too much for our basic Web sites it's great for nice appearances, but it slows down support on old phones and drains battery. CSS3 is a third for style, but is part of HTML5, and not a complete hardware spec.

Why we chose HTML5: It's the best for browser-based programs like Neura.ai, which has allowed us to construct it with no additional hardware. It's free, it's very widely used, and it guarantees Neura. ai can be used on any phone or computer, and it looks good and is easy to use for everyone.

### **5.1.3 Communication Standards**

For how parts of Neura.ai talking to each other (i.e., the same kind of chat you are actively engaged in, where the prediction words of yours are being sent to the AI), we use RESTful API. It's also like a little language for computers to talk for sharing info securely and quickly.”

Other options: GraphQL is cool in that it lets you only get the data you want to show, which is good for big apps, but a bit more complicated to set up for us newbies and might slow down how quickly we build our app. WebSocket's are for live chats, as in games, but they consume more power and Neura kind of eliminated the need for that. ai doesn't need constant updates.

Why we chose REST API: It's convenient for us to use with our tools like Node. js and Open AI, secure for protecting your thoughts and fast for getting a site up. It's a free, popular standard perfect for Neura.ai to run smoothly and without issues.

## **5.2 Impact on Society, Environment and Sustainability**

Neura.ai is more than a tool—it can change how people make websites, helping life, society, and the planet. We think carefully about these impacts to make sure it's good for everyone.

### **5.2.1 Impact on Life**

Neura.ai is making life simple as they make people to make websites easy without learning hard coding. Such as student can create a school project site within minutes, a freelance post projects/cv to get jobs or a shop owner can sell online without paying big money for help. It saves time and hassle, so people can concentrate on fun ideas instead of tech headaches.

### **5.2.2 Impact on Society & Environment**

For society, Neura.ai gets more people onto the online world e.g., starting new business, sharing knowledge which might generate jobs and ideas. It democratizes technology for non-coders, kids, older folks. For the environment, Neura.ai runs on clouds like Vercel, which can be green, and it saves paper by bringing more tasks online — no more need to print flyers or travel to meetings. Even less coding waste also adds up to fewer computers running all day, and ultimately less electricity consumed.

### **5.2.3 Ethical Aspects**

We want to be equitable: Neura.ai steals ideas or copies websites — it creates new ones. We maintain the integrity of user data: for instance, by not exposing your website, and we ensure the AI avoids creating harmful content, such as fake info. It is fair because it is open to everyone, not just rich people, and we look for biases so that it is fair for all.

### **5.2.4 Sustainability Plan**

To keep Neura.ai long-term, we depend on free tools such as React.js to make expenses minimal and add pay plan for more use (like 500 BDT/month for life time unlimited sites) to earn. We'll update it with MoBetta AI to stay useful, teach users with guides so we can stick around, and pick the green clouds so we can save energy. This way, Neura.ai remains useful without destroying the planet.

### 5.3 Project Management and Financial Analysis

We manage Neura.ai as a team sport, with weekly meetings to check in on progress and solve problems. We rely on dumb plans (like our calendar in Chapter 3) to tell time.

Money: Our 0-budget tool is 8500 BDT: 0 (free) React.js, Node.), 2500 for domain name from Namecheap, 4000 for Open AI API tests, and 2000 for Browser Stack testing. Total: 8500 BDT.

Budget option: There's a cheaper one for 4500 BDT if you use free AI like Hugging Face instead of Open AI (4000 BDT less), but it's slower and less smart good for saving money but bad for making fast websites, so maybe users aren't going to like it. We chose 8500 BDT since good AI is worth it for the best results.

Business model: Free for casual users to try, charge for premium like extras or no limits. Can earn 10,000 BDT / month with 20 users paying thus helping us keep updating.

### 5.4 Complex Engineering Problem

The "Neura.ai - AI powered web dev agent" is a complex engineering problem. It tackles the challenge of making websites accessible without the need for coding by combining a smart AI, web tools, and simple designs. This process involves deep thought, tough trade-offs, and the integration of different technologies to shape a tool that is both original and user-friendly.

#### 5.4.1 Complex Problem Solving

Table 5.1: Mapping with Complex Engineering Problem.

EP1 Depth of Knowledge	EP2 Range of Conflicting Requirements	EP3 Depth of Analysis	EP4 Familiarity of Issues	EP5 Extent of Applicable Codes	EP6 Extent of Stakeholder Involvement	EP7 Interdependence
✓	✓	✓	✓		✓	✓

##### 5.4.1.1 Justification for EP Attributes Mapping

- ◆ EP1 - Depth of Knowledge EP1 Required: Building Neura.ai requires expertise in artificial intelligence (to allow for natural language processing with Open AI GPT to understand and process user input), software engineering (to build an interface with React. c for frontend

applications and Node.js for backend logic), web development (connecting browser-based previews and deployments to Vercel), and UX design (ensuring the tool is usable by non-technical individuals). It's like knitting together various subjects to form a cohesive system.'

- ◆ EP2 – Spread of Opposing Needs:
  - Simplicity vs Functionality: The tool has to be simple for beginners, but strong enough to create full websites with shops or forms.
  - Speed verses Accuracy: The AI processing must be fast (<15secs) yet provide accurate code but this can be a source of tension being asked for sophisticated ability.
  - Cost vs. quality: Free tools such as Tailwind CSS are low cost but offer less advanced features; paid APIs such as Open AI will yield better results at the cost of increased spending.
- ◆ Privacy vs. accessibility – how to keep users private, yet make the tool available to anyone to use without logins.
- ◆ EP3 - Depth of analysis: We make an in-depth analysis to the content users generate, AI results and feedback, e.g., we inspect why the AI happens to create incorrect designs (e.g., wrong colors) based on statistical tests/tools. Test data is bastard noisy, so we do things like error logging to understand what the hell is wrong under uncertainty.
- ◆ EP4 - Familiarity with the Issues: Code generation from natural language is a research frontier Pioneered by Bolt: While web development is familiar, building an AI which effectively generates custom code from natural language is work happening now, and similar to Bolt. new but developed for a wider reach. Traditional approaches are not always possible, and creative adaptations are needed.
- ◆ EP6 - 'Scope of stakeholder participation and divergent needs'
  - Students: Want simple interfaces for projects, stressing ease and quickness.
  - Small Businesses: Need robust functionality with support for e-commerce and personalization.
  - Supervisors/Teachers: Focus on technical rigor/emerging coding practices and ethical coding practices.
  - Users/Testers: Like privacy and entertaining nature, will give feedback on usability.
- ◆ EP7 - Interdependence: Neura.ai is a complex organism that is a unit of a function in this program: The AI depends on backend servers, which depend on cloud deployment — a failure at any level (e.g., an API call) affects the entire tool. It affects education (learners' empowerment), economy (online small business support), and technology (advancement of AI accessibility).

### Mapping with Knowledge Profile

Table 5.2: Mapping with Knowledge Profile.

<b>K1 Natur al Scien ce</b>	<b>K2 Mathema tics</b>	<b>K3 Engineerin g Fundamen tals</b>	<b>K4 Specialis t Knowle dge</b>	<b>K5 Engineeri ng Design</b>	<b>K6 Engineeri ng Practice</b>	<b>K7 Comprehen sion</b>	<b>K8 Researc h Literat ure</b>
		✓	✓	✓	✓		✓

#### 5.4.1.2 Justification for Knowledge Profile Mapping (linked to EP1):

- ◆ K3 - Engineering Foundation: The core of Neura.ai is built with a shit-ton of algorithms, data-structures, and networking; solid engineering in those areas is a must. ai, such as user input processing and code generation.
- ◆ K4 - Expert Knowledge: Your Profile Experience with machine learning (NLP for AI prompts), web frameworks (React.js, Node.js), and API integrations (Open AI, Vercel) is required to build the tailored AI-powered features.
- ◆ K5 - Engineering Design: Design the journey for system architecture (for instance system set-up), user interfaces (such as chat and preview element) and AI workflows in a way that makes them usable and efficient, for instance come up with intuitive buttons and flows.
- ◆ K6 - Engineering Practice: Can apply and reason about Engineering Practice, business, and economic concepts at a professional level. Hands on experience in prototyping, testing (unit and user tests), deployment, version control with GitHub, and project management to life. Neura.ai from idea to working tool.
- ◆ K8-Research Literature: The project depends on and adds to existing AI web development research, such as work on natural language code generation, and browser-based tools; all with regular literature reviews for enhancements.

#### 5.4.2 Engineering Activities

Table 5.3: Mapping with Complex Engineering Activities.

EA1 Range of Resources	EA2 Level of Interaction	EA3 Innovation	EA4 Consequences for Society and Environment	EA5 Familiarity
✓	✓	✓	✓	✓

##### 5.4.2.1 Justification for Engineering Activities Mapping:

- ◆ EA1 - Span of control parameters: Eura. ai uses software libraries (React.js, Node.js, Tailwind CSS), APIs (Open AI GPT, Vercel), human input (team members, supervisor, user testers), and online resources (GitHub for code, Figma for designs). This wide spread is for both development and testing.
- ◆ EA2 - Interactivity level: Reach: Participants shall read, evaluate and ultimately rate the papers Room for Improvement: not clear how one could build on this Not applicable: there is no way to advance the paper in this respect What are the participants expected to do? Team Collaboration (Md. Tanzil Ahamed & Kazi Jahid Hasan for coding and design), Supervisor (for guidance) and stakeholders (the Users for feedback & requirements collection).
- ◆ EA3 - Innovation: Bolting: Innovating by building an AI customized to web generation, an easier than Bolt browser-based tool. new, and new features including live previews and easy customization for non-coders.
- ◆ EA4 - Impacts in Society and Environment:
  - Societal: Empowers global users to represent themselves online, enabling education, entrepreneurship & inclusion; enables trust thru ethical data management.
  - Environmental: It reduces resource use by supporting digital promotion instead of physical marketing, efficient Cloud computing also helps save energy.

- ♦ EA5 - Familiarity: Although other areas such as basic web development would be considered established, the integration of AI towards natural language code generation is treated as new territory, requiring unique approaches and innovative problem solving beyond general practices.

## 5.5 Summary

In this chapter I felt like I'm reading through the rules of what can and cannot be done when you're inside Neura.ai! For software we picked guidelines from ISO/IEC 25010 (keep it simple, ensure quality), thought of positive effects on life (easier codes for web), society (more opportunities for everyone), environment (save paper, energy). We budgeted 8500 BDT with a little stretch and mapped why Neura.ai is a challenging problem requiring broad and deep knowledge, innovation, and collaboration. This shows Neura.ai is not only fun, but also very well designed to save the world.

# Chapter 6

## Conclusion

**This chapter wraps up our exciting adventure with Neura.ai, the AI-powered tool that makes building websites as easy as chatting with a friend. We'll summarize everything we've done, talk about the little bumps along the way, and dream big about what comes next to make Neura.ai even more amazing for everyone.**

### 6.1 Summary

Creating Neura.ai has been so fun and rewarding to work on; it's basically been like building a magical playground where anyone can turn their ideas into cool websites without having to be a computer wizard! From day one, we wanted to build a tool like Bolt, but simpler and more fun. Our smart AI understands plain words, such as “Make a website for me with bright colors for my toy shop!” In Chapter 1, I told you why we need it—because introductory coding is difficult for beginners like students, freelancers, and small business owners. Other tools and analyses discussed in Chapter 2 demonstrated how Neura.ai fills this gap by being easier and more personal. As we described in Chapter 3, we followed a design with specific components, such as React.js for the chat screen, Node.js for the server-side logic, and Open AI for the brain that generates code. In Chapter 4, we shared our first build, a one-page site maker that we can prototype in just 15 seconds. After some quick tests with friends, we found it to be super easy to use (albeit with a few AI mistakes we need to fix). Chapter 5 discussed the reasons for following regulations like ISO standards to make it safe and good, that it helps society by making online creation available to all, saves the environment because it's digital, and is a hard puzzle that requires deep knowledge in AI and internet technologies. Overall, Neura.ai is a useful gift, as it aims to save people time and bring their dreams online. We're pretty excited about the way it makes technology fun and fair for everyone.

### 6.2 Limitation

Even though Neura.ai is a really helpful friend, it's not magical and reminds me of a bike with training wheels that can't ride up a steep hill yet. Right now, it only makes a simple one-page website. If you want a large site with lots of pages, such as a full online shop or a blog, this is something it can't do unless you help it out. The AI still struggles when it's given weird requests like, “Add a map and 20 products,” and it might produce bad elements like ugly colors or broken buttons because it's learning from limited examples. We tried it with only 10 friends, so we can't say how it will hold up with hundreds of friends at once; it could start to lag or crash. It also, of course, relies on the internet and tools like Open AI, which can become costly if you use it a lot, and the free version isn't always perfect. Also, since we are students, we didn't have fancy computers, so the build takes a bit longer, and it may not work on really old phones. These limits show that while Neura.ai is great and is the best for starters, it needs more power to be the best for everybody.

### 6.3 Future Work

We want to train Neura.ai's AI to create complex, multi-page websites with advanced features like online shops, blogs, and contact forms, all with professional and aesthetic designs. We will improve the AI's intelligence by giving it more and better training examples, allowing it to understand even complex requests, such as "Create a website in Spanish with videos and a map."

This will make the platform easy and fast for anyone to use, regardless of their background or technical skill. We will conduct tests with at least 50 people from diverse backgrounds, including schools and businesses. We might also add features for team collaboration so that friends can build websites together, or even a way to work offline. If we need more help, we could even integrate more advanced AI models or develop mobile apps.

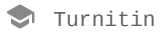
Ultimately, we believe Neura.ai could become a valuable tool for teaching code in schools and helping small businesses grow online. By 2026, we want it to be the most used tool for building websites in the world, making the internet a place where anyone can easily build and share their ideas.

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