**CET333\_Product Development**

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# Introduction:

In this assignment, I will discuss the complete website development process for AI-Solutions, from understanding the client requirements to designing and deployment. I was asked to built a website for a start-up company based in Sunderland that leverages AI to enhance the digital employee experience. Based on the requirements, this project focuses on designing and developing a functional website that showcases the company's AI-powered solutions, past success stories, customer feedback, and promotional content. The website also features a user-friendly "Contact Us" system, allowing potential clients to submit job requirements without needing to create accounts. Additionally, an admin dashboard with password protection is included to manage customer inquiries, upload the different solutions offers and events carried out by the AI Solution Company efficiently.

For timely delivery of the website, I have followed structured approach, beginning with client requirement analysis through meetings and discussions. The project is then executed using an Agile development model, ensuring flexibility and iterative improvements. The project undergoes different phases including system design, prototyping, development, testing, and deployment, ensuring that all website functionalities are effectively implemented and validated. Furthermore, this paper details the front-end and back-end technologies used, the interactions between different system components, and the methods for securing and managing customer data. Ultimately, this project aims to create a seamless and engaging digital platform that aligns with AI-Solutions' mission of innovation and global expansion.

# Portfolio overview:

**Code lInk**:

( The developed product code is uploaded to my GitHub account for easy access.)

**Setup Link:**

(I have uploaded the complete document containing setup requirement for running the website in local-host)

**Product Demonestration Video:**

( The video demonstration of the product is uploaded to my google drive for easy access)

# Requirement Specification:

Below are the complete functional, non-functional, and technical requirements of the client, initially collected to understand the actual client needs for further planning and to ensure a smooth development process.

## Project Scheduling and planning:

**AI-Solution Development Shedule Chart:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Task | Hours | Estimated Start Date | Estimated End Date | Actual Start Date | Actual End Date | Deliverable |
| 1. Requirement Gathering and Analysis | 30 | 15/03/2025 | 17/03/2025 | 15/03/2025 | 18/03/2025 |  |
| 1.1 Research on existing AI platforms | 4 | 15/03/2025 | 15/03/2025 | 15/03/2025 | 15/03/2025 | Mechanism understanding |
| 1.2 First client meeting for requirement gathering | 6 | 16/03/2025 | 16/03/2025 | 16/03/2025 | 16/03/2025 | Interview notes |
| 1.3 Analyzing and categorizing the requirements | 10 | 17/03/2025 | 17/03/2025 | 17/03/2025 | 17/03/2025 | List of functional and non-functional requirements |
| 1.4 In-depth analysis of different requirements | 10 | 17/03/2025 | 18/03/2025 | 17/03/2025 | 18/03/2025 | Requirement specification document |
| 2. Project Planning | 40 | 18/03/2025 | 22/03/2025 | 18/03/2025 | 22/04/2025 |  |
| 2.1 Selection of development methodology | 5 | 18/03/2025 | 18/03/2025 | 18/03/2025 | 19/03/2025 | Methodology comparison |
| 2.2 Compilation of required project resources | 10 | 19/03/2025 | 19/03/2025 | 19/03/2025 | 19/03/2025 | Resource collection |
| 2.3 Preparing draft of project proposal | 10 | 20/03/2025 | 20/03/2025 | 20/03/2025 | 20/03/2025 | Proposal draft |
| 2.4 Designing project schedule | 10 | 20/03/2025 | 20/03/2025 | 20/03/2025 | 21/03/2025 | Timeline document |
| 2.5 Creating a Gantt chart | 5 | 22/03/2025 | 22/03/2025 | 22/03/2025 | 22/03/2025 | Project flowchart |
| 3. Prototype Design | 60 | 22/03/2025 | 28/03/2025 |  |  |  |
| 3.1 System architecture design | 15 | 22/03/2025 | 23/03/2025 | 22/03/2025 | 22/03/2025 | System structure document |
| 3.2 Development of system wireframe | 5 | 23/03/2025 | 10/0/2025 | 23/03/2025 | 23/03/2025 | Wireframe document |
| 3.3 UML and DFD diagrams | 5 | 24/03/2025 | 12/04/2025 | 24/03/2025 | 24/03/2025 | Diagrams document |
| 3.4 Compiling solution design document | 5 | 25/03/2025 | 14/04/2025 | 25/03/2025 | 25/03/2025 | Design documentation |
| 3.5 Client meeting for prototype review | 5 | 25/03/2025 | 15/04/2025 | 26/03/2025 | 26/03/2025 | Meeting notes |
| 3.6 Additional system setting documentation | 5 | 25/03/2025 | 16/04/2025 | 26/03/2025 | 26/03/2025 | Configuration document |
| 3.7 Implementation of system development |  | 26/03/2025 | 25/04/2025 | 26/03/2025 | 26/03/2025 |  |
| 3.7.1 Frontend Development | 5 | 26/03/2025 | 26/03/2025 | 26/03/2025 | 26/03/2025 | Responsive UI |
| 3.7.2 Backend Development | 10 | 27/03/2025 | 27/03/2025 | 27/03/2025 | 27/03/2025 | Functionality implementation |
| 3.7.3 Frontend-Backend Integration | 5 | 27/03/2025 | 28/03/2025 | 28/03/2025 | 28/03/2025 | Working product |
| 4. Testing and Evaluation | 40 | 28/03/2025 | 30/03/2025 | 28/03/2025 | 30/03/2025 |  |
| 4.1 UX-UI Testing | 8 | 28/03/2025 | 28/03/2025 | 28/03/2025 | 28/03/2025 | UX Report |
| 4.2 Backend Functionality Testing | 6 | 28/03/2025 | 28/03/2025 | 28/03/2025 | 28/03/2025 | Functionality document |
| 4.3 Performance Testing | 6 | 28/03/2025 | 28/03/2025 | 28/03/2025 | 28/03/2025 | Load testing report |
| 4.4 Client Meeting for Feedback | 4 | 29/03/2025 | 29/03/2025 | 29/03/2025 | 29/03/2025 | Notes |
| 4.5 Documentation of test results | 6 | 30/03/2025 | 30/03/2025 | 30/03/2025 | 30/03/2025 | Testing report |
| 5. Final Iteration and Refinement | 50 | 30/03/2025 | 02/04/2025 |  |  |  |
| 5.1 UI Refinement | 10 | 30/03/2025 | 30/03/2025 | 30/04/2025 | 30/04/2025 | Improved UI |
| 5.2 Adding Additional Features | 15 | 30/03/2025 | 31/05/2025 | 31/04/2025 | 31/04/2025 | Feature updates |
| 5.3 Security Enhancements | 10 | 31/03/2025 | 31/03/2025 | 31/04/2025 | 31/03/2025 | Security report |
| 5.4 Final Testing and Debugging | 10 | 01/04/2025 | 1/04/2025 | 1/04/2025 | 1/04/2025 | Final test report |
| 5.5 Tutor Evaluation Meeting | 5 | 02/04/2025 | 02/04/2025 | 02/04/2025 | 02/04/2025 | Evaluation feedback |
| 6. Deployment and Maintenance | 35 | 02/04/2025 | 04/04/2025 | 02/04/2025 | 04/04/2025 |  |
| 6.1 Deployment of Solution Online | 20 | 2/04/2025 | 02/04/2025 | 02/04/2025 | 03/04/2025 | Live system |
| 6.2 Monitoring and Maintenance | 15 | 04/04/2025 | 04/04/2025 | 04/04/2025 | 04/04/2025 | System performance report |

## Gantt Chart

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Task ID | Task Title | Effort (hours) | W 1 | W 2 | W 3 | W 4 | W 5 | W 6 | W 7 | W 8 | W 9 |
| 1 | Requirement gathering and Analysis | 30 | 30 |  |  |  |  |  |  |  |  |
| 1.1 | Research on existing platform. | 4 | 4 |  |  |  |  |  |  |  |  |
| 1.2 | Client interview | 6 | 6 |  |  |  |  |  |  |  |  |
| 1.3 | categories the requirement | 10 | 10 |  |  |  |  |  |  |  |  |
| 1.4 | Depth analysis of different requirements | 10 | 10 |  |  |  |  |  |  |  |  |
| **2** | Project Planning | 40 | 10 | 20 | 10 |  |  |  |  |  |  |
| 2.1 | Methodology Selection | 5 |  | 5 |  |  |  |  |  |  |  |
| 2.2 | Resource collection | 10 | 5 | 5 |  |  |  |  |  |  |  |
| 2.3 | Draft proposal preparation | 10 | 5 | 5 |  |  |  |  |  |  |  |
| 2.4 | Design of Schedule timeline | 10 |  | 5 | 5 |  |  |  |  |  |  |
| 2.5 | Design and Development of Gantt Chart | 5 |  |  | 5 |  |  |  |  |  |  |
| **3** | Proposed a prototype of the solution. | 60 |  |  | 20 | 20 | 20 |  |  |  |  |
| 3.1 | Design of system proposed. | 15 |  |  | 15 |  |  |  |  |  |  |
| 3.2 | Wireframe development | 5 |  |  | 5 |  |  |  |  |  |  |
| 3.3 | Design of UML and DFD diagram | 5 |  |  |  | 5 |  |  |  |  |  |
| 3.4 | Design documentation | 5 |  |  |  | 5 |  |  |  |  |  |
| 3.5 | Second client meeting | 5 |  |  |  | 5 |  |  |  |  |  |
| 3.6 | Additional system user manual | 5 |  |  |  | 5 |  |  |  |  |  |
| 3.7 | Implementation of system development task |  |  |  |  |  |  |  |  |  |  |
| 3.7.1 | Frontend development | 5 |  |  |  |  | 5 |  |  |  |  |
| 3.7.2 | Backend development | 10 |  |  |  |  | 10 |  |  |  |  |
| 3.7.3 | Integration of frontend and backend | 5 |  |  |  |  | 5 |  |  |  |  |
| **4** | Testing of prototypes | 30 |  |  |  |  |  | 15 | 15 |  |  |
| 4.1 | UI/UX testing | 8 |  |  |  |  |  | 4 | 4 |  |  |
| 4.2 | Functional testing | 6 |  |  |  |  |  | 6 |  |  |  |
| 4.3 | Analyzing the test report | 6 |  |  |  |  |  |  | 6 |  |  |
| 4.4 | Third client Meeting | 4 |  |  |  |  |  | 4 |  |  |  |
| 4.5 | System configuration documentation. | 6 |  |  |  |  |  | 1 | 5 |  |  |
| 5 | Second prototype iteration | 60 |  |  |  |  |  |  | 25 | 35 |  |
| 5.1 | Refinement of UI | 10 |  |  |  |  |  |  | 5 | 5 |  |
| 5.2 | Addition of functionality | 20 |  |  |  |  |  |  | 10 | 10 |  |
| 5.3 | Testing of updated functionality | 15 |  |  |  |  |  |  | 5 | 10 |  |
| 5.4 | Evaluation meeting with tutor | 15 |  |  |  |  |  |  | 5 | 10 |  |
| 6 | Deployment and maintenance | 35 |  |  |  |  |  |  |  |  |  |
| 6.1 | Hosting the website | 20 |  |  |  |  |  |  |  |  |  |
| 6.2 | Monitoring and maintenance of system | 15 |  |  |  |  |  |  |  | 5 | 30 |
|  | Total Hours Per Week | 255 | 40 | 20 | 30 | 20 | 20 | 15 | 40 | 40 | 30 |

# Client Meeting Record Sheet:

1. **First Client Meeting**
2. **Second Client Meeting**
3. **Final Client Meeting**

# Methodology:

For developing the AI Solution product, I followed a structured approach to ensure I delivered the final product on time and met all the requirements. The main goal was to understand the actual requirements, break down the project into smaller steps, use the right tools, and remain flexible, so that I can make changes when necessary during the development process according to the client changing demands. Keeping all this in mind, here’s a breakdown of how I worked through the project.

## Planning of Project:

Before starting the development, I took time to plan everything properly. This phase was important because it helped me understand the client's needs clearly, set realistic deadlines, and define the specific features for the website. During this phase, I worked with the client to list all the features they wanted, such as functional and non functional requirements, and about the user interface. By understanding the client's needs clearly from the start, I could avoid misunderstandings and issues later on in the project.

Once the requirements are discussed, I created a detailed schedule for the entire project, breaking it down into smaller tasks called sprint. Each sprint had a specific focus, like creating the user interface in one sprint and developing the backend Functionality, Authentication in another. This helped me stay organized and on track.

## 5.2.Chosen Methodology

For the timely delivery of project and to ensure project is running on right track it is essential to adopt software development model. For my project I decided to use Agile methodology because it offers flexibility and allows me to make changes throughout the project. Agile is especially useful for projects like this one, where things can change or new requirements might come up as development progresses. With Agile, I could continuously work on smaller chunks of the project, test them, and get feedback from the client during client meeting to make improvements.

Below are the steps which i have carried out following the agile methodology for the sucessfull completation of website.

1. **Sprint Planning**

At the beginning of each sprint, I broke the work down into smaller tasks. Each sprint lasted around a weeks, and the goal was to complete one part of the project in each sprint. For example, one sprint focused on developing the smooth UI while the next sprint focused on building the robust backend functionality. This helped me focus on one area at a time and avoid feeling overwhelmed.

**2. Client Feedback:**

After completing each sprint, I showed the progress to the client to gather feedback . This was important because it made sure I was on the right track. For example, after completing the User interface, the client gave some suggestions on how the data should be presented, how the brand colors are miss matched and so on which I then worked on in the next sprint.

**3. Testing:**

After every sprint, I tested the work I had completed to ensure everything was working correctly. For example, I tested the User Interface for smooth navigation and to ensure it was easy to use. Again, i have tested all the backend functionality one by one to make sure all are working perfectly. If any issues were found during testing, I worked on fixing them in the following sprint.

**4. Improvement:**

As development continued, I worked on improving the product after each sprint. For example, I made form validation in inquires form to be sure the inquires are informative and complete and I also made the system better at handling more data. With Agile, I could keep improving the product step by step, ensuring it got better with every sprint.

## 5.3 Choice Justification:

I chose this approach because it worked well for the AI Solution product. The Agile methodology allowed me to break the project into smaller tasks, which helped me focus on one part of the product at a time. It also allowed me to adjust quickly when the client needed changes. Using tools like Git and Jira kept the project organized, while Agile gave me the flexibility to adapt as the project progressed.

## 5.4. Conclusion

By using the Agile methodology, breaking the project into manageable tasks, using the right tools, and staying flexible, I was able to deliver the AI Solution product on time and meet the client’s needs. Agile helped me continuously improve the product, gathering feedback and making adjustments in each sprint. This approach ensured the project was always moving forward, meeting the client’s expectations and adapting to any changes along the way.

To help with development and keep the project on track, I used several tools like Git-lab for version control. This helped me keep track of changes in the code, and it also made it easy to go back to previous versions of the project if needed. I used tools Jira to plan and track progress. These tools helped me keep track of tasks and deadlines, so I could stay organized and focused. To stay in touch with the client and my team, I used WhatsApp for daily communication and Google Meet for meetings. These tools made it easier to discuss progress, issues, and get feedback quickly.

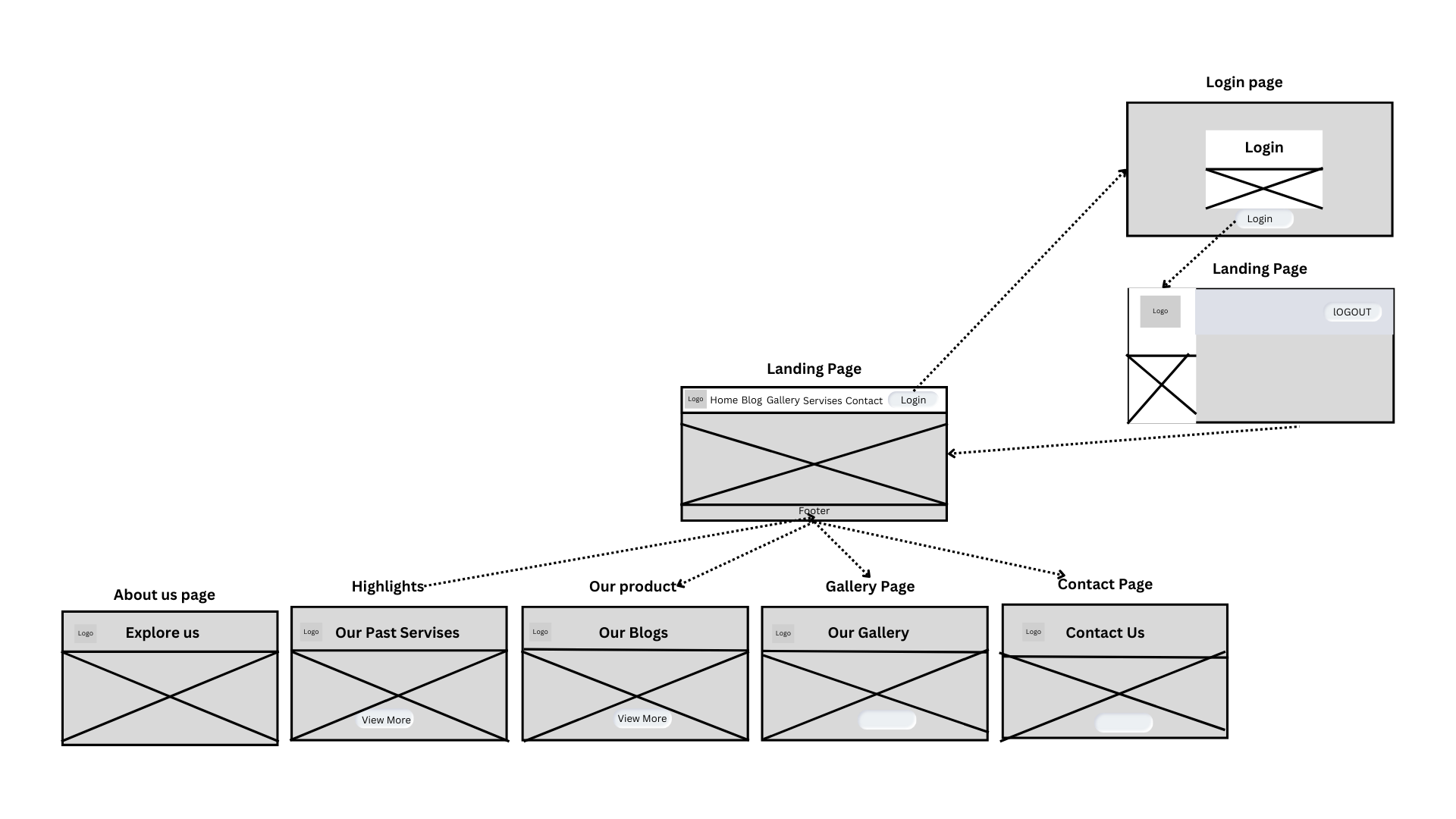
During the project, I also worked on identifying potential risks and planning ways to handle them: Agile’s flexibility allowed me to manage changes in the project. By checking in with the client regularly, I was able to adjust the project to meet new or updated requirements, avoiding delays. I created a clear timeline to account for unexpected delays. This helped ensure that the project stayed on track and was delivered on time, even if challenges came up during development.

# Solution Design:

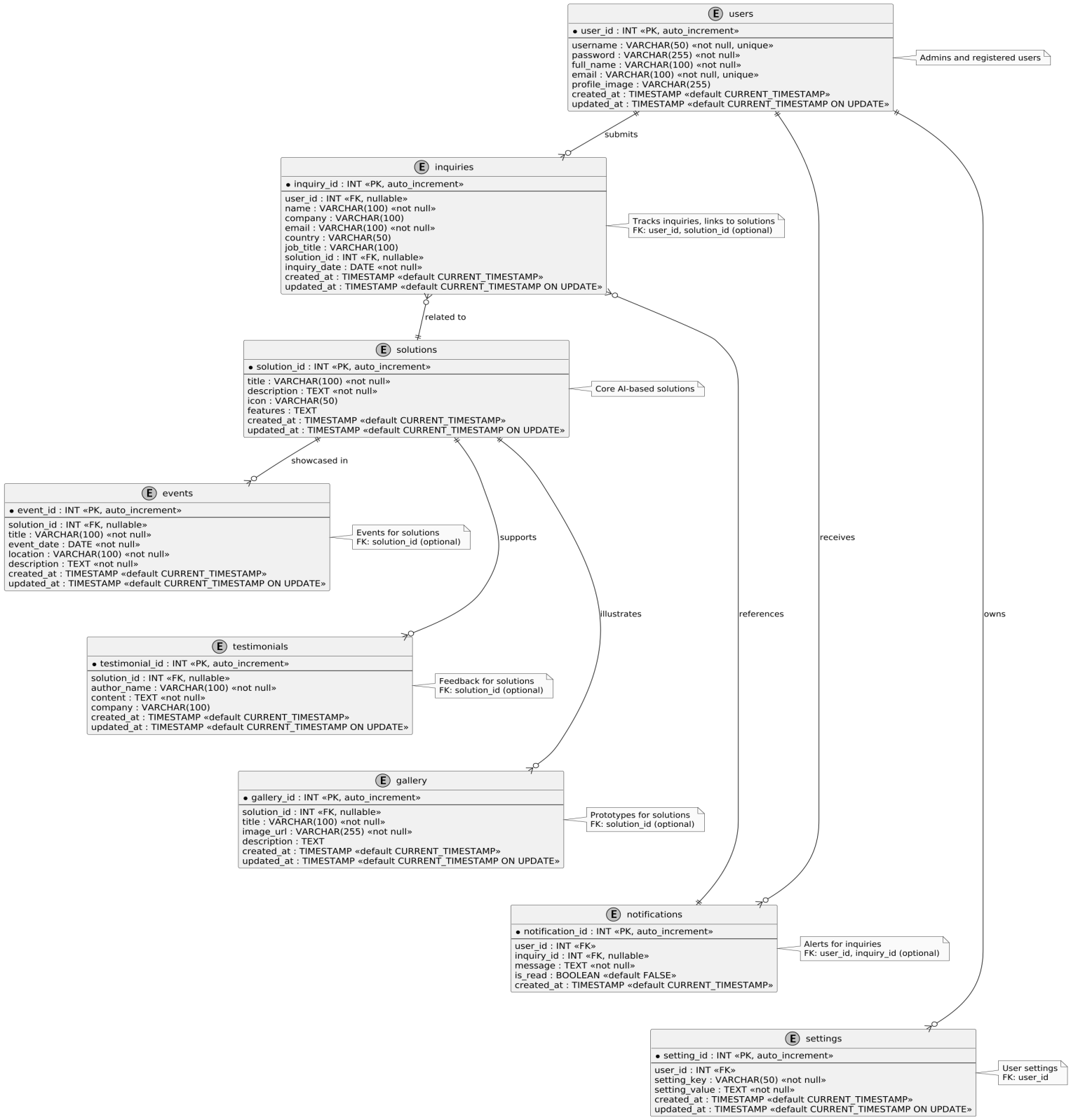
The system is design using core PHP for backend and HTML, CSS , JS with boostrap for frontend. In this website of AI- Solution every requirement of the client is implemented with better and improved UI. In the developed system user do not need to login to book our services instead they can send the inquiries by instantly providing their detail. Where as a login page is designed to access the admin dashboard for security reason of dara and site.

To get more insight of the system before developing the projecct below given wireframe is prepared and shown to the client before developing the real system.

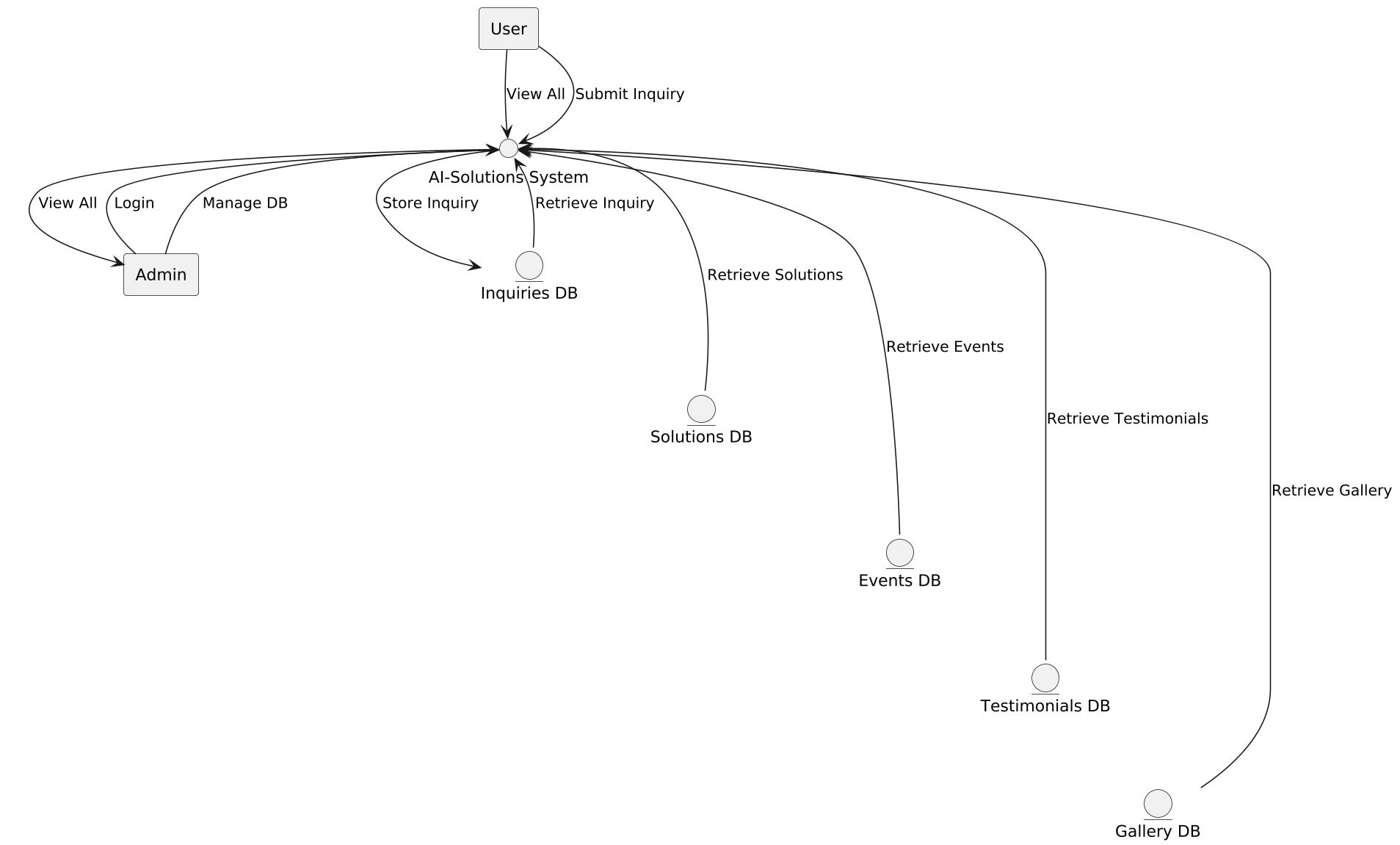
## Wireframe:



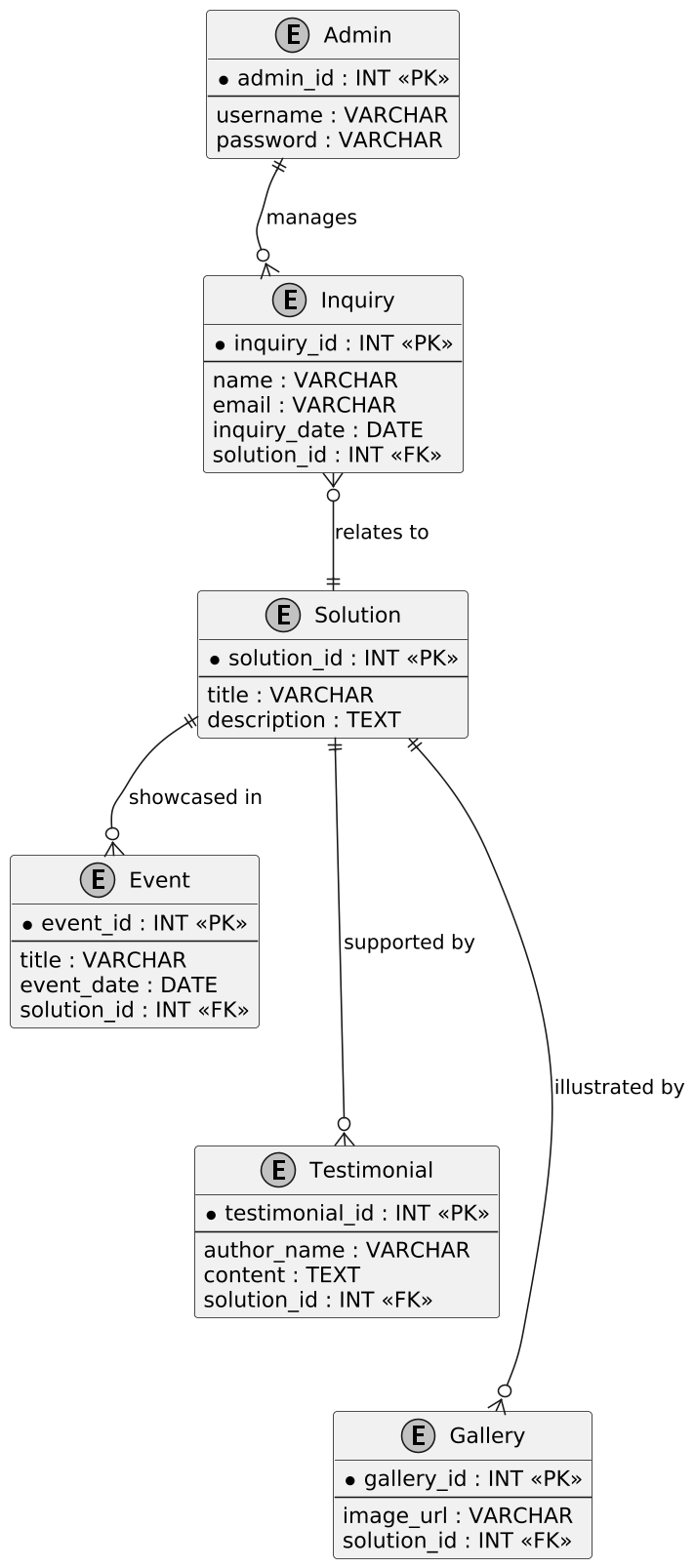
## UML Diagram



## Data Flow Diagran:



## ER- Diagram



## Front End View:

|  |  |  |
| --- | --- | --- |
| 1. | Landing Page | a1 |
| 2. | Landing page feature highlight section |  |
| 3. | Landing page testimonials and footer with quick links |  |
| 4. | Our solutions | a-2 |
| 5. | Our success stories |  |
| 6. | Our Gallery (Contain Previous event highlights) | a-3 |
| 7. | Upcoming Events |  |
| 8. | Contact Section for Inquiries | a-4 |
| 9. | Login page for Admin Authentication |  |
| 10. | Admin Dashboard to manage user side Content and Inquiries | a-6 |
| 11. | Admin profile , Change Password |  |
| 12. | Page To view Inquries |  |
| 13. | Page to Manage Solutions |  |
| 14. | Page to Manage Events |  |
| 15. | Page to Manage Testimonials |  |
| 16. | Page to Manage Gallery |  |
| 17. | Page to Manage Success Stories |  |

# Testing and Evaluation:

To ensure that the AI Solutions website meets the specified functional and non-functional requirements, I conducted multiple testing phases, including manual testing, browser compatibility testing, performance testing, and security testing. Each test verified the system’s functionality, responsiveness, and security. Below is a detailed overview of the testing methodologies and results.

## 7.1. Functional Testing

Functional testing was conducted manually by verifying different features of the system, including the Contact Us form, user authentication, AI solution showcase, and admin panel.

**7.1.1 Manual Testing:**

Each function of the website was tested by manually inputting data and checking expected outputs.

|  |  |  |  |
| --- | --- | --- | --- |
| Test Case | Expected Output | Actual Output | Status |
| User logs in with correct credentials | Redirect to Dashboard | Redirect to Dashboard | Pass |
| User enters incorrect password | "Invalid Credentials" message | "Invalid Credentials" message | Pass |
| Contact Form Submission | Data saved in database, success message shown | Data saved, success message shown | Pass |

Screenshot of manual test logs from browser console and UI included here:

|  |  |  |
| --- | --- | --- |
| Case | Front end side Test Result | Result in Browser Console |
| 1. Right Credientials |  |  |
| 1. Invalid Credientials |  |  |
| 3.  Inquiries Form Submission |  |  |

## 7.2. Browser Compatibility Testing

Since the project is developed using HTML, CSS, Bootstrap, JavaScript, and PHP, browser compatibility testing was performed to ensure the website works properly across different browsers.

|  |  |
| --- | --- |
| Browser | Result of Screenshot |
| Chrome |  |
| Microsoft Edge |  |

## 7.3. Performance Testing

Performance testing was conducted using Google PageSpeed Insights and GTmetrix to measure loading time and optimization.

**Results**

|  |
| --- |
| Google Page speed |
|  |

# Technical Deployment of the Solution

## Introduction

This section outlines my experience deploying the AI-Solutions website, a platform designed to showcase AI-powered business solutions and manage inquiries via an admin dashboard. It covers the selection of programming languages and frameworks, technical requirements, deployment instructions, and a final evaluation of the process. At this stage, the product is delivered as a ZIP file containing all source code, which can be deployed on a local machine or a web server. Below, I detail the prerequisites and steps to ensure successful deployment, reflecting the practical lessons learned during development.

## 8.2. Selection of Framework and Language

**3.2.1. Languages:**

1. **PHP**: Chosen as the backend language due to its robust server-side capabilities, seamless database integration.
2. **JavaScript:** Used for frontend interactivity, such as form validation, AJAX requests (e.g., login and logout), and Bootstrap component functionality (dropdowns, modals).
3. **HTML/CSS:** Provided the structure and styling, with CSS customized to align with the AI-Solutions brand aesthetic.

**8.2.2. Framework:**

1. **Bootstrap 5.3.3:** Selected for its responsive design features, pre-built components (e.g., navbar, cards, modals), and ease of integration with HTML/CSS/JavaScript.
2. **No Backend Framework: I**nstead of a heavy framework like Laravel, I opted for plain PHP with PDO for database access. This lightweight approach suited the project’s scope, offering flexibility and direct control over functionality.

## 8.3. Software Requirements

The AI-Solutions website requires a local server environment to run PHP and MySQL. No additional client-side software beyond a web browser is needed, making it accessible on any device once deployed.

**83.1. Server Requirements**

a) **Operating System**: Any system (Windows, macOS, Linux) with a running web server stack.

b) **Web Server Software** (**XAMPP)**:(recommended for ease of use), which includes Apache (web server), MySQL (database), and PHP.

Link: [https://www.apachefriends.org/download.html](https://www.apachefriends.org/download.html

1. **IDE:** Visual Studio Code (optional but recommended) for editing and debugging code.

Link: [https://code.visualstudio.com/Download](https://code.visualstudio.com/Download)

1. **Web Browser:** Chrome, Firefox, Edge, or Safari to view the deployed site.

**8.3.2. Dependencies**

1. PHP: Version 7.4 or higher (for PDO and password\_hash support).
2. MySQL: Version 5.7 or higher (for database storage).
3. Bootstrap: Version 5.3.3 (included via CDN in the code, no local installation needed).

## 8.4. Installation and Deployment

To deploy the AI-Solutions website on a local machine, follow these steps:

**8.4.1. Install XAMPP:**

a) Download and install XAMPP from the provided link.

b) Start the Apache and MySQL modules from the XAMPP Control Panel.

**8.4.2. Set Up the Databas:**

1. Open `http://localhost/phpmyadmin` in your browser.
2. Create a new database named `ai\_solutions`.
3. Import the provided SQL file (`database.sql`) from the ZIP package to set up tables (`users`, `inquiries`, `solutions`, `events`, `testimonials`, `gallery`). This file includes sample data for testing.

**8.4.3. Deploy the Code:**

1. Download the project ZIP file from the repository :
2. Extract the ZIP to `C:\xampp\htdocs\ai-solutions` (Windows) or `/opt/lampp/htdocs/ai-solutions` (Linux/macOS).
3. Update `db\_connect.php` with your database credentials (e.g., host: `localhost`, username: `root`, password: blank by default in XAMPP).

**8.4.4. Run the Application:**

1. Open a browser and navigate to `http://localhost/ai-solutions`.
2. The homepage (`index.php`) should load, displaying the public site.
3. Access the admin login at `http://localhost/ai-solutions/login.php` (or `index.php` if combined) using default credentials (e.g., username: `admin1`, password: `password123` — update as needed).

The site is now successfully deployed locally. For production, upload the files to a web hosting service with PHP/MySQL support (e.g., Hostinger, Bluehost) and configure the database accordingly.

## 8.5. Screencast Demonstration

A screen cast demonstrating the installation and deployment process is available below. It covers installing XAMPP, setting up the database, deploying the code, and testing key features (login, inquiry submission, admin dashboard):

Link to Screencast:

## 8.6. Final Evaluation

Deploying AI-Solutions taught me the importance of a streamlined server setup and clear user instructions. Using XAMPP simplified local testing, while Bootstrap ensured a polished UI with minimal effort. Challenges included debugging AJAX requests (e.g., JSON parsing errors) and ensuring session security, which I resolved with help from Grok (xAI). The lightweight PHP approach worked well for this scope but might need a framework like Laravel for larger projects. Overall, the deployment process is straightforward, making the solution accessible to clients with basic technical knowledge.

# ****9. Evaluation and Critical Reflection****

Developing the AI-Solutions website was a significant project aimed at promoting AI-powered business solutions and managing inquiries through an admin dashboard. At the start, I found it challenging to select appropriate programming languages and frameworks. However, after several meetings with the client and guidance from my tutor, I chose PHP for server-side development, Bootstrap for creating a responsive frontend, and MySQL for database management. My previous experience with PHP helped me navigate the development process more smoothly.

During development, I faced challenges in implementing key features. Feedback from the client during our meetings was invaluable, guiding me through planning, coding, and deployment stages. This input was crucial in refining functionalities such as the inquiry submission form and admin authentication system. To enhance user experience, I utilized Bootstrap to design a responsive layout, ensuring intuitive navigation across devices. Essential features like inquiry forms, admin login, and content management systems were successfully developed and tested. For security, I implemented password hashing and session-based authentication. Additionally, I used console logging to monitor functionality and debug issues effectively.

Time constraints prevented the inclusion of advanced features such as gallery image uploads, analytics graphs, and inquiry editing controls. These enhancements are planned for future development. Tracking progress was another challenge. To address this, I adopted an Agile methodology, creating a schedule chart and Gantt charts to set milestones like completing the login system and deploying the dashboard. Regular client feedback sessions helped monitor progress and ensure alignment with project goals. This structured approach was instrumental in keeping the project on track despite its broad scope.

Working on the AI-Solutions project was both rewarding and educational. I particularly enjoyed coding the inquiry form with real-time database integration and developing the dynamic admin dashboard. This project enhanced my skills in PHP, JavaScript, and database management. It also provided practical experience with Agile principles and full-stack development. I learned to manage timelines effectively and balance client requirements with project deadlines, with valuable support from my tutor. Overall, I am proud of the outcome and the skills I have gained through this experience.

# ****13. Conclusion****

The AI-Solutions project resulted in a functional website that meets its primary objectives: promoting AI solutions and managing inquiries via an admin interface. Client feedback played a crucial role in shaping the development process, ensuring the final product aligns with the intended goals. Future enhancements, such as incorporating analytics and content editing features, are planned to further improve the system. Reflecting on this project, I have deepened my understanding of web development, Agile methodologies (utilizing tools like Gantt charts and timelines), and the importance of iterative feedback. The AI-Solutions project showcases my growth as a developer, highlighting my abilities in coding, debugging, and deployment. It also identifies areas for improvement, particularly in project management. This experience, enriched by guidance from my tutor, has prepared me for future software development challenges, and I look forward to further enhancing this solution.