Major Project Report

on

**SHIKAYAAT – THE DIGITAL COMPLAINT PLATFORM**

Submitted for the partial fulfillment of the requirement for the degree of

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in

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**by**

**SMRUTI SNIGDHA MOHAPATRA** Regd. No: 1901287268

**SAZAD AHEMAD** Regd. No: 1901287267

**Under The Guidance Of**

Dr. Parimal Kumar Giri

****

**GANDHI INSTITUTE FOR TECHNOLOGICAL ADVANCEMENT (GITA),**

**BHUBANESWAR, ODISHA - 752054**

**ABSTRACT**

Shikayaat is a digital platform designed to provide users with a convenient and efficient way to lodge complaints with an organization. The system is accessible through a website or mobile application, and users can log in and submit complaints related to various aspects of the organization, such as products, services, or customer support.

The primary objective of the Shikayaat system is to provide a transparent and reliable channel for users to report any issues or concerns them may have with an organization. By providing an easy-to-use interface, the system helps to ensure that complaints are lodged quickly and efficiently, leading to faster resolution times and improved customer satisfaction.

The system's design is based on the principles of user-centricity and user experience. It features a simple and intuitive user interface, which allows users to log in and lodge complaints with ease. The system also provides users with real-time updates on the status of their complaints, ensuring that they are kept informed throughout the process.

One of the key advantages of the Shikayaat system is that it enables organizations to address user complaints more efficiently. By providing a central repository for complaints, the system helps organizations to track and monitor the complaints, ensuring that they are dealt with in a timely and effective manner. This leads to improved customer satisfaction and can help to build trust and confidence in the organization.

Another advantage of the system is that it helps to promote transparency and accountability in organizations. By providing a digital record of complaints and their resolutions, the system helps to ensure that organizations are held accountable for their actions, and that users can access this information when needed.

In summary, the Shikayaat system is a powerful tool for organizations looking to improve their customer service and address user complaints more efficiently. By providing a transparent and reliable channel for complaints, the system helps to build trust and confidence in organizations, while improving customer satisfaction and promoting accountability.



**Department of Computer Science & Information Technology**

**GITA ENGINEERING COLLEGE, BHUBANESWAR**

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(Smruti Snigdha Mohapatra) (Sazad Ahemad)

Regd. No: 1901287268 Regd. No: 1901287267



**Department of Computer Science & Information Technology**

**GITA ENGINEERING COLLEGE, BHUBANESWAR**

**CERTIFICATE**

This is to certify that the project work entitled **‘SHIKAYAAT’** is a bonafide work of **Smruti Snigdha Mohapatra** and **Sazad Ahemad** bearing **Registration No. #1901287268** and **Registration No. #1901287267** of B. Tech CSIT branch.

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**(XYZ) Dr. Parimal Kumar Giri**

**Project Coordinator Project Guide, HoD, CSIT**

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**1. INTRODUCTION**

**1.1 Introduction**

Shikayaat is a digital platform designed to provide users with a convenient and efficient way to lodge complaints with an organization. The system is accessible through a website or mobile application, and users can log in and submit complaints related to various aspects of the organization, such as products, services, or customer support.

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Another advantage of the system is that it helps to promote transparency and accountability in organizations. By providing a digital record of complaints and their resolutions, the system helps to ensure that organizations are held accountable for their actions, and that users can access this information when needed.

In summary, the Shikayaat system is a powerful tool for organizations looking to improve their customer service and address user complaints more efficiently. By providing a transparent and reliable channel for complaints, the system helps to build trust and confidence in organizations, while improving customer satisfaction and promoting accountability.

**1.2 Objective**

The objective of Shikayaat is to provide users with a convenient and efficient platform to lodge complaints with an organization. By offering a user-friendly interface and a transparent channel for reporting concerns, Shikayaat aims to achieve several goals:

1. **Simplify the complaint process**: Shikayaat strives to make it easy for users to submit their complaints. The platform's design focuses on user-centricity, ensuring a seamless and intuitive experience for users when lodging their concerns.
2. **Enhance customer satisfaction**: By providing a reliable and efficient channel for complaint resolution, Shikayaat aims to improve overall customer satisfaction. The system allows organizations to address complaints promptly and effectively, leading to faster resolutions and happier customers.
3. **Foster transparency**: Shikayaat promotes transparency by digitally recording complaints and their resolutions. This ensures that organizations are accountable for their actions and users have access to information regarding the progress and outcomes of their complaints.
4. **Improve organizational efficiency**: The centralized nature of the Shikayaat system enables organizations to track, monitor, and manage complaints more efficiently. By streamlining the complaint handling process, the system helps organizations identify recurring issues and implement necessary improvements.
5. **Build trust and confidence**: Shikayaat aims to build trust between users and organizations by providing a platform where complaints are taken seriously and resolved in a timely manner. By fostering open communication and accountability, the system helps establish a positive relationship between users and organizations.

Overall, the objective of Shikayaat is to create a user-centric and transparent ecosystem that facilitates effective complaint management. By addressing user concerns promptly, promoting transparency, and improving customer satisfaction, Shikayaat aims to enhance the overall experience for users and organizations alike.

**1.3 Justification and need for the system**

The justification and need for the Shikayaat system stem from several key factors:

1. **Efficient complaint management**: Organizations receive a multitude of complaints from customers on various aspects of their operations. Managing and addressing these complaints manually can be time-consuming and prone to errors. The Shikayaat system provides a streamlined approach to handle complaints, ensuring they are logged, tracked, and resolved efficiently.
2. **Enhanced customer satisfaction**: Promptly addressing customer complaints is crucial for maintaining high levels of customer satisfaction. The Shikayaat system enables organizations to respond to complaints in a timely manner, demonstrating their commitment to resolving issues and meeting customer needs. This leads to improved customer satisfaction and helps build long-term loyalty.
3. **Transparency and accountability**: Transparency is essential in today's business landscape. Customers want to know that their complaints are being taken seriously and that actions are being taken to resolve them. The Shikayaat system promotes transparency by providing users with real-time updates on the status of their complaints and maintaining a digital record of complaint resolutions, fostering accountability within organizations.
4. **Data-driven decision-making**: By centralizing complaint data, the Shikayaat system provides organizations with valuable insights into recurring issues, common complaints, and areas for improvement. Organizations can analyze this data to make informed decisions about product enhancements, process improvements, or training needs. This data-driven approach helps organizations address underlying issues and enhance overall operations.
5. **Building trust and reputation**: The Shikayaat system plays a crucial role in building trust and reputation for organizations. By providing a dedicated platform for complaint management, organizations demonstrate their commitment to customer satisfaction and their willingness to address concerns. This fosters trust among customers and contributes to a positive brand image.
6. **Streamlined communication**: The Shikayaat system facilitates effective communication between customers and organizations. Users can easily submit their complaints, provide detailed information, and receive updates on the progress of their complaints. This reduces potential miscommunication and ensures a smooth and efficient complaint resolution process.

**1.4 Advantages of the system**

The advantages of the Shikayaat system are as follows:

* Easy and Convenient: The Shikayaat system provides a simple and user-friendly interface for customers to lodge complaints, making it easy and convenient for them to register their concerns.
* Centralized Complaint Management: The system centralizes all complaints in one place, which makes it easier for organizations to manage and resolve them in a timely and efficient manner.
* Faster Resolution: The system allows organizations to respond to complaints more quickly and resolve them in a timely manner, which can improve customer satisfaction and loyalty.
* Improved Communication: With the Shikayaat system, organizations can communicate more effectively with customers about their complaints, providing regular updates on their status and resolution.
* Transparency: The system promotes transparency and accountability, providing customers with insight into the complaint resolution process and how their complaints are being addressed.
* Data Analysis: The Shikayaat system allows organizations to collect and analyze data on the types and frequency of complaints, which can be used to identify trends and patterns and take corrective action to improve products, services, or customer service.
* Cost-effective: The system can be a cost-effective solution for complaint management, reducing the need for additional personnel and administrative costs associated with handling complaints.

The Shikayaat system offers numerous advantages to organizations, including improved customer service, faster complaint resolution, greater transparency and accountability, and valuable data analysis capabilities. By leveraging the Shikayaat system, organizations can enhance their complaint management practices, improve customer satisfaction, and drive overall organizational performance.

**2. SYSTEM SPECIFICATIONS**

**2.1 Workflow**

The development of the Shikayaat system follows a streamlined process that involves planning, designing, development, testing, and deployment. Here's an overview of the development process:

1. **Planning**: In this stage, the requirements and objectives of the system are identified. The development team collaborates with stakeholders to understand their needs and define the features and functionalities required.
2. **Designing**: Based on the requirements, the system is designed, including the database schema, user interface design, and workflow. The team focuses on creating an intuitive and user-friendly interface for seamless interaction.
3. **Development**: The system is developed using PHP and MySQL for the backend, along with HTML, CSS, and JavaScript for the front-end. The team follows DevOps practices and leverages tools like Terraform, Docker, and AWS for deployment.
4. **Testing**: Comprehensive testing is conducted to ensure the system's functionality and reliability.
5. **Deployment**: Once the system passes the testing phase, it is deployed using AWS infrastructure. The team utilizes Terraform for infrastructure provisioning and Docker for containerization, ensuring scalability and efficient deployment.

Throughout the development process, the team adheres to the principles of DevOps, enabling continuous integration and deployment. This approach ensures efficient collaboration, faster feedback loops, and improved overall system quality.

The Shikayaat system is designed to address the specific needs of organizations and users, providing an effective platform for complaint management. With its user-centric design, streamlined development process, and DevOps deployment, the Shikayaat system offers a reliable and efficient solution for handling complaints and improving customer satisfaction.

**2.2 Hardware & Software requirements**

The Shikayaat system has specific hardware and software requirements to ensure its optimal performance and functionality. Let's discuss the hardware and software requirements in detail:

**2.2.1 Hardware Requirements:**

1. **Processor**: The system can run on a wide range of processors, but it is recommended to have a processor with at least dual-core capabilities to handle concurrent user requests efficiently.
2. **RAM**: A minimum of 2GB of RAM is recommended to ensure smooth operation, especially during peak usage periods when multiple users access the system simultaneously.
3. **Storage**: The system requires at least 5GB of storage space to store the application files, database, and any additional assets such as uploaded documents or images.
4. **Network Connection**: A stable internet connection is essential for the system to function properly, enabling users to access the application and communicate with the server.

**2.2.2 Software Requirements:**

1. **Operating System**: The system is compatible with various operating systems, including Windows, macOS, and Linux. It requires a stable and supported version of the operating system.
2. **Web Server**: Shikayaat utilizes the Apache or Nginx web server to host the application. Apache or Nginx provides a reliable and secure environment for serving web pages and handling HTTP requests.
3. **Database**: The system uses MySQL as the database management system. It is important to have MySQL installed and properly configured to store and manage data related to user complaints, accounts, and other system entities.
4. **Programming Languages**: Shikayaat is developed using PHP as the server-side scripting language, along with HTML5, CSS3, and JavaScript for the front-end development. It also incorporates jQuery, Swiper.js, Chart.js, TinyMCE, and Toastr libraries for enhanced functionality and user experience.
5. **Browser Compatibility**: The system is designed to be compatible with modern web browsers such as Google Chrome, Mozilla Firefox, Safari, and Microsoft Edge. Users should have an up-to-date browser version to access the application seamlessly.

**2.2.3 Additional Considerations:**

1. **Security**: It is important to implement necessary security measures, such as SSL/TLS certificates, to ensure secure data transmission and protect user information.
2. **Scalability**: If there is a possibility of a large number of users or significant data growth in the future, it is recommended to have a scalable infrastructure that can accommodate increased traffic and storage requirements.
3. **Backup and Recovery**: Regular backups of the application code, database, and any user-generated content should be performed to ensure data integrity and facilitate recovery in case of any unforeseen issues or data loss.

By meeting these hardware and software requirements, organizations can ensure that the Shikayaat system operates smoothly, provides an optimal user experience, and effectively handles user complaints and interactions.

**2.3 Apache or Nginx**

Apache and Nginx are two popular web server software used to serve web pages and handle HTTP requests. Let's take a closer look at each of them and how they work:

**2.3.1 Apache HTTP Server:**

Apache HTTP Server, commonly known as Apache, is one of the most widely used web server software in the world. It is an open-source software maintained by the Apache Software Foundation. Apache supports multiple platforms, including Windows, macOS, and Linux, making it highly versatile.

1. Request Handling: When a client (usually a web browser) sends an HTTP request to the Apache server, Apache receives the request and starts processing it.

2. Configuration: Apache uses a configuration file called "httpd.conf" to define its behavior. This file contains directives that specify various settings, such as port number, document root, and server modules.

3. Virtual Hosting: Apache supports virtual hosting, allowing multiple websites to be hosted on a single server. It uses Virtual Host directives to map different domain names or IP addresses to different website directories.

4. Module System: Apache has a modular architecture, which means it can be extended with additional functionalities using modules. Modules can handle tasks such as authentication, URL rewriting, caching, and more.

5. Request Processing: Once Apache receives a request, it goes through a series of steps to process it. This includes matching the requested URL to the appropriate virtual host, handling SSL encryption if necessary, and executing server-side scripts like PHP.

6. Content Delivery: After processing the request, Apache retrieves the requested files from the server's file system and sends them back to the client as an HTTP response. This includes HTML files, images, CSS files, JavaScript files, and any other resources requested.

7. Logging and Error Handling: Apache logs various information about the requests and server activities, which can be helpful for troubleshooting and analysis. It also handles errors and generates appropriate error messages to be sent back to the client when necessary.

**2.3.2 Nginx:**

Nginx (pronounced "engine x") is a lightweight and high-performance web server and reverse proxy server. It has gained popularity for its efficient handling of concurrent connections and its ability to handle heavy web traffic.

1. Event-Driven Architecture: Nginx uses an event-driven, asynchronous, and non-blocking architecture. It can handle many concurrent connections with low memory usage, making it highly efficient.

2. Configuration: Nginx uses a configuration file called "nginx.conf" to define its behavior. The configuration file contains directives that specify settings such as server blocks, location blocks, and proxy configurations.

3. Reverse Proxy: Nginx is often used as a reverse proxy server, which sits between the client and other web servers. It receives client requests and forwards them to the appropriate upstream servers based on the defined routing rules.

4. Load Balancing: Nginx can distribute incoming requests across multiple backend servers to achieve load balancing. It can evenly distribute the traffic or use more advanced algorithms, such as round-robin, least connections, or IP hash.

5. Caching: Nginx can cache static content, reducing the load on backend servers and improving response times. It can cache files in memory or on disk based on the cache directives specified in the configuration.

6. SSL/TLS Termination: Nginx can handle SSL/TLS encryption and decryption, relieving the backend servers from this resource-intensive task. It can also serve as a load balancer for SSL/TLS connections.

7. High Concurrency: Nginx's event-driven architecture allows it to handle a large number of concurrent connections efficiently, making it well-suited for high-traffic websites or applications.

**2.4 PHP**

PHP (Hypertext Preprocessor) is a popular server-side scripting language that is widely used for web development. It is especially suited for creating dynamic web pages and web applications. PHP code is embedded within HTML, allowing developers to mix PHP and HTML to create dynamic content.

In the context of Shikayaat, PHP plays a crucial role in the backend development of the system. It is responsible for handling various server-side tasks, processing user inputs, interacting with the database, and generating dynamic content for the web pages.

* **Server-Side Processing**: PHP runs on the server-side, which means that the PHP code is executed on the web server before the content is sent to the user's browser. This allows for server-side processing of user inputs, such as handling form submissions, validating data, and interacting with the database.
* **Database Interaction**: PHP provides built-in functions and extensions to connect to databases, such as MySQL, which is commonly used in web applications. In the case of Shikayaat, PHP would be responsible for executing database queries, retrieving and storing data, and managing the interaction between the application and the database.
* **User Authentication and Authorization**: PHP enables developers to implement user authentication and authorization mechanisms. This is essential for systems like Shikayaat, where users need to log in, access their account information, and perform actions based on their roles and permissions.
* **Handling Form Submissions**: Shikayaat likely includes various forms for users to submit their complaints or other information. PHP can handle form submissions, validate the input data, sanitize it to prevent security vulnerabilities, and store the information in the appropriate database tables.
* **Dynamic Content Generation**: With PHP, developers can generate dynamic content based on user interactions and data from the database. This allows Shikayaat to display personalized information, provide real-time updates on complaint statuses, and dynamically generate reports or statistics.

Overall, PHP is a fundamental component in the development of Shikayaat as it provides the server-side functionality required to process user inputs, interact with databases, and generate dynamic content. It allows for the seamless integration of backend logic with the frontend user interface, enabling the system to function as an efficient and user-friendly platform for lodging and managing complaints.

**2.5 MySQL**

MySQL is an open-source relational database management system (RDBMS) that is widely used for storing and managing structured data. It is one of the most popular database systems used in web development.

In the context of Shikayaat, MySQL plays a critical role in storing and managing the data related to the system. It is used to create and maintain the database that stores information such as user details, complaints, complaint statuses, and other relevant data.

Here are some key aspects of MySQL and its relevance to Shikayaat:

* **Data Storage**: MySQL provides a robust and efficient way to store structured data. It allows for the creation of tables, which define the structure and organization of the data. In the case of Shikayaat, MySQL would have tables to store information such as user details, complaints, and related data.
* **Data Retrieval**: MySQL offers powerful querying capabilities that allow developers to retrieve specific data from the database based on various criteria. This is essential for Shikayaat, as it enables the system to fetch user details, complaint information, and generate reports or analytics based on the stored data.
* **Data Integrity and Security**: MySQL provides features for enforcing data integrity rules, such as constraints and validations, to ensure that the data stored in the database is accurate and consistent. It also offers mechanisms for securing the data, such as user authentication and access control, to protect sensitive information stored in the database.
* **Scalability and Performance**: MySQL is designed to handle large amounts of data and high traffic volumes. It supports various optimization techniques, indexing mechanisms, and caching strategies to enhance performance and scalability. This is crucial for Shikayaat, as it ensures that the system can handle a growing number of users and their complaints efficiently.
* **Database Management**: MySQL provides tools and utilities for managing the database, such as creating backups, restoring data, and optimizing performance. These features help administrators maintain the integrity and availability of the database supporting the Shikayaat system.

Overall, MySQL is a vital component in the development of Shikayaat as it provides a robust and scalable database solution for storing and managing the system's data. It ensures data integrity, supports efficient data retrieval, and enables secure and reliable storage of user and complaint-related information.

**2.6 HTML/CSS**

HTML (Hypertext Markup Language) and CSS (Cascading Style Sheets) are core technologies used for building and styling web pages.

HTML is the standard markup language for creating the structure and content of web pages. It defines the elements and tags that are used to structure the content, such as headings, paragraphs, lists, images, forms, and more. HTML is responsible for defining the logical structure of a web page, including the text content and the arrangement of elements.

CSS, on the other hand, is a style sheet language used for describing the presentation and layout of web pages. It allows developers to define the visual appearance of HTML elements, such as colors, fonts, spacing, borders, backgrounds, and more. CSS separates the presentation layer from the structure layer, making it easier to modify and maintain the visual design of a website.

In the context of Shikayaat, HTML and CSS are essential for creating the user interface and designing the look and feel of the system. Here's how they are related to Shikayaat:

* **User Interface**: HTML is used to define the structure of the web pages in Shikayaat. It specifies the layout, content sections, forms, buttons, and other elements required to create the user interface. HTML tags and attributes are used to define the structure and behavior of these elements.
* **Styling**: CSS is used to style the HTML elements in Shikayaat. It allows developers to control the appearance of the user interface, including the colors, fonts, spacing, and overall visual design. CSS rules are applied to HTML elements using selectors and declarations to define the desired styles.
* **Responsive Design**: HTML and CSS are crucial for creating a responsive and mobile-friendly user interface in Shikayaat. With the help of CSS media queries and responsive design techniques, the layout and styling of the system can adapt to different screen sizes and devices, providing a consistent and optimal user experience.
* **Consistency and Branding**: HTML and CSS enable developers to maintain consistency and branding across the Shikayaat system. By defining consistent styles, colors, and layouts, the user interface can have a unified and professional appearance, aligning with the organization's brand guidelines.

HTML and CSS are fundamental technologies used in the development of Shikayaat. HTML defines the structure and content of web pages, while CSS handles the visual styling and layout. Together, they play a crucial role in creating an intuitive and visually appealing user interface for the Shikayaat system.

**2.7 JS**

JS stands for JavaScript, which is a programming language commonly used in web development. JavaScript allows developers to add interactivity and dynamic behavior to web pages.

In the context of Shikayaat, JavaScript plays a vital role in enhancing the functionality and user experience of the system. Here's how JavaScript is related to Shikayaat:

* **Client-Side Interactivity**: JavaScript is primarily executed on the client-side, meaning it runs in the user's web browser. It enables interactive features in Shikayaat, such as form validation, dropdown menus, sliders, and other user interface components. JavaScript allows for real-time validation of user inputs, ensuring that the submitted data meets the required criteria.
* **Asynchronous Operations**: JavaScript supports asynchronous programming, which is essential for handling tasks that don't require blocking the entire page. Shikayaat can utilize JavaScript's asynchronous capabilities to perform tasks like making API requests, retrieving data from a server, and updating the user interface without interrupting the user's workflow.
* **Event Handling**: JavaScript enables Shikayaat to respond to user actions and events, such as button clicks, form submissions, and mouse movements. Through event handling, JavaScript can trigger specific actions or functions based on user interactions, facilitating dynamic behavior in the system.
* **DOM Manipulation**: JavaScript provides powerful capabilities for manipulating the Document Object Model (DOM), which represents the structure of the web page. Shikayaat can leverage JavaScript to dynamically modify and update the DOM elements, allowing for seamless content updates, element creation, deletion, and other DOM manipulations.
* **Integration with APIs and Libraries**: JavaScript allows Shikayaat to integrate with various APIs and external libraries, expanding the system's functionality. For example, it can communicate with backend APIs to fetch or send data, integrate charting libraries for visualizing data, or incorporate third-party JavaScript plugins or frameworks to enhance specific features.
* **User Experience Enhancements**: JavaScript contributes to enhancing the user experience in Shikayaat by providing features like form auto-complete, data filtering, search functionality, and interactive data visualization. These enhancements improve usability, efficiency, and overall satisfaction when using the system.

In summary, JavaScript is an essential component in the development of Shikayaat, enabling client-side interactivity, asynchronous operations, event handling, DOM manipulation, integration with APIs and libraries, and various user experience enhancements. It brings dynamism and interactivity to the system, enriching the user's interaction and overall usability.

**2.8 jQuery**

jQuery is a fast, small, and feature-rich JavaScript library that simplifies HTML document traversal, event handling, and animation for web development. It provides a simplified and efficient way to interact with HTML elements, manipulate the DOM, and handle various tasks.

In the context of Shikayaat, jQuery can be used to enhance the client-side functionality of the web application, including the handling of API requests. Here's how jQuery is related to Shikayaat in terms of API request handling:

* **Manipulating Element Properties**: jQuery provides a wide range of methods to manipulate element properties like addClass(), removeClass(), attr(), val(), etc. This enables developers to modify the appearance, behavior, and attributes of elements in Shikayaat based on user interactions or other events.
* **Event Handling**: Shikayaat may have interactive components or forms that require user interaction and trigger API requests. jQuery simplifies event handling by providing methods like `click()`, `submit()`, and `change()`, making it easier to trigger API requests based on user actions.
* **Animation Functions**: jQuery provides a set of animation functions like fadeIn(), fadeOut(), slideUp(), slideDown(), etc., which can be used to add visual effects and smooth transitions to elements in Shikayaat's user interface.
* **Simplified AJAX Requests**: jQuery provides a simplified method called `$.ajax()` that allows developers to make asynchronous HTTP requests to the server. This makes it easier to send API requests and handle the responses.
* **Cross-Origin Resource Sharing (CORS)**: Shikayaat may need to make API requests to external domains, which can be restricted due to security policies. jQuery helps handle CORS-related issues by automatically setting the necessary headers and making the appropriate requests.
* **Response Handling**: jQuery offers a range of methods to handle API responses, such as `success()`, `error()`, and `complete()`. These methods allow developers to process the response data, handle errors, and perform additional actions based on the API request's outcome.
* **Custom Animations**: jQuery allows developers to create custom animations using the animate() function. This enables the implementation of interactive and engaging effects, such as fading, sliding, and scaling, to enhance the user experience in Shikayaat.

Overall, jQuery enhances the development process in Shikayaat by providing a simplified and efficient way to handle API requests, interact with the server, and handle responses. It streamlines the client-side scripting tasks, making the implementation of API request handling smoother and more manageable.

**2.9 Git**

Git is a distributed version control system (VCS) that allows developers to track changes in source code and collaborate effectively on software development projects. It is related to Shikayaat in the following ways:

* **Collaboration**: Git facilitates collaboration among developers working on the Shikayaat project. Multiple developers can work on different parts of the codebase simultaneously and merge their changes together using Git. It provides features such as branching and merging, which enable developers to work on separate code branches and later combine their changes into a single codebase.
* **Branching Strategy**: Git's branching capabilities are beneficial for Shikayaat's development workflow. Developers can create feature branches to work on specific features or bug fixes without affecting the main codebase. This allows for isolated development and easier management of multiple development tasks. Branches can be merged back into the main branch when the features are completed or issues are resolved.
* **Code Organization**: Git helps in organizing the codebase of Shikayaat by providing a structured approach to managing files and directories. It allows developers to track changes at a granular level and keep the codebase organized by creating meaningful commit messages and maintaining a clear project structure.

**2.10 VS Code**

Visual Studio Code (VS Code) is a source code editor developed by Microsoft. It is a lightweight yet powerful editor that supports various programming languages and provides a wide range of features to enhance the development experience. VS Code is related to Shikayaat in the following ways:

* **Code Editing**: VS Code provides a rich set of features for editing code, including syntax highlighting, intelligent code completion, code formatting, and linting. These features make it easier for developers working on Shikayaat to write clean and error-free code.
* **Integrated Terminal**: VS Code has an integrated terminal that allows developers to run commands and interact with the command-line interface directly within the editor. This feature is useful for executing commands related to the development and deployment of Shikayaat, such as running tests, starting local servers, or executing Git commands.
* **Debugging**: VS Code offers a built-in debugger that supports various programming languages. Developers can set breakpoints, inspect variables, and step through the code to troubleshoot and debug issues in the Shikayaat application.
* **Extensions Ecosystem**: VS Code has a vast ecosystem of extensions that can be installed to extend its functionality. There are numerous extensions available for web development, database management, Git integration, API testing, and more. Developers working on Shikayaat can leverage these extensions to enhance their productivity and streamline their workflow.

**Collaboration**: VS Code supports collaborative development through its Live Share extension. It allows multiple developers to work on the same codebase simultaneously, facilitating real-time collaboration, code sharing, and pair programming. This feature can be valuable for Shikayaat developers working together on specific tasks or troubleshooting issues.

**3. DESIGNING & DEVELOPMENT**

**3.1 UI Designing**

The UI design of Shikayaat is carefully crafted to provide users with a visually pleasing and intuitive interface. It incorporates principles of user-centered design and aims to create a seamless and engaging user experience. The design process involves several stages, including research, wireframing, prototyping, and iteration.

The color scheme of Shikayaat primarily consists of blue, white, and grey. Let's explore the reasons behind this choice:

* Blue: Blue is often associated with trust, reliability, and professionalism. It conveys a sense of security and stability, which is crucial for a platform like Shikayaat that deals with user complaints and concerns. The blue color scheme helps to establish trust between users and the system, enhancing their confidence in the complaint resolution process.
* White: White is a clean and neutral color that promotes a sense of clarity and simplicity. It provides a clean canvas for the content and allows important elements to stand out. The use of white space in the UI design of Shikayaat helps to create a visually balanced and uncluttered interface, making it easier for users to navigate and focus on the relevant information.
* Grey: Grey is a versatile color that adds depth and sophistication to the design. It is often used as a neutral background color or for highlighting secondary elements. In the context of Shikayaat, the grey color scheme helps to create visual hierarchy and differentiate between primary and secondary components, ensuring that users can quickly identify and interact with important elements.

Additionally, the color scheme of Shikayaat is carefully chosen to provide a harmonious and aesthetically pleasing visual experience. The combination of blue, white, and grey creates a modern and professional look, aligning with the overall branding and image of Shikayaat as a reliable and efficient complaint management system.

The UI design of Shikayaat also focuses on usability and accessibility. Clear typography, appropriate font sizes, and intuitive navigation elements are used to enhance readability and ease of use. Consistent use of icons and visual cues helps users to understand the functionality and actions available to them.

Throughout the design process, user feedback and usability testing play a crucial role. The design team conducts user research, collects feedback, and iterates on the design to ensure that it meets the needs and preferences of the target users. This iterative approach helps to refine the UI design of Shikayaat and create an interface that is visually appealing, user-friendly, and conducive to a positive user experience.

Overall, the UI design of Shikayaat is thoughtfully planned and executed to provide users with an engaging and seamless experience. The color scheme of blue, white, and grey is chosen to convey trust, simplicity, and professionalism while creating a visually pleasing and harmonious interface.

**3.2 HTML/CSS conversion from Design Images**

HTML/CSS conversion from design images is a crucial step in the process of creating a website or application. It involves transforming visual design mockups or wireframes into functional HTML and CSS code that accurately represents the intended design and layout.

To achieve the HTML/CSS conversion for Shikayaat, a systematic approach was followed:

* **Analyzing the Design**: The design images were carefully examined to understand the layout, structure, and visual elements. This analysis helped in identifying the different components and sections that needed to be translated into HTML and styled with CSS.
* **Structuring the HTML**: The HTML structure was created to reflect the hierarchy and organization of the design. Semantic HTML tags were used to provide meaning and structure to the content. Containers, sections, headings, paragraphs, and other HTML elements were utilized to represent the design elements accurately.
* **Styling with CSS**: CSS was used to add styles, colors, typography, spacing, and visual effects to the HTML structure. The design images served as a reference for defining the colors, font sizes, font families, backgrounds, borders, and other stylistic attributes. CSS classes and selectors were used to target specific elements and apply the desired styles.
* **Responsive Design**: As Shikayaat is likely to be accessed from different devices and screen sizes, the HTML and CSS code was implemented with a responsive design approach. Media queries and CSS techniques, such as flexbox or grid, were utilized to ensure that the UI adapts and displays appropriately on various screen sizes.

VS Code with the Live Server extension was employed during the HTML/CSS conversion process for continuous improvement of the UI. The Live Server extension enables real-time preview of the HTML and CSS changes, allowing developers to see the immediate impact of their code modifications. This feature helps in making adjustments, refining the design, and quickly identifying any layout or styling issues.

By utilizing VS Code with the Live Server extension, the development team working on Shikayaat could streamline the HTML/CSS conversion process, view the UI changes in real-time, and make necessary adjustments efficiently. This iterative approach facilitated faster development and ensured that the UI closely matched the design images, enhancing the overall user experience.

In summary, the HTML/CSS conversion from design images for Shikayaat involved carefully analyzing the visual elements, structuring the HTML, applying appropriate CSS styles, and utilizing VS Code with the Live Server extension for continuous improvement and real-time preview. This process enabled the translation of the design into a functional and visually appealing user interface.

**3.3 UX Improvement & Animations**

To improve the user experience (UX) and incorporate animations in Shikayaat, a combination of CSS and jQuery was utilized. Here's how UX improvement and animations were implemented:

CSS Animations: CSS animations were employed to add visual effects and transitions to various elements on the page. Keyframes were defined in CSS to specify different animation states, and then these keyframes were applied to elements using CSS properties like `animation` or `transition`. This approach allowed for smooth and visually appealing animations without the need for JavaScript.

jQuery Animations: jQuery, a JavaScript library, was used to create more complex and interactive animations. jQuery provides built-in animation methods such as `fadeIn()`, `fadeOut()`, `slideUp()`, and `slideDown()`, which can be used to animate elements on the page. These animations were applied to elements like menus, modal pop-ups, or sliding panels to enhance the overall user experience.

Page Preloader: To provide a seamless experience while the page is loading, a page preloader was implemented. This involved displaying an animated loading indicator or a custom-designed animation while the page content and assets were being loaded. This gives users visual feedback that the page is loading and reduces the perception of a slow-loading website.

Styled Buttons and Transitions: Buttons in Shikayaat were given a unique style and incorporated with animated transitions. CSS was used to customize the button appearance, such as background color, border styles, hover effects, and transitions. These animations and transitions provided visual feedback to users when interacting with buttons, making the user interface more engaging and intuitive.

By combining CSS animations, jQuery animations, page preloader, and styled buttons with transitions, the UX of Shikayaat was enhanced. These elements added a sense of interactivity, responsiveness, and visual appeal to the user interface. Animations and transitions helped to guide user attention, provide feedback, and create a more enjoyable and intuitive experience for users interacting with the system.

**3.4 Implementing Responsiveness**

Responsive design is a fundamental aspect of designing the user interface of Shikayaat. It ensures that the system adapts and displays properly across different devices and screen sizes, providing an optimal user experience regardless of the device being used. Here's an overview of how responsive design was implemented in Shikayaat:

Fluid Layout: The layout of Shikayaat was designed using a fluid grid system. Instead of using fixed pixel-based widths, elements were defined using relative units such as percentages. This allows the content to adjust and resize proportionally based on the screen size, ensuring that it fills the available space appropriately.

Media Queries: Media queries were employed to apply specific CSS styles based on the device's screen size. Different breakpoints were defined to target different screen widths, allowing for custom styling and layout adjustments at each breakpoint. Media queries enabled the system to adapt its design to provide an optimized experience on various devices, including desktops, tablets, and smartphones.

Flexible Images: Images used in Shikayaat were made responsive by using CSS properties such as `max-width: 100%` to ensure they scale proportionally with the parent container. This prevents images from overflowing or becoming distorted on smaller screens.

Mobile-First Approach: Shikayaat was designed using a mobile-first approach. This means that the initial design and layout considerations were focused on mobile devices. As the screen size increases, additional design elements and functionality were progressively added. This approach ensures that the system delivers a seamless experience on smaller screens while also accommodating larger screens.

Responsive Typography: Typography plays a crucial role in responsive design. Font sizes, line heights, and spacing were defined using relative units and fluid scaling to ensure readability and legibility across different devices. Media queries were used to adjust typography styles at different breakpoints, providing an optimal reading experience.

Touch-Friendly Interactions: In addition to layout and visual adjustments, responsive design in Shikayaat also accounted for touch-friendly interactions. Buttons and other interactive elements were designed with an appropriate size and spacing to accommodate touch gestures, ensuring that users can easily interact with the system on touch-enabled devices.

Overall, responsive design in Shikayaat was implemented to provide a consistent and user-friendly experience across a wide range of devices. By employing fluid layouts, media queries, flexible images, mobile-first approach, responsive typography, and touch-friendly interactions, Shikayaat ensures that users can access and interact with the system seamlessly, regardless of the device they are using.

**3.5 File Structure Implementation**

Certainly! Let's take a closer look at the directorys and their purposes in the directory structure of Shikayaat:

1. **assets**:

It is used to store various static assets required by the system. It typically includes subdirectories for CSS, fonts, images, JavaScript, uploads, and vendors.

* + **css**: This directory contains CSS files that define the styling of the system. It includes stylesheets for various components, layouts, and responsive design.
  + **fonts**: Any custom fonts used in the system are stored in this directory. These fonts can be referenced and applied to different elements in the system's UI.
  + **images**: This directory holds all the images used throughout the system, including logos, icons, background images, and any other visual assets.
  + **js**: JavaScript files that provide interactivity and functionality to the system are stored here. It includes scripts for form validation, dynamic content loading, and other client-side operations.
  + **uploads**: This directory is used to store user-uploaded files, such as profile pictures, attachments, or any other media files.
  + **vendors**: Third-party libraries and dependencies used in the system are stored in this directory. It helps to keep the project organized and separate from custom code.
    - **apex-charts**: Contains the Apex Charts library, which is used for data visualization, such as charts and graphs.
    - **swiper-slider**: Includes the Swiper Slider library, which provides carousel and slider functionality for showcasing content.
    - **toastify**: This directory holds the Toastify library, which is used for displaying toast notifications or alert messages.

1. **change-password**:

It is used to store functionality related to changing user passwords. It is common to have a dedicated directory or directory to organize code and files specific to a particular feature or functionality

* **forgot**: This directory contains the necessary files for implementing the "forgot password" feature. It may include HTML templates, JavaScript code, and server-side logic for handling password recovery.

1. **includes**:

It is used to store core functionalities of the system, including API configurations, database configurations, and common code files such as "functions.php" and "classes.php". It is a common practice to have a centralized location for essential code files that are used across different parts of the system. It has configuration files for connecting to the database, setting up API credentials, or defining constants and global variables used throughout the system. The "functions.php" file typically contains commonly used functions and utilities, while the "classes.php" file might contain class definitions and object-oriented code.

* **components**: This directory houses reusable components that are used across different pages of the system. Examples of components can include header, footer, navigation menu, or any other UI element that is used repeatedly.
* **pages**: Contains page templates that define the structure and layout of different pages in the system. Each page may consist of HTML, CSS, and JavaScript code specific to that particular page.

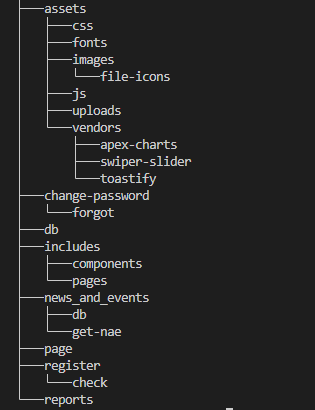
1. **page**:

This directory contains the main page files of the Shikayaat system. It typically includes index.html or home.html, which serves as the entry point or landing page of the application. Additional pages, such as about.html, contact.html, or complaint.html, may also be included in this directory.

1. **register**:

It is used to store functionalities related to new user registration. It serves as a dedicated location for all the files and code related to the new user registration process.

* **check**: This directory contains files related to user registration and validation. It may include server-side scripts that handle form submission, validate user input, and interact with the database to store user information securely.



The directory structure of Shikayaat is designed to maintain organization and separation of concerns. It helps to group related files together, making it easier to locate and manage specific functionalities. By organizing assets, components, and pages into distinct directorys, developers can maintain a clear structure and enhance code reusability.

**3.6 The includes directory**