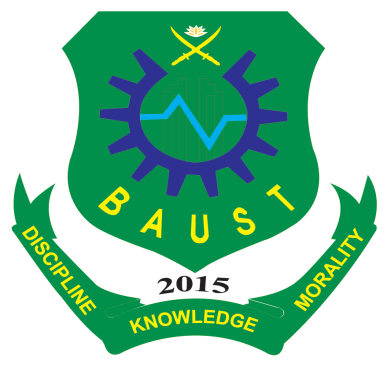
**Project Report**

**Bangladesh Army University of Science Technology (BAUST)**



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**Course Cod**e: CSE 3200

**Course Titl**e: Web Engineering Project

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**1.1**

**Introduction**: Gaming has become an essential part of modern-day entertainment, and classic games like Snake continue to captivate players worldwide. Slither and Score is a gaming website that aims to provide a new and exciting gaming experience through the Snake game. The website will feature various game modes and levels, user accounts, and a high score system that motivates players to achieve their best scores. Snake is a simple yet addictive game that involves controlling a snake as it moves around the game board, eating food, and growing longer. As the snake grows longer, the game becomes more challenging, and the player must avoid hitting the walls or the snake's body. This classic game has been played by millions of people worldwide and continues to be a popular choice among gamers of all ages.

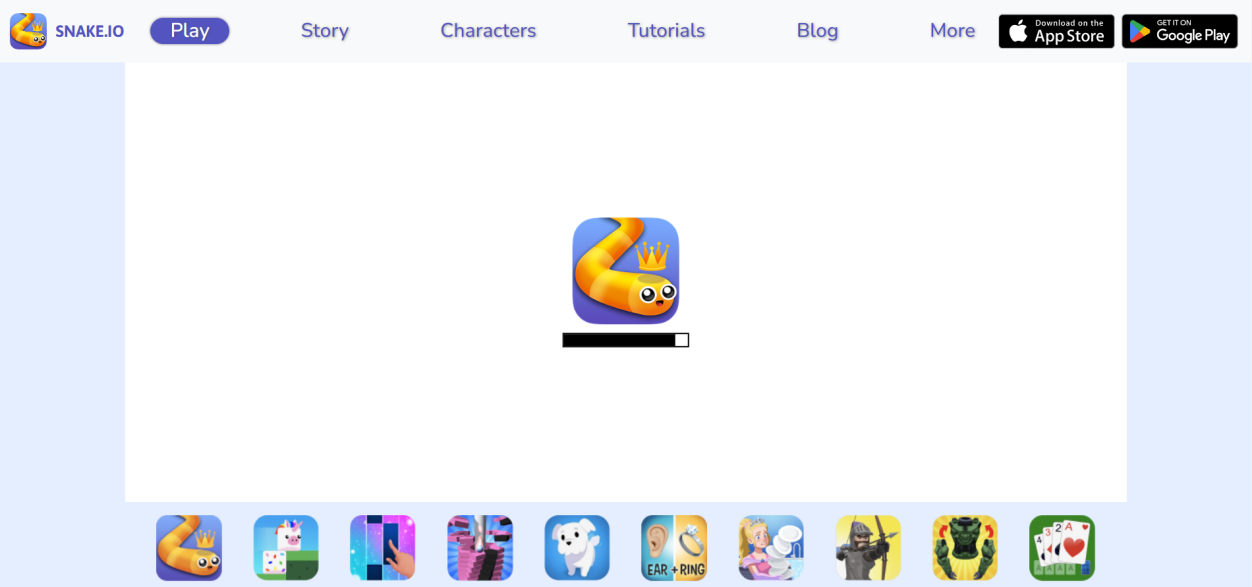
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Figure 1.1.1: snake game in snake.io website

**1.2**

**Objectives**: This game aims to change the way people think of traditional snake game. It will offer the experience of commercial multilayer games to the player retaining the simplicity of traditional snake game.

* To design and develop a gaming website with a Snake game that is enjoyable and user-friendly.
* To provide multiple game modes and levels to challenge users of different skill levels.
* To allow users to create accounts and save their game progress.
* To implement a high score system that motivates users to beat their own and others' scores.
* To ensure the website is responsive and compatible with different devices and browsers.

**1.3**

**Problem Definition** :

* The development of a visually appealing and user-friendly design that is easy to navigate.
* Ensuring that the website is responsive and compatible with different devices and browsers.
* Developing multiple game modes and levels that cater to different skill levels. Creating game mechanics that are precise and responsive, ensuring that players can control the snake with ease.
* Developing a user account system that allows users to save their progress and compete with others on the high score leaderboard.
* Storing user data and game statistics on the website.
* Ensuring that the high score system accurately tracks and displays the top scores achieved by users in each game mode and level.
* Encouraging competition among users by providing a high score system and leaderboard.
* Ensuring that the website is secure and that user data is protected.
* Developing a website that is scalable and can handle a large number of users and game data.

**2.Diagram**

**2.1 Usecase diagram:**

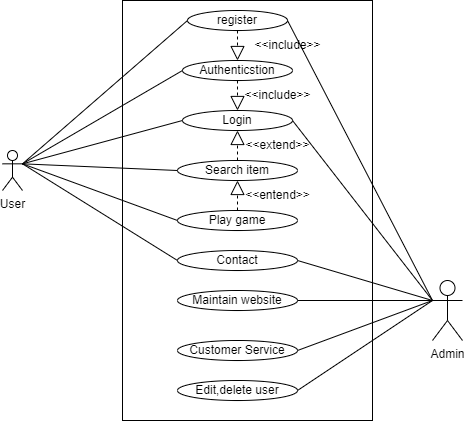
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Figure 2.1.1 : Usecase diagram for gaming website

A use case diagram is a powerful tool for visualizing the various ways in which users interact with a gaming website. The primary actor is the player, who interacts with the website through actions such as browsing games, creating an account, and playing games. Other actors include game developers, publishers, and customer service representatives, each with their own set of associated use cases. Additionally, system-level use cases are included for maintaining the website's functionality. By using a use case diagram, developers can ensure that the website runs smoothly and efficiently, providing an optimal user experience for players.

**2.2**

**Data Flow Diagram:**

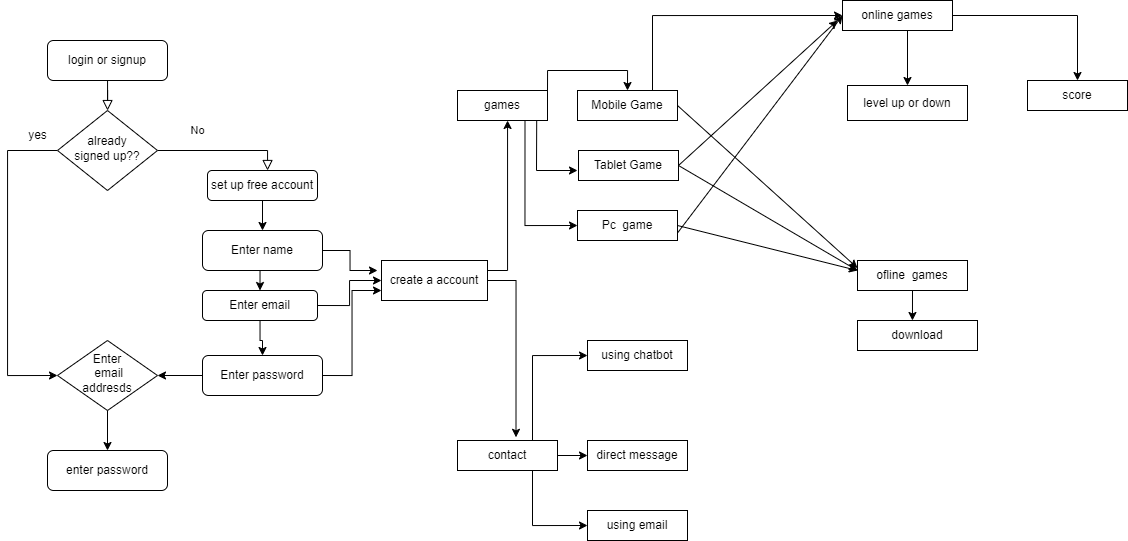
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Figure 2.2.1: data flow diagram for gaming website

A data flow diagram (DFD) for a gaming website shows how data flows through the system, from the player to the website and external systems such as payment processors or game developers. The player interacts with the website by performing actions such as browsing, purchasing, and playing games. The data generated by these interactions flows into the website's internal systems, where it is transformed and processed by components such as data validation and user authentication. The resulting data is then sent back to the player. By creating a DFD, developers can identify potential areas for optimization and improvement.

**2.3**

**Activity Diagram :**

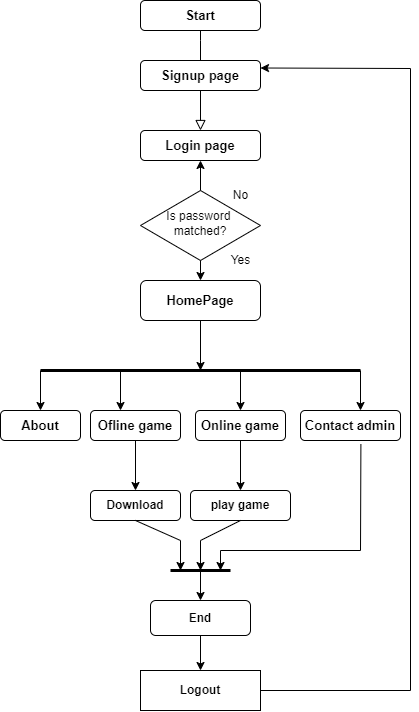
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Figure : 2.3.1 Activity diagram for user in gaming website

An activity diagram is a type of UML diagram that models the behavior of a system. In the context of a gaming website, an activity diagram can be used to visualize the different tasks that a user performs while interacting with the website, such as browsing for games, creating an account, purchasing a game, and playing a game. Each task is represented as an activity in the diagram, with arrows indicating the order in which they are completed. By using an activity diagram, developers can gain a clear understanding of the user's actions and design the website to provide a seamless and enjoyable user experience.

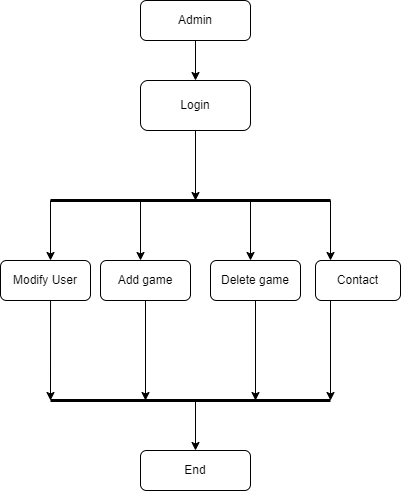
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Figure : 2.3.2 Activity diagram for admin in gaming website

An activity diagram for an admin in a gaming website would show the tasks they perform, such as managing user accounts, uploading and updating games, and monitoring website activity. This diagram would provide a clear visual representation of the admin's actions and how they interact with the website's internal systems.

**2.4**

**Class diagram**

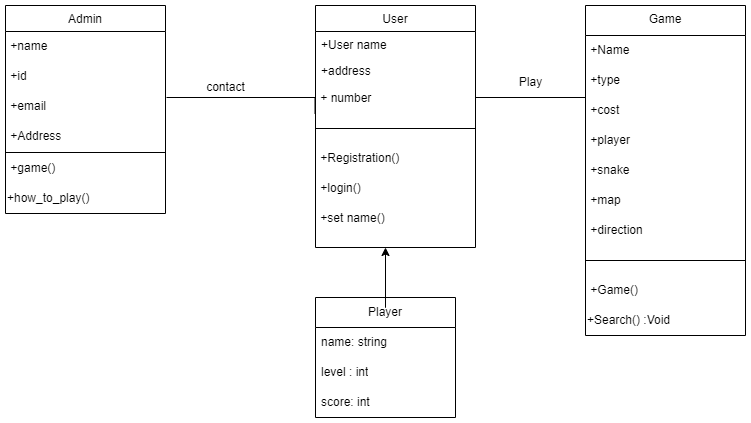
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Figure 2.2.1: Class diagram for gaming website

A class diagram is a graphical representation used in object-oriented programming to depict the classes, interfaces, and their relationships within a system or application. It provides a clear visual understanding of the system structure and helps developers to plan, design and implement their software. By illustrating the hierarchy of the classes and their interactions, a class diagram facilitates communication among stakeholders and ensures a shared understanding of the system architecture.

**3.Implementation**

**3.1 Signup page :**

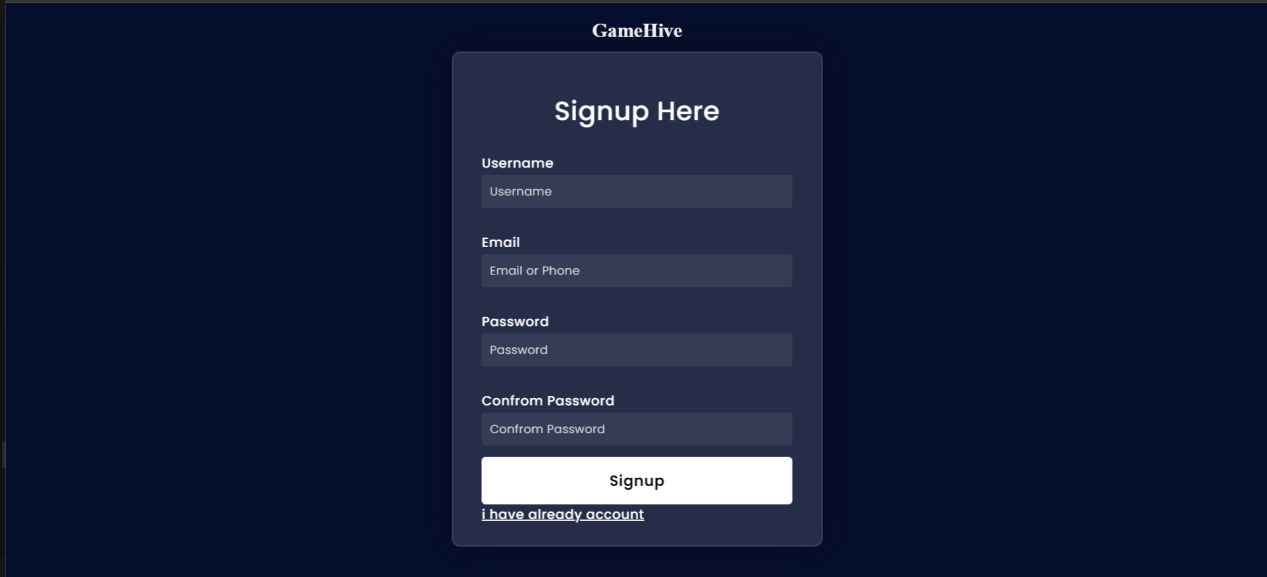
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Figure : 3.1.1 Signup page for gaming website

**3.2 Login page:**

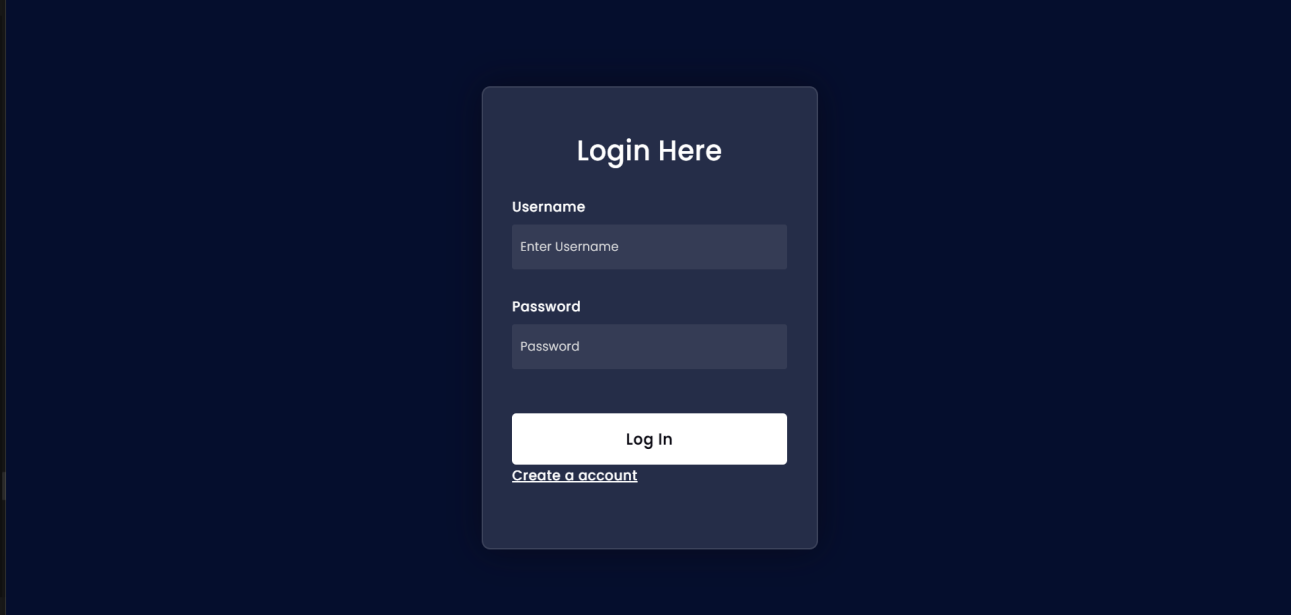
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Figure :3.2 login page for gaming website

**3.3 Home page:**

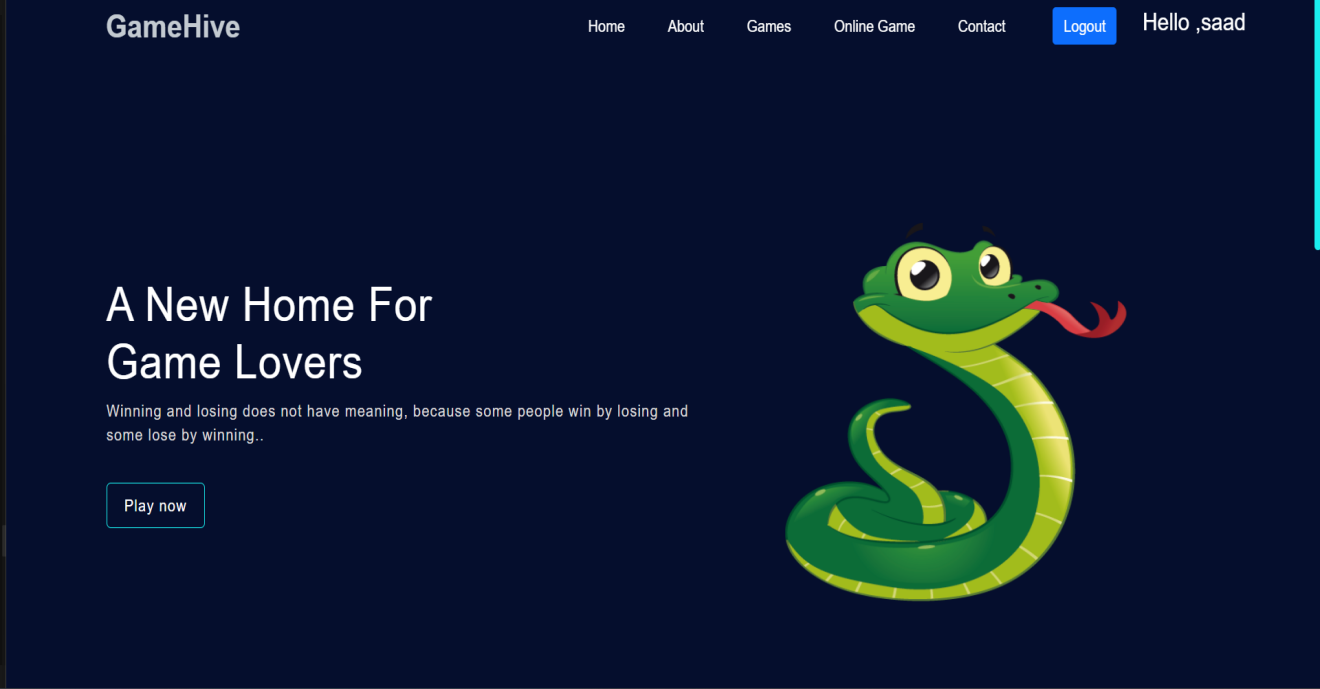
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Figure : 3.3.1 Home page for gaming website

**3.4 About us:**

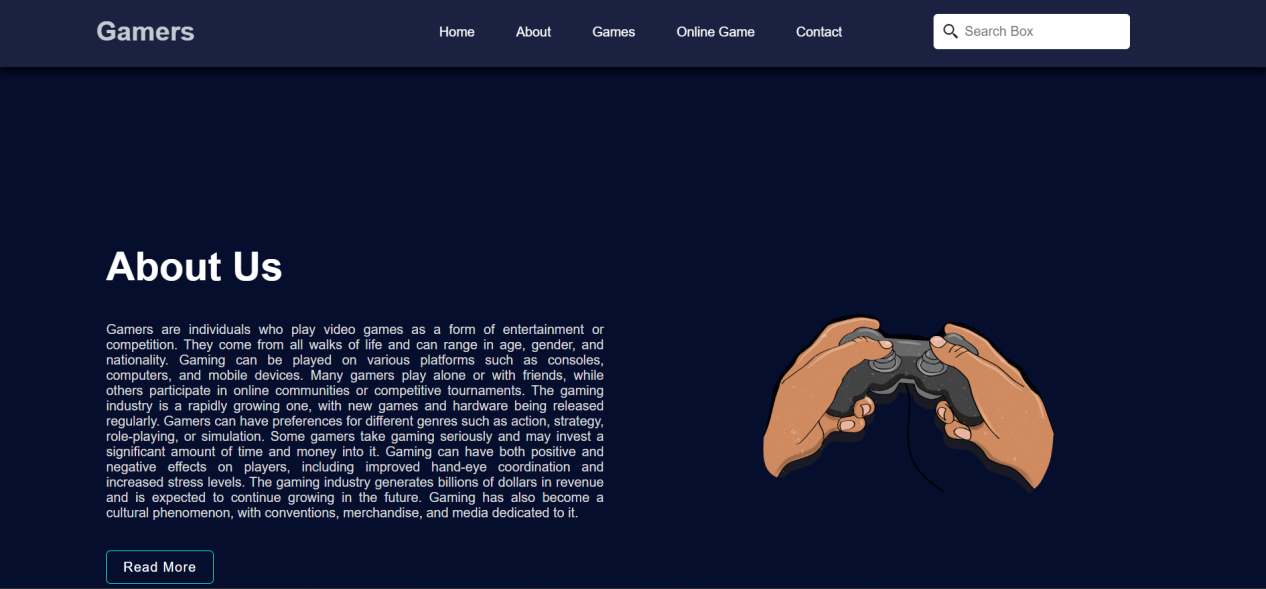
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Figure : 3.4.1 About us page for gaming website

**3.5 Contact us:**

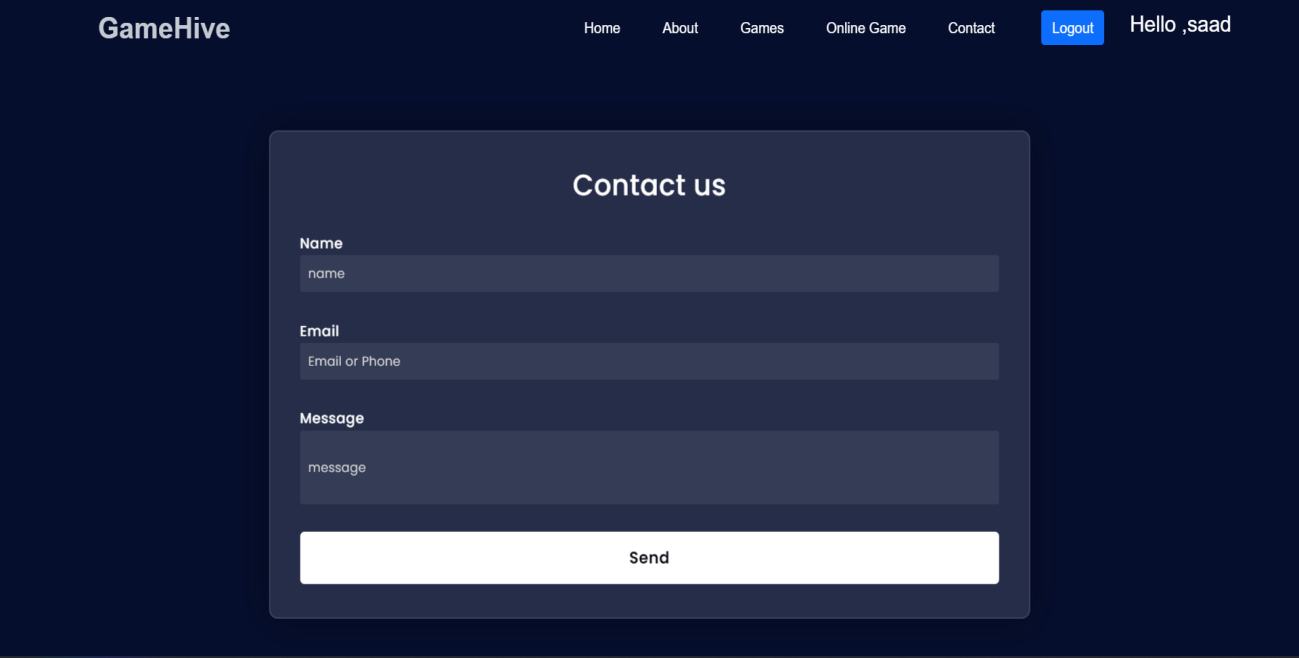
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Figure : 3.5.1 Contact us page for gaming website

**4 .Tools Used:**

The Slither and Score gaming website was developed using a variety of web development tools, including HTML, CSS, and JavaScript.

* HTML, or Hypertext Markup Language, is the foundation of the website and is used to create the basic structure and content of the website. HTML tags are used to define the various elements of the website, including the header, footer, navigation menu, and content.
* CSS, or Cascading Style Sheets, is used to control the presentation and styling of the website. CSS is used to define the fonts, colors, layout, and other visual elements of the website. The website uses a combination of CSS and HTML to create a visually appealing and responsive design that is easy to navigate.
* JavaScript is used to create the game mechanics and functionality of the website. JavaScript is a programming language that is used to create interactive and dynamic elements on a website. In the case of Slither and Score, JavaScript is used to create the snake game, including the movement of the snake, the food, and the collision detection. JavaScript is also used to create the user account system and high score leaderboard, which allows users to track their progress and compete with others.

In addition to these core web development tools, other tools were used to aid in the development of the website. These include:

* Bootstrap, a popular front-end development framework, which provides pre-built HTML and CSS templates that can be used to create responsive and mobile-friendly websites.
* jQuery, a JavaScript library that simplifies the development of web applications by providing a range of pre-built functions and utilities.
* Django: Django is a Python web framework following the MVC architecture, offering built-in features like ORM, URL routing, templating, and an admin interface. Its scalability, reusability, and security make it a preferred choice for creating web applications. It is widely used and supported by a strong community.

Git, a version control system that allows developers to track and manage changes to the codebase over time. This makes it easier to collaborate with other developers and maintain the website over time.

Overall, the combination of HTML, CSS, and JavaScript, along with other web development tools, allowed the development team to create a responsive, visually appealing, and engaging gaming website that meets the needs of the target audience.