**Stack Overflow Search Functionality**

The Stack Overflow application leverages ASP.NET MVC to deliver a robust search experience. Users can enter queries directly on the home page through a dedicated search bar. Upon submission, the search functionality within the Home Controller processes the submitted data and retrieves relevant results from the database. These results are then displayed on the dedicated Search Results view, featuring pagination for an enhanced user experience.

**Centralized Search Results with Dynamic Updates**

The Search Results view acts as a central hub for all search queries, offering a clear and accessible interface for navigating search results. This view utilizes AJAX to dynamically update content based on user interaction or changes in search terms. This allows for a seamless browsing experience and efficient exploration of the platform's resources. The pagination functionality is implemented using Progressive Loading, ensuring smooth navigation through large result sets.

**Efficient Search Result Processing and Pagination**

The Search action within the controller retrieves paginated search results from the database based on the specified search term and the current page number. It calculates the appropriate starting index (skip count) for pagination. After fetching the relevant page of posts, the action calculates the total number of pages required for the complete result set. Additionally, it converts the retrieved posts into a custom post model containing essential details. Furthermore, the action determines the start and end page numbers displayed for pagination. If the request originates from an AJAX call, the action returns a partial view containing only the search results. Otherwise, it returns the full Search Results view with the results embedded. This approach optimizes the management of search results, ensures efficient pagination, and empowers a seamless user experience through AJAX functionality.

**Conclusion**

This implementation exemplifies the core functionality of the Stack Overflow MVC web application. It provides users with a powerful and intuitive interface for discovering relevant content within the vast Stack Overflow ecosystem.