Why do we use validation controls in ASP.NET?

Validation controls are an essential part of ASP.NET web development because they help ensure the integrity of user input.

Some of the reasons why validation controls are important in ASP.NET are:

* Preventing invalid data from being submitted: Validation controls can check for required fields, format and type of data, and other criteria that must be met before the data can be submitted to the server.
* Improving user experience: When users enter invalid data, they may receive error messages or other feedback that helps them correct their mistakes. This can help prevent frustration and improve the overall user experience.
* Enhancing security: Validation controls can help prevent malicious code or other attacks that could harm the web application or its users. For example, validation controls can check for potentially dangerous input such as SQL injection or cross-site scripting (XSS) attacks.
* Meeting business requirements: Many businesses have specific rules and requirements for data entry, such as a minimum or a maximum number of characters or certain formatting conventions. Validation controls can help ensure that these requirements are met.

Client-side validation vs. server-side validation in ASP.NET

ASP.NET supports two types of validation controls:

1. Client-side validation controls
2. Server-side validation controls

Client-side validation is good, but we must depend on browser and scripting language support. The client-side validation is done in the user's browser using JavaScript and another scripting.

Server-side validation in ASP.NET is done in the C# code-behind, where the value of the user input is read and validated on the server. This process is time-consuming but provides better security and is easier to implement in ASP.NET.

For example, if an app wants to check the date range, the date value will be read from ASP.NET in C#, and the C# code behind the validation method will be compared against the rules.

Validation Controls in ASP.NET

ASP.NET provides several types of validation controls that can be used to validate user input in web forms. Some of the common validation controls are:

1. RequiredFieldValidation Control
2. CompareValidator Control
3. RangeValidator Control
4. RegularExpressionValidator Control
5. CustomValidator Control
6. ValidationSummary

The below table describes the controls and their use.

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| --- | --- |
| : Validation Control | Description |
| RequiredFieldValidation | This control ensures that a field is not left empty or blank. It can be used for textboxes, dropdown lists, checkboxes, and other input controls. |
| CompareValidator | This control compares the value of one input control to another. It can validate passwords, confirm email addresses, and other scenarios where two values must match. |
| RangeValidator | This control checks if a value falls within a specific range. For example, it can be used to validate a user's age, income, or date of birth. |
| RegularExpressionValidator | This control checks if a value matches a specified regular expression pattern. For example, it can validate email addresses, phone numbers, zip codes, and other input types. |
| CustomValidator | This control allows developers to define their validation logic. It usually depends on the business rules. |
| ValidationSummary | This control displays a report of all validation errors that occurred on a Web page. |