Data Validation

Data validation is commonly applied to forms and form data. These validations are often implemented in several layers using different technologies. The goal is to get the best data possible from the user into your web application. It is also imperative to protect your database and application from malicious data.

HTML and field selection is used as the first line of validation using various attributes and techniques to enforce good form data. A good practice is to use dropdown lists, checkboxes and radio buttons whenever possible. This reduces the opportunities for data entry error and encourages data standardization between users. Other techniques include using form element attributes to establish default values, field sizes, etc.

Javascript is often used to validate form data on the client computer. This frees up server side resources for other purposes. Because javascript is within the browser communicating with the user can be done quickly and dynamically. It can even be done as the user types in their data. Using javascript is the first processing step but should be not the only data validation of the form data.

Server side validation often duplicates the client side validation. This may seem redundant but it is highly recommended. There are validations on the server that are more powerful or only available on the server. Among these are the SQL validations of your data. The primary difficulty with server side validation is the difficulty of communicating any errors to the user.

One of the most common techniques for server side form validation is using a ‘self-posting’ form. A self-posting form submits to itself for validation and displays again with any error messages for the user. This is a difficult process to understand when first exposed to it. After some practice you can see the value of it. There are common algorithms, or a list of processing steps, that are common to most self-posting forms. They differ depending upon the purpose and functionality of the form.

Data Validation Tests

The following are some common data validation tests. These are general examples. Some are similar to others but may be more specific or more general depending upon the need. Most data validations are based upon these tests and then detailed for the specific needs of the data and the application.

Required Field The user must enter something into this field. Cannot be left blank.

Selection Required A version of the Required Field. A selection must be chosen or checked.

Numeric Required The field requires a numeric value. This is commonly more detailed as needed.

Integer Required A more specific Numeric Required test

Valid Format This data must meet a required format. Examples include email, social security,   
Credit cards, phone numbers, zip code, etc. This type of validation often uses Regular expressions.

Range Check The entered value must within a required range of values

Reasonable Check The entered value must within a reasonable range of values. Be careful with   
this check as it can cause problem depending upon the definition of ‘reasonable’.

Case Sensitive The entered value must be properly cased in order to be accepted.

Dependency Test The entered value is validated against other values on the form. Some   
examples of this include zip codes within a state, products within a department, etc.

Invalid Characters Certain characters or symbols are required or not allowed. This is often done   
using string handling or Regular expressions.

Password Complexity This a common validation for user signon systems.