

## Form Structure

<program> ::= <meta\_list> <form>

<form> ::= "form" <identifier> "{" <section\_list> <validate\_block\_opt> "}"

<section\_list> ::= { <section> }

<section> ::= "section" <identifier> "{" <field\_list> "}"

<field\_list> ::= { <field> }

<field> ::= "field" <identifier> ":" <field\_type> <attribute\_list> ";"

## Field Types

<field> ::= 'field' <identifier> ':' <field\_type> <attribute\_list> ';'

<field\_type> ::= 'text' | 'textarea' | 'number' | 'email' | 'checkbox' |  
'radio' | 'date' | 'dropdown' | 'password' | 'file'

## Attributes

<field\_type> ::= "text" | "textarea" | "number" | "email" |  
"checkbox" | "radio" | "date" | "dropdown" | "password" | "file"

<attribute\_list> ::= { <attribute> }

<attribute> ::= "required" | "min" "=" <number> | "max" "="  
<number> | "min" "=" <string> | "max" "=" <string> | "default" "="  
<string> | "default" "=" <boolean> | "pattern" "=" <string> | "rows" "="  
<number> | "cols" "=" <number> | "accept" "=" <string> | "options"  
"=" "[" <option\_list> "]" | "[" <option\_list> "]"

<option\_list> ::= <string> { "," <string> }

## Conditional Rules

`<validate_statement> ::= "if" <validate_condition> "{" "error"`  
`<string> ";" "}"`

`<validate_condition> ::= <identifier> "<" <number>`

## Validational Blocks

`<validate_block_opt> ::= /* empty */ | <validate_block>`

`<validate_block> ::= "validate" "{" <validate_content_list> "}"`

`<validate_content_list> ::= { <validate_statement> }`

## Metadata Declarations

`<meta_list> ::= { <meta_line> }`

`<meta_line> ::= 'meta' <identifier> '=' <string> ';'`

## Terminals and Non-Terminals

`<identifier> ::= letter , { letter | digit | "_" }`

`<number> ::= digit , { digit }`

`<string> ::= "" , { any character except "" } , ""`

`<boolean> ::= "true" | "false"`

`letter ::= 'A'..'Z' | 'a'..'z'`

`digit ::= '0'..'9'`

# Sample Inputs and Outputs

```
1
2 form Registration {
3   meta author = "Helindu";
4   section PersonalDetails {
5     field fullName: text required;
6     field about: textarea rows=5 cols=40 default="Type here...";
7     field age: number min=1 max=99 required;
8     field email: email pattern=".+@.+\\.+" required;
9     field dob: date min="2000-01-01" max="2020-12-31" required;
10    field gender: radio ["Male", "Female", "Other"] required;
11    field Agree_to_terms: checkbox default=true;
12    field country: dropdown options=["Sri Lanka", "India", "Other"] required;
13    field password: password required pattern=".{8,}";
14    field results: file accept=".pdf,.doc" required;
15  }
16  validate {
17    if age < 18 {
18      error "You must be at least 18.";
19    }
20  }
21 }
```

```
<form name="Registration">
  <!-- Meta: author = Helindu -->
  <label>fullName: <input type="text" name="fullName" required/></label><br>
  <label>about: <br><textarea name="about" rows="5" cols="40">Type here...</textarea></label><br>
  <label>age: <input type="number" name="age" required min="1" max="99"></label><br>
  <label>email: <input type="email" name="email" required pattern=".+@.+\\.+"/></label><br>
  <label>dob: <input type="date" name="dob" required min="2000-01-01" max="2020-12-31"></label><br>
  <label>gender:</label><br>
  <input type="radio" name="gender" value="Male"> Male<br>
  <input type="radio" name="gender" value="Female"> Female<br>
  <input type="radio" name="gender" value="Other"> Other<br>
  <label><input type="checkbox" name="Agree_to_terms" checked/> Agree_to_terms</label><br>
  <label>country: <select name="country" required>
    <option value="Sri Lanka">Sri Lanka</option>
    <option value="India">India</option>
    <option value="Other">Other</option>
  </select></label><br>
  <label>password: <input type="password" name="password" required pattern=".{8,}"/></label><br>
  <label>results: <input type="file" name="results" required accept=".pdf,.doc"></label><br>
  <button type="submit">Submit</button>
</form>
<script>
document.addEventListener('DOMContentLoaded', function() {
  var form = document.querySelector('form');
  if(form) {
    form.addEventListener('submit', function(e) {
      var age = document.getElementsByName('age')[0]?.value;
      if (age !== undefined && age < 18) {
        alert('You must be at least 18.');
        e.preventDefault();
      }
    });
  }
});
</script>
```

# Demo Video Link

[Demo.mov](#)





