

## 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>
```

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

```
<form name="Registration">
<!-- Meta: author = Helindu -->
<label>fullName: <input type="text" name="fullName" required></label><br>
<label>about: <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><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](#)





