Formlang++ with Lex and Yacc
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Demo link:

Youtube link: https://youtu.be/Qg33tMb1N4s

Example 01

Input:
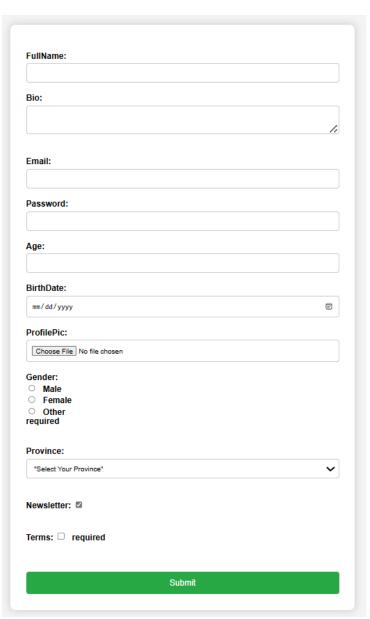
```
form Registration {
  meta author = "SE2062 Team";

  section PersonalDetails {
    field FullName: text required = true pattern = "^[A-Z][a-z]+$";
    field Bio: textarea;
    field Email: email required = true;
    field Password: password required = true pattern="^(?=.*[a-z])(?=.*[A-Z])(?=.*\d)(?=.*[\W_]).{6,}$";
    field Age: number required = true min = 18 max = 99;
    field BirthDate: date required = true min= "1926-01-01" max= "2007-12-31";
    field ProfilePic: file accept = "image/*" required = true;
  }

  section Preferences {
    field Gender: radio options = ["Male", "Female", "Other"] required = true;
    field Province: dropdown options = ["Select Your Province", "Western Province", "Sothern Province", "Uwa Province", "Nothern Province", "Eastern Province", "Central Province"];
    field Newsletter: checkbox default=true;
  }

  section Agreement {
    field Terms: checkbox required = true;
  }

  validate {
    if Age < 18 {
      error "You must be at least 18.";
    }

    if FullName == "" {
      error "Full name cannot be empty.";
    }
  }
}
```

Output:

FullName:

Bio:

Email:

Password:

Age:

BirthDate:

mm/dd/yyyy

ProfilePic:

Choose File | No file chosen

Gender:
- ○ Male
- ○ Female
- ○ Other
required

Province:

"Select Your Province" ⌄

Newsletter: ☑

Terms: ☐ required

Submit

Example 02

Input:

```
form JobApplication {
  meta author = "SE2062 Team";


  section ApplicantInfo {
    field FirstName: text required = true pattern = "^[A-Z][a-z]+$";
    field LastName: text required = true pattern = "^[A-Z][a-z]+$";
    field Email: email required = true;
    field PhoneNumber: text pattern = "^[0-9]{10}$";
    field DateOfBirth: date required = true min = "1960-01-01" max = "2007-01-01";
    field Age: number required = true min = 18 max = 65;
  }

  section Documents {
    field Resume: file accept = ".pdf" required = true;
    field CoverLetter: file accept = ".pdf";
  }

  section PositionDetails {
    field Position: dropdown options = ["Software Engineer", "QA Engineer", "Product Manager", "Designer"] required = true;
    field PreferredLocation: radio options = ["Colombo", "Kandy", "Galle", "Remote"];
    field WillingToRelocate: checkbox default = false;
  }

  section AdditionalInfo {
    field Bio: textarea rows = 5 cols = 50;
    field PortfolioURL: text pattern = "^(https?:\\/\\/)?([\\w.-]+)\\.([a-z]{2,6})([\\/\\w.-]*)*\\/?$";
  }

  section Consent {
    field AgreeToTerms: checkbox required = true;
  }

  validate {
    if Age < 18 {
      error "Applicants must be 18 or older.";
    }

    if FirstName == "" {
      error "First name is required.";
    }

    if LastName == "" {
      error "Last name is required.";
    }

    if Resume == "" {
      error "Resume must be uploaded.";
    }
  }
}
```

Output:

FirstName:

LastName:

Email:

PhoneNumber:

DateOfBirth:

mm/dd/yyyy

Age:

Resume:

Choose File | No file chosen

CoverLetter:

Choose File | No file chosen

Position:

"Software Engineer"

required

PreferredLocation:
- ○ Colombo
- ○ Kandy
- ○ Galle
- ○ Remote

WillingToRelocate: ☐

Bio:

PortfolioURL:

AgreeToTerms: ☐ required

Submit