Validation

Deborah Kurata
CONSULTANT | SPEAKER | AUTHOR | MVP | GDE
@deborahkurata | blogs.msmvps.com/deborahk/

RIGHT
WRONG
IT DEPENDS

Module Overview

Setting Built-in Validation Rules

Adjusting Validation Rules at Runtime

Custom Validators

Custom Validators with Parameters

Cross-field Validation

Creating the Root FormGroup

```
ngOnInit(): void {
  this.customerForm = this.fb.group({
        firstName: '',
        lastName: '',
        email: '',
        sendCatalog: true
  });
}
```

Creating the FormControls

```
this.customerForm = this.fb.group({
      firstName: '',
      sendCatalog: true
});
```

```
this.customerForm = this.fb.group({
      firstName: {value: 'n/a', disabled: true},
      sendCatalog: {value: true, disabled: false}
});
```

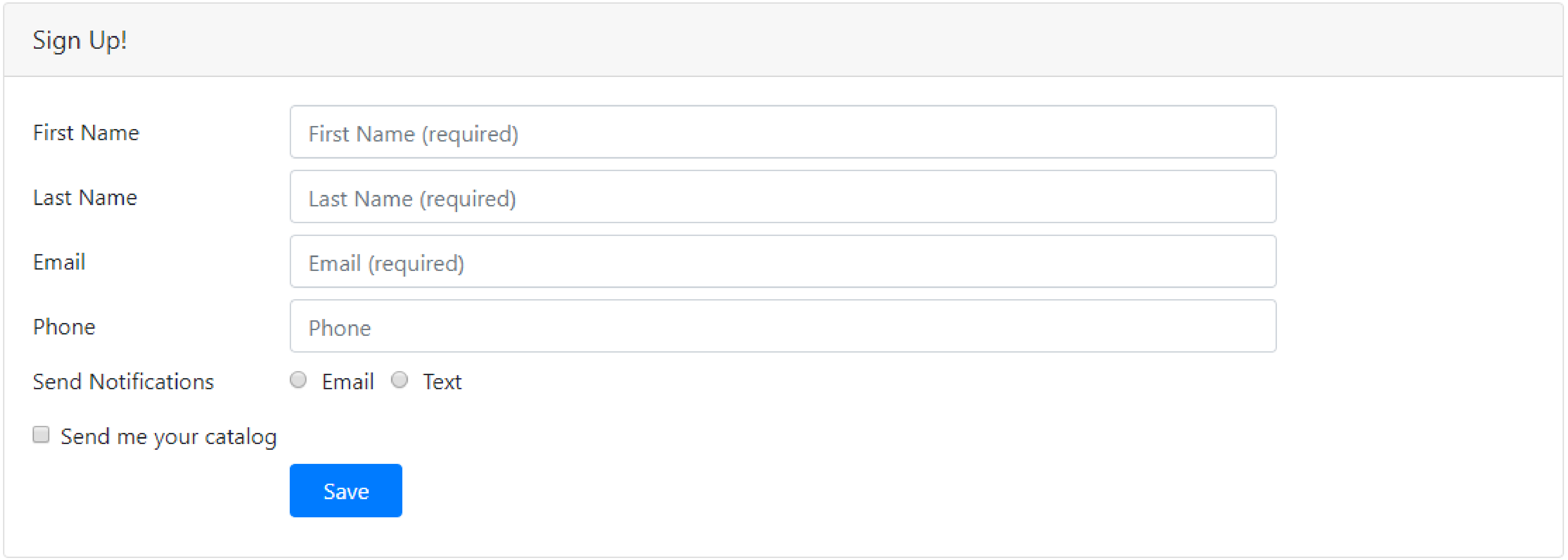
```
this.customerForm = this.fb.group({
      firstName: [''],
      sendCatalog: [true]
});
```

Setting Built-in Validation Rules

```
this.customerForm = this.fb.group({
      firstName: ['', Validators.required],
      sendCatalog: true
});
```

```
this.customerForm = this.fb.group({
      firstName: ['',
         [Validators.required, Validators.minLength(3)]],
      sendCatalog: true
});
```

Adjusting Validation Rules at Runtime



Sign Up!

First Name	First Name (required)
Last Name	Last Name (required)
Email	Email (required)
Phone	Phone
Send Notifications	○ Email ○ Text

☐ Send me your catalog

Adjusting Validation Rules at Runtime

```
myControl.setValidators(Validators.required);
```

```
myControl.setValidators([Validators.required,
                         Validators.maxLength(30)]);
```

```
myControl.clearValidators();
```

```
myControl.updateValueAndValidity();
```

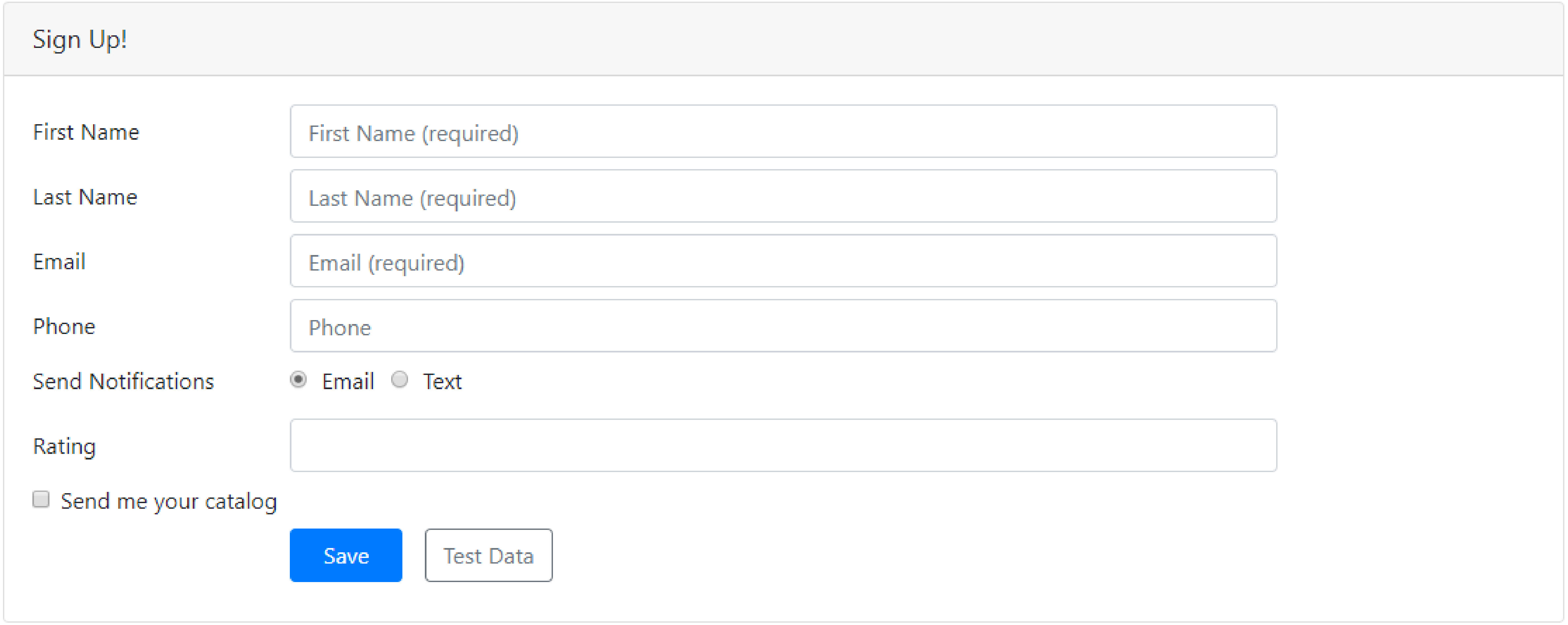
Custom Validator

```
function myValidator(c: AbstractControl): {[key: string]: boolean} | null {

    if (somethingIsWrong) {
        return { 'myvalidator': true };
    }
    return null;

}
```

Custom Validator



Sign Up!

First Name	First Name (required)
Last Name	Last Name (required)
Email	Email (required)
Phone	Phone
Send Notifications	[✓ Email] Text
Rating	

☐ Send me your catalog

Custom Validator

```
function myValidator(c: AbstractControl): {[key: string]: boolean} | null {

    if (somethingIsWrong) {
        return { 'myvalidator': true };
    }
    return null;

}
```

Custom Validator with Parameters

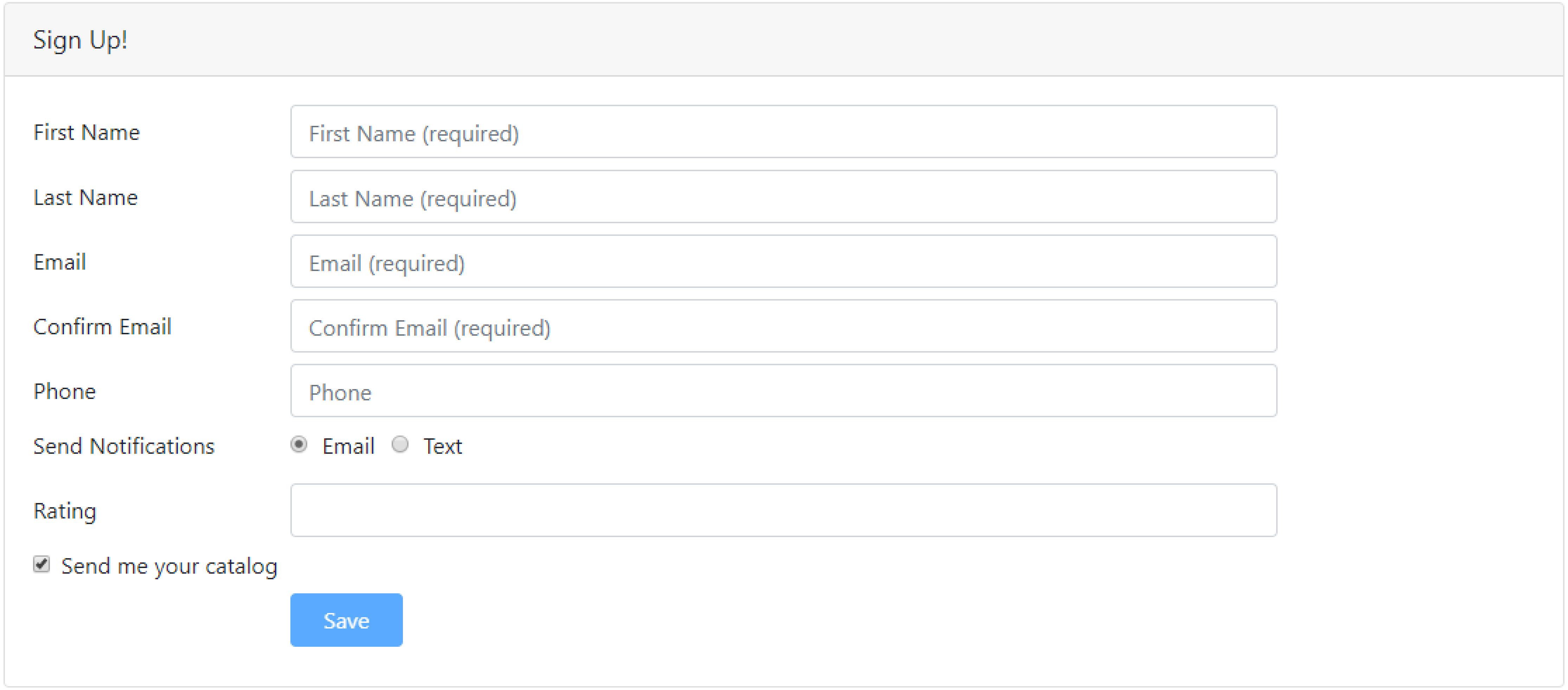
```
function myValidator(param: any): ValidatorFn {

  return (c: AbstractControl): {[key: string]: boolean} | null => {

    if (somethingIsWrong) {
        return { 'myvalidator': true };
    }
    return null;

  };
}
```

Cross-field Validation



Sign Up!

First Name	First Name (required)
Last Name	Last Name (required)
Email	Email (required)
Confirm Email	Confirm Email (required)
Phone	Phone
Send Notifications	[✓ Email] Text
Rating	

[✓] Send me your catalog

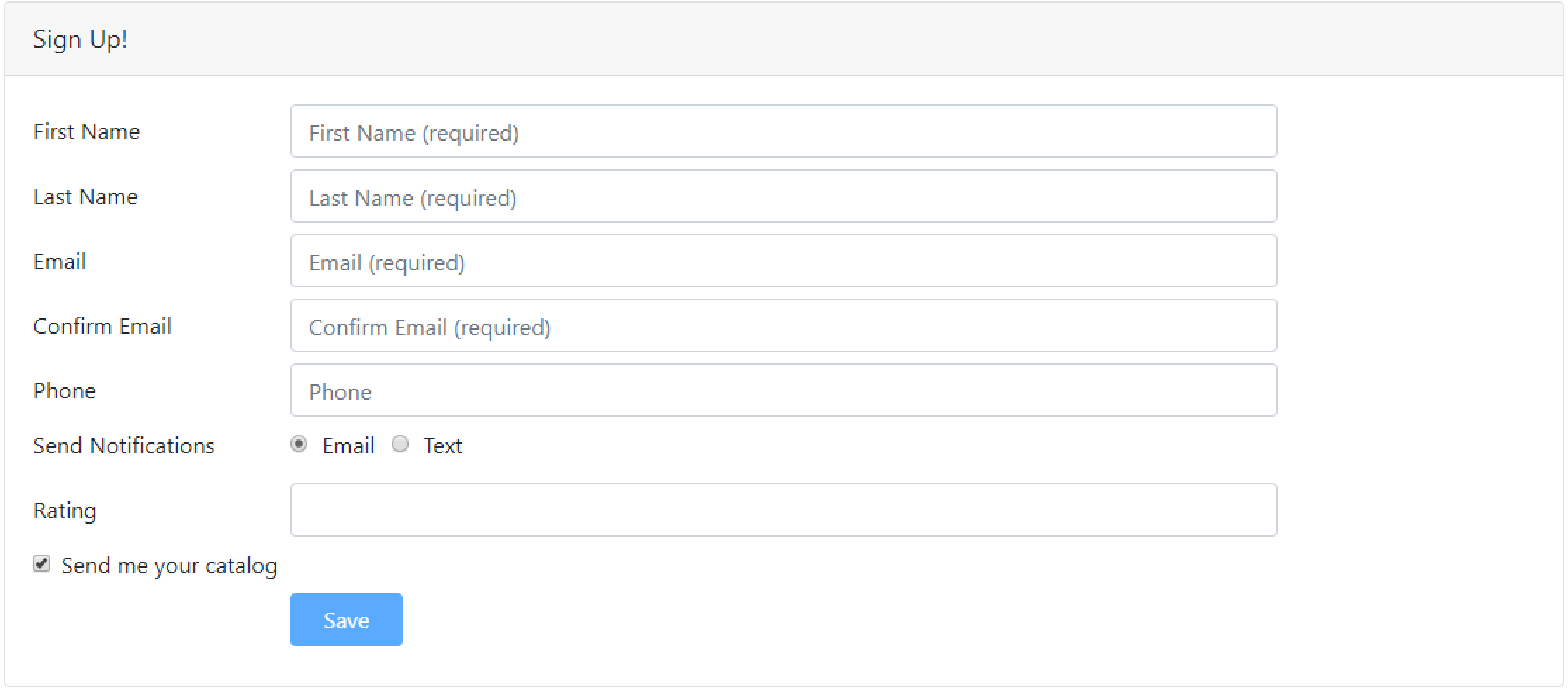
Save

Cross-field Validation: Nested FormGroup

```
this.customerForm = this.fb.group({
    firstName: ['', [Validators.required, Validators.minLength(3)]],
    lastName: ['', [Validators.required, Validators.maxLength(50)]],
    availability: this.fb.group({
                        start: ['', Validators.required],
                        end: ['', Validators.required]
  })
});
```

```
<div formGroupName="availability">
  ...
  <input formControlName="start"/>
  ...
  <input formControlName="end"/>
</div>
```

Cross-field Validation



Sign Up!

First Name	First Name (required)
Last Name	Last Name (required)
Email	Email (required)
Confirm Email	Confirm Email (required)
Phone	Phone
Send Notifications	[✓ Email] Text
Rating	

[✓] Send me your catalog

Cross-field Validation: Custom Validator

```
function dateCompare(c: AbstractControl): {[key: string]: boolean} | null {
    let startControl = c.get('start');
    let endControl = c.get('end');
    if (startControl.value !== endControl.value) {
        return { 'match': true };
    }
    return null;
}
```

```
this.customerForm = this.fb.group({
    firstName: ['', [Validators.required, Validators.minLength(3)]],
    lastName: ['', [Validators.required, Validators.maxLength(50)]],
    availability: this.fb.group({
                   start: ['', Validators.required],
                   end: ['', Validators.required]
    }, { validator: dateCompare })
});
```

Checklist: Setting Built-in Validation Rules

Import Validators

Pass in the validator or array of validators

```
ngOnInit(): void {
 this.customerForm = this.fb.group({
   firstName: ['', Validators.required],
   lastName: ['', [Validators.required,
                   Validators.maxLength(30)]],
   email: '',
   sendCatalog: true
 });
}
```

Checklist: Adjusting Validation Rules

Determine when to make the change

Use setValidators or clearValidators

Call updateValueAndValidity

```
setNotification(notifyVia: string): void {
  const p = this.myForm.get('phone');
  if (notifyVia === 'text') {
   p.setValidators(Validators.required);
  } else {
   p.clearValidators();
  }
   p.updateValueAndValidity();
}
```

Checklist: Custom Validators

Build a validator function

```
function myValidator(c: AbstractControl):
          {[key: string]: boolean} | null {
    if (somethingIsWrong) {
        return { 'thisValidator': true };
    }
    return null;
}
```

Use it like any other validator

```
this.customerForm = this.fb.group({
   firstName: ['', myValidator],
   sendCatalog: true
});
```

Checklist: Custom Validators with Parameters

Wrap the validator function in a factory function

```
function myValidator(param: any): ValidatorFn {
    return (c: AbstractControl):
          {[key: string]: boolean} | null => {
    if (c.value === param) {
        return { 'thisvalidator': true };
    }
    return null;
}}
```

Use it like any other validator

```
this.customerForm = this.fb.group({
   firstName: ['', myValidator('test')]
});
```

Checklist: Cross-field Validation: FormGroup

Create a nested FormGroup

Add FormControls to that FormGroup

```
this.customerForm = this.fb.group({
  name: ['', Validators.required],
  availability: this.fb.group({
        start: ['', Validators.required],
        end: ['', Validators.required]
  })
});
```

Update the HTML

```
<div formGroupName="availability">
  <input formControlName="start"/>
  <input formControlName="end"/>
</div>
```

Checklist: Cross-field Validation: Validator

Build a custom validator

```
function dateCompare(c: AbstractControl) {
  if (c.get('start').value !==
      c.get('end').value) {
        return { 'match': true };
  }
  return null;
}
```

Use the validator

```
this.customerForm = this.fb.group({
  name: ['', Validators.required],
  availability: this.fb.group({
       start: [null, Validators.required],
       end: [null, Validators.required]
  }, { validator: dateCompare })
});
```

Summary

Setting Built-in Validation Rules

Adjusting Validation Rules at Runtime

Custom Validators

Custom Validators with Parameters

Cross-field Validation