
{m}
metaUI

Please have a brief look at the **form** on the right ...

General

Title

First Name

Last Name

Age

Profession

Company size

< 10

> 10 < 50

> 50

Save

Each field is represented by a **bunch of components.**

Title

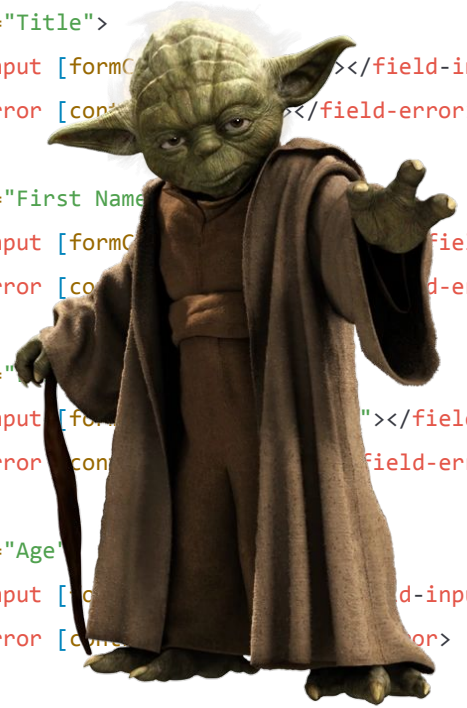
```
<field-group>

   <field label="First Name">
       <field-input [formControl]="firstName">
       </field-input>

       <field-error [control]="firstName">
       </field-error>
   </field>

</field-group>
```

The more components the more lines of code you have to maintain.

```
<field-group label="General>
   <field label="Title">
       <field-input [formControl]="title"></field-input>
       <field-error [control]="title"></field-error>
   </field>
   <field label="First Name">
       <field-input [formControl]="firstName"></field-input>
       <field-error [control]="firstName"></field-error>
   </field>
   <field label="Last Name">
       <field-input [formControl]="lastName"></field-input>
       <field-error [control]="lastName"></field-error>
   </field>
   <field label="Age">
       <field-input [formControl]="age"></field-input>
       <field-error [control]="age"></field-error>
   </field>
   <field label="Profession">
       <field-combobox [formControl]="profession"></field-combobox>
       <field-error [control]="profession"></field-error>
   </field>
</field-group>
```

Scrolling down the code is like watching a **Star Wars Intro**.

```
<field-group label="General>
    <field label="Title">
        <field-input [formC                    ></field-input>
        <field-error [con                    </field-error>
    </field>
    <field label="First Name
        <field-input [formC                    field-input>
        <field-error [co                    d-error>
    </field>
    <field label="
        <field-input [fo                    "></field-input>
        <field-error con                    field-error>
    </field>
    <field label="Age"
        <field-input [                    d-input>
        <field-error [                    or>
    </field>
    <field label="Profession">
        <field-combobox [formControl]="profession"></field-combobox>
        <field-error [control]="profession"></field-error>
    </field>
```



15 form fields
produce around
100 lines of code.

What impact would it have if you...

...add i18n?

What impact would it have if you...

...deal with role concept?

What impact would it have if you...

...deal with dynamic layouts?

10 domain objects

→ 3 pages for each

→ 30 pages

→ over **3000 lines of code**

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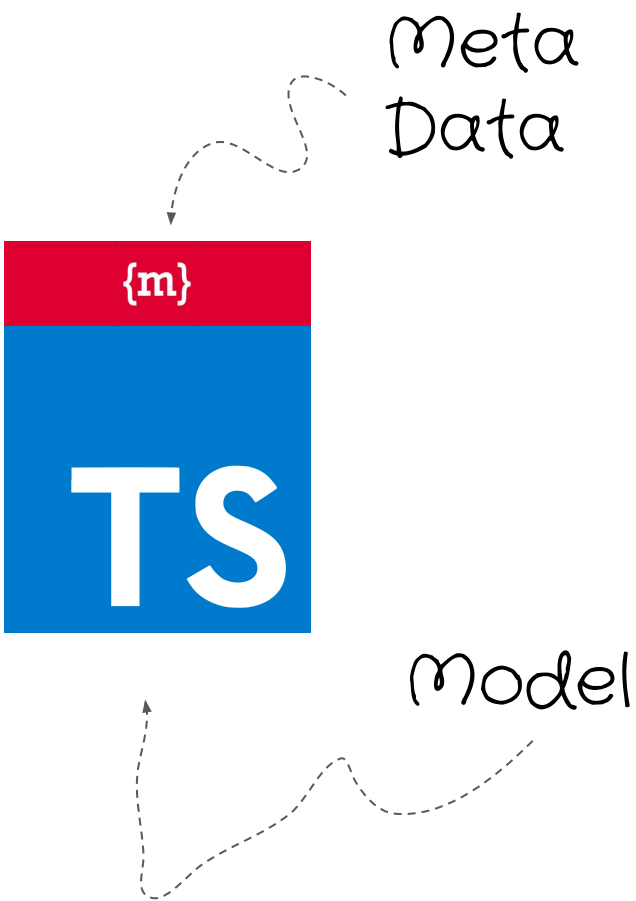
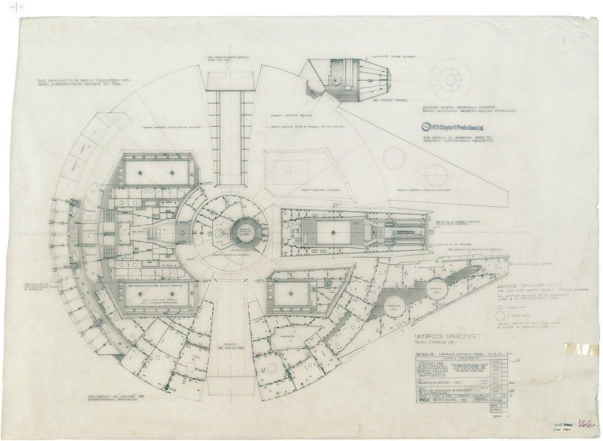
@GregOnNet


{m}
metaUI

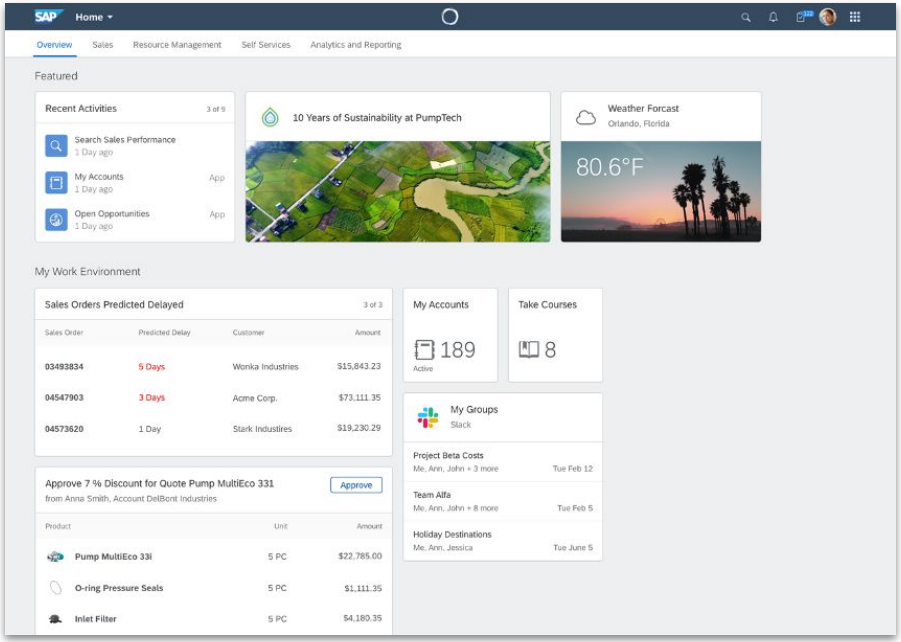
metaUI uses your model + Meta data describing the object



metaUI is a set of APIs and components



metaUI derives the whole UI for you without templates.



metaUI reduces the amount of code you have to write **by 70%.**

```
<m-context
  [object]="object"
  [operation]="operation"
  layout="two-column">

  <m-include-component></m-include-component>

</m-context>
```

```
<field-group label="General>
   <field label="Title">
       <field-input [formControl]="title"></field-input>
       <field-error [control]="title"></field-error>
   </field>
   <field label="First Name">
       <field-input [formControl]="firstName"></field-input>
       <field-error [control]="firstName"></field-error>
   </field>
   <field label="Last Name">
       <field-input [formControl]="lastName"></field-input>
       <field-error [control]="lastName"></field-error>
   </field>
   <field label="Age">
       <field-input [formControl]="age"></field-input>
       <field-error [control]="age"></field-error>
   </field>
   <field label="Profession">
       <field-combobox [formControl]="profession"></field-combobox>
       <field-error [control]="profession"></field-error>
```

```
<m-context
  [object]="object"
  [operation]="operation"
  layout="two-column">

  <m-include-component></m-include-component>

</m-context>
```

Most of the IO code written in traditional frameworks is a mechanical application of (unstated) rules rooted in the domain object data model."

— Craig Federighi

Object Style Sheet (OSS) describes your UI.

```
class=PersonalInfo {
    field=title {
        label: "Title";
    }

    field=firstName {
        label: "First Name";
    }
}
```

```sass
.box {
  .shape {
    background-color: #9d9d9d;
  }
}
```

SASS

```oss
class=PersonalInfo {
   field=title {
       label: "Title";
   }

   field=firstName {
       label: "First Name";
   }
}
```

OSS

Features

Dry Principle

Customization capability

UI Library agnostic

Reviewing the basic approach...

Entity + Rule

Entity

```
import { Entity } from '@ngx-metaui/rules';

export class Character implements Entity {

 className(): string {
   return 'Character';
 }

 identity(): string {
   /* ... /*
 }

 getTypes(): any {
   return {
     /* ... /*
   };
 }
}
```

Entity

```
import { Entity } from '@ngx-metaui/rules';

export class Character implements Entity {

  constructor(
    public id: string
  ) {}

  getTypes(): any {
    return {
      id: String
    };
  }

}
```

Needed for Introspection

Rule

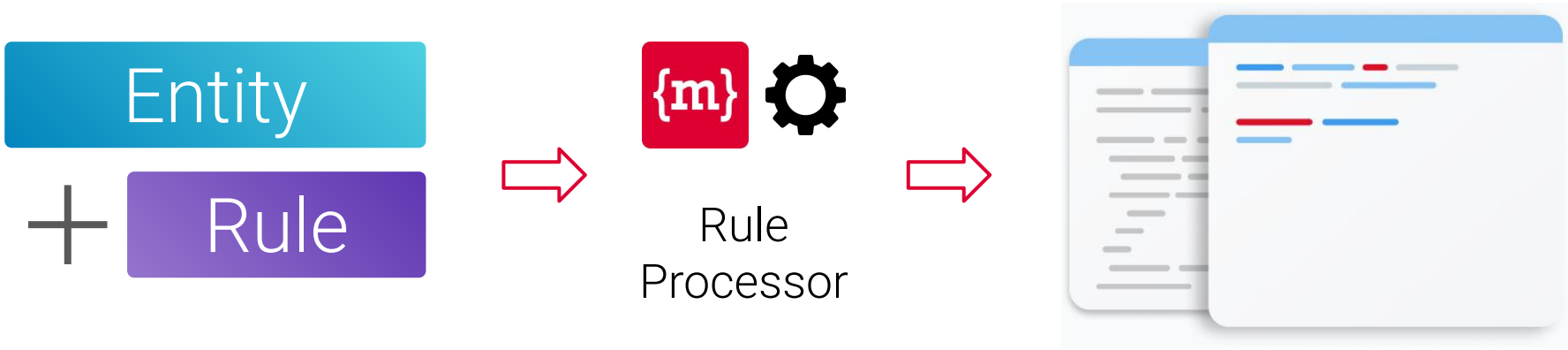
```
class=Character {

  field=id {
    label:"Id";
  }

}
```

Entity

Rule

```
import { Entity } from '@ngx-metaui/rules';

export class Character implements Entity {

  constructor(
    public id: string
  ) {}

  getTypes(): any {
    return {
      id: String
    };
  }

}
```

```
class=Character {

  field=id {
    label:"Id";
  }

}
```


Entity
+
Rule
{m}
Rule
Processor

Rule Processor

- Knows about types
- Knows how types are rendered

```
import { Entity } from
'@ngx-metaui/rules';

export class Character imple

  constructor(
    public id: string
  ) {}

  getTypes(): any {
    return {
      id: String
    };
  }

}
```

```
<m-context
  [object]="entity"
  [operation]="operation"
  layout="two-column">

  <m-include-component></m-include-component>

</m-context>
```

Rule processor

Entity

```
<m-context
  [object]="entity"
  [operation]="operation"
  layout="two-column">

  <m-include-component></m-include-component>

</m-context>
```

Setup metaUI

```
ng add @ngx-metaui/rules
```

Setup metaUI

```
@NgModule({
 declarations: [AppComponent],
 imports: [
   BrowserModule,
   BrowserAnimationsModule,
   AppRoutingModule,

   MetaUIRulesModule.forRoot(),
   MaterialRulesModule.forRoot()
 ],
 bootstrap: [AppComponent]
})
export class AppModule {}
```

Review **1st** refactoring...

OSS
field

```
field=avatarUrl {
  label:"Profile Url";

}
```

OSS

field - Link your Component

```
field=avatarUrl {
  label:"Profile Url";
  component: ImageComponent;




}
```

OSS

field - Bind component values

```
field=avatarUrl {
  label:"Profile Url";
  component: ImageComponent;
  bindings: {
    url: $value;
    alt: ${object.firstName + ' ' + object.lastName + ' avatar image'};
  };
}
```

OSS

@field - Create computed properties

Entity

```
@field=fullName {
  type: String;
  value: ${object.firstName + ' ' + object.lastName};
}
```

```
export class Character
  implements Entity
{
 constructor(
   public firstName: string,
   public lastName: string
 ) {}
}
```

OSS

trait - Build reusable rules

Rule

```
@field=fullName {
 trait: derived, heading1;
 type: String;
 value: ${object.firstName + ' ' + object.lastName};
}
```

```
@trait=heading1 {
 wrapperComponent:GenericContainerComponent;
 wrapperBindings: { tagName:h1; };
}
```

Source

Traits behave like mixins you know from Sass .

Review **2nd** refactoring...

OSS

operation - Define your view

```
class=Character {
  operation=(view) {
    zNone => *;
    zLeft => fullName => avatarUrl;
 }

  operation=(edit) {
    @field=title {
      trait: derived, heading1;
      type: String;
      value: 'Edit';
    }

    zNone => *;
    zLeft => title => firstName => lastName => lightsaberColor;
  }

  /* add as many operations you like */
}
```

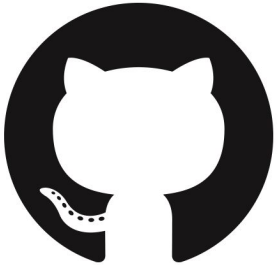
OSS

operation - Define your view

```
class=Character {
  operation=(view) {
    zNone => *;
    zLeft => fullName => avatarUrl;
 }
}
```

Awaiting **3rd** refactoring... :-)

MetaUI TV



github.com/GregOnNet/metaui-playground

Thank you

www.metaui.io