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Angular 5 form validation sample

One of the most common features in any web application is providing a form for users to enter some data. Use forms daily to sign in, register, place orders, etc. Processing user entries before validation can have serious consequences. You may end up storing invalid data, it would be an incorrect date, an email, an age, etc. It could also be a security issue because attacks would be Cross-Site Scripting (XSS). The traditional way to validate HTML forms is by using JavaScript or JQuery. Unfortunately, this approach justifies a lot of code. Angular, being a full-time framework, provided excellent support for validating user inputs and displaying validation messages. It has a lot of commonly used built-in validators that you can take advantage of, or you can even write custom validators. Angular shapes an angular is a regular HTML shape with a few additional features. For each field (entry, radio, selection, etc.) on the form, we need an object in the FormControl class. The FormControl object provides information about that field. Its value, if the value is valid, and if it is not valid what validation errors are, etc. It also provides domain status, would be reached, untouched, dirty, clean, etc. Similarly, a FormGroup is the collection of FormControl objects. Each angular shape has at least one FormGroup. You can decide to have multiple FormGroups in cases of use, such as separating the management of personal details and professional details sections of a user registration form. All properties of a FormGroup (valid, error, etc.) are also available for FormControl. For example, the valid property of a FormControl will return true if all FormControl instances are valid. So to add validation to an angular form we need two things: At least one FormGroup object for the A FormControl object form for each field in the form There are two different ways in which these control objects can be created. We can provide some directives in the form template and Angular can create such controls under the hood for us. Forms created in this way are called template-based forms. If we have some special cases of use and want more control over the shape we can explicitly create such control objects. Shapes created in this way are called reactive shapes. Template-based forms In template-based forms, we apply the ngModel directive to each field in the template. Angular creates a FormControl object under the hood for each such field and associates it with that field: <div class=form-group><label for=name>Name</label><input type=text id=name ngmodel=name=name></div><div class=form-group><label for=username>User name</label><input type=text class=form-control id=username ngmodel=name=username></div> Note: With ngModel, you must either provide the name attribute or define FormControl as independent in ngModelOptions, otherwise Angular will throw an error. Also in app.module.ts you would to add FormsModule to the import range: import { FormsModule } from '@angular/forms'; // ... other imports: [... read the full story some other Imports FormsModule] Validation in Template-Driven Forms Angular has provided some built-in validators to validate common use cases. To use built-in validators, you'll need to apply validation attributes to each form field where you want a specific validation. These validation attributes are the same as regular HTML5 validation attributes, would be required, minlength, maxlength, etc. According to the hod, Angular provided directives to match these attributes with the validator functions defined within the angular frame. Whenever the value of a FormControl changes, Angular generates a list of validation errors by running validation. If the list is empty it means that it is a valid state, otherwise it is an invalid state. Let's say we want to enter the following validations: Because the Name and User Names fields have the necessary attribute, we want to display a validation message if this field is left empty. The Name field must have a value whose minlegth and maxlength must be 2 and 30 characters, respectively. If the user name has spaces, display an invalid username message. For each form control to which we want to add validation, we need to add appropriate validation attributes and export ngModel to a local template variable: <input type=text class=form-control id=name required=maxlength=30 minlength=2 ngmodel=name=name #name=ngModel> In the example above, we used the following built-in validators - required, minlength, and maxlength. We can use the template variable name in the template to check the validation states of the validators used: <div *ngif=name.invalid && (name.dirty || name.touched) class=alert alert-danger><div *ngif=name.errors.required> Name is required. </div><div *ngif=name.errors.minlength> Name cannot be more than 30 characters. </div><div *ngif=name.errors.minlength> The name must be at least 2 characters long. </div></div> Because we used a conditional instruction to play the first div, it will only be displayed if the status of the predefined validator is not valid. I explained at the beginning of the section the status is determined as invalid or invalid. Similarly, the inner div will only be displayed if the variable template name has a property error and property errors has one of the following properties - required, minnength and maxlength and true id property value. We have already discussed how the template variable links to the ngModel directive and receives these properties every time there is any change in the control of the form and after Angular runs validation for that field. Note: It is important to if there are dirty and touched states, otherwise the error message will be displayed the first time the page is loaded, which is not bad for the user experience. We need the validation message to be displayed in one of the following The user changes a certain value, i.e. the field is dirty (formControlObject.dirty) The user uses the tab or clicks to switch the focus to another item, i.e. the field has been reached (formControlObject.touched) If you want to refer to a complete list of the embedded validators of Angular, you can follow the Validators API. Writing a custom validator Sometimes embedded validators may not cover the usage case exactly. In this case, you may need to create the custom validator function. A validator function implements the ValidatorFn interface, which means it should have the signature: ValidatorFn { interface (control: AbstractControl): ValidationErors | null } ValidationErors should be an object that has one or more key-value pairs: ValidationErors type = { [key: string]: any; }; The key should be a string and is used to designate the type of validation error would be invalidEmail, required, etc. The value can be anything and is used to provide more information about the validation error. For the example above, we want to write a custom validation function that validates if there are no spaces in the user name. While technically we can write this function anywhere in the application, it is always good practice to put all functions related to the validator in a separate class: import { ValidationErors, AbstractControl } from @angular / forms; export class UserRegistrationFormValidators { static usernameArhourdBeValid(control: AbstractControl): ValidationErors | null { if ((control.value as string.indexOf(') >= 0) { return { shouldNotHaveSpaces: true } } Note: In this example, we are back true as the key value shouldNotHaveSpaces, because we do not need to provide any details. In some cases, you may need to provide details, for example: return { maxlengthExceeded: { maxLength: 20, real: control.value.length } } Next, we can use this UserRegistrationFormValidators.usernameShouldBeValid function for form-control username in our template-based form: <div class=form-group><label for=username>User name</label><input type=text class=form-control id=username required=username required=userregistrationformvalidators.usernamesshouldbevalid= [(ngmodel)]=person.username name=username></div> Reactive forms In reactive forms, we create FormControl objects explicitly in the component of that template. Here is the regular HTML form without any ngModel directive scans or validations: <div class=form-group><label for=name>Name</label><input type=text class=form-control id=name></div><div class=form-group><label for=username>User name</label><input type=text class=form-control id=username></div> Let's say we want to convert our form templates in the previous example in a reactive form. To do this, first, we need to explicitly create FormGroup and FormControls for each field in the template component: form = new FormGroup({ name: new FormControl(), username: new }) Note: After discussing earlier, a form may have more than one FormGroup. In this case, we can have a nested structure: registrationForm = new FormGroup({ 'personalDetailsForm': new FormGroup({ 'name': new FormControl() }) }) You can read more about FormGroup in the Angular documentation. Let me bring your attention back to our use case. Next, we need to associate these FormControl objects with the fields in the HTML form. <form [formgroup]=registrationForm><div class=form-group><label for=name>Name</label><input type=text class=form-control id=name [formcontrolname]=name></div><div class=form-group><label for=username>User name</label><input type=text class=form-control id=username [formcontrollername]=username></div></form> Here I applied the formGroup directive and associated it with the FormGroup object registration form that I created in the component. We also associated the formControlName directive with the name and user names of the respective FormControl objects. Note: Directives to build reactive shapes are defined in ReactiveFormsModule. So if you get an error, it would be: You can't link to formGroup... then you should check if you imported that ReactiveFormsModule into the main app.module.ts module. Validations in reactive forms In reactive forms, we do not pass the ngModel directive and also do not use HTML5 validation attributes. We specify validators while we create FormControl objects in the component itself. Here is the signature of the FormControl class: the FormControl class expands AbstractControl { constructor(formState: any = null, validatorOrOpts?: ValidatorFn | AbstractControlOptions | ValidatorFn[], asyncValidator?: AsyncValidatorFn | AsyncValidatorFn[]) After we can see the first parameter is the initial state of the control, which can be kept empty, i.e. ''. The second parameter is ValidatorFn. To add built-in validator functions for a FormControl, we can pass it on to the appropriate validator. For the following example, we used the following necessary embedded validators, minLength and maxLength - : registrationForm = new FormGroup({ 'name': new FormControl('Enter your name', [Validators.reriged, Validators.minLength(2), Validators.maxLength(30)]), 'username': new FormControl('', Validators.reriged), }) Note: You will need to import Validators into the component. Please also note, unlike template-based forms, we do not use validation attributes. We use the respective validatorFn as Validators.enimvaluables, Validators.minLength(2), etc. The code editor can provide autocomplete for all ValidatorFn when you type Validators, followed by a point .. We can return to the template and write validation messages: <form [formgroup]=registrationForm><div class=form-group><label type=text class=form-control id=name [formcontrolname]=name><div *ngIf=registrationForm.get('name').invalid && (registrationForm.get('name').dirty || *ngif=></div *ngIf=registrationForm.get('name').invalid && (registrationForm.get('name').dirty || ></div></form></form></form> ></div></form></form></form> class=alert-danger> <div *ngif=registrationForm.get('name').errors.required> Name required. </div><div *ngif=registrationForm.get('name').errors.minlength> Name cannot be more than 30 characters. </div><div *ngif=registrationForm.get('name').errors.minlength> Name must be at least 2 characters long. </div><div class=form-group><label for=username>User name</label><input type=text class=form-control id=username [formcontroller]=username></div><form> Custom Validators for Reactive Forms We must write the custom validator function the same way we did for the form section Based on template. We can use the same custom function of userRegistrationFormValidators.usernameArudBeValid in the component for the reactive form: registrationForm = new FormGroup({ name: new FormControl('Enter your name', [Validators.reriged, Validators.minLength(2), Validators.maxLength(30)]), 'username': new FormControl(', [Validators.reriged, UserRegistrationFormValidators.usernameShouldBeValid]), }) Conclusion In this tutorial, we explored the two different ways to manage user entries - Forms based on and reactive templates. We have learned to put validation on both types of forms. And finally, we also wrote our custom validator function and included it with built-in validators. After we can see Angular has great support for shapes and provides some sub-capta useful features to validate shapes. Providing each unique feature with angular shapes is beyond the scope of this tutorial. You can read the angular documentation for complete information. Information. </form>

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