Form Validation and Data and Error Handling with Flask-WTF

In this lesson, we will learn how to validate the data received from the form and how to handle these validation errors.

WE'LL COVER THE FOLLOWING

Form validation

In the previous lesson, we did not distinguish between a `GET` or `POST` request. In fact, we don't really need to in the case of `Flask-WTF` forms. This module provides us with some helpful functions that make this task easier. Let us discuss them below.

`form.is_submitted()`

This function is inherited from the `WTForms` module. It returns **true** if the form was submitted. Therefore, if it's a `GET` request, then this will always be **false**.

`form.validate()`

This function is also inherited from the `WTForms` module. It returns **true** if all the conditions specified in the **validators** have been met. For example, when we created the `LoginForm` we specified the `Email()` validator for the `email` field. Therefore, if the given input is not a valid email address, `form.validate()` will return **false**.

`form.validate_on_submit()`

This function is a shortcut function that `Flask-WTF` contains. It returns **true** if both `form.is_submitted()` and `form.validate()` return **true**.

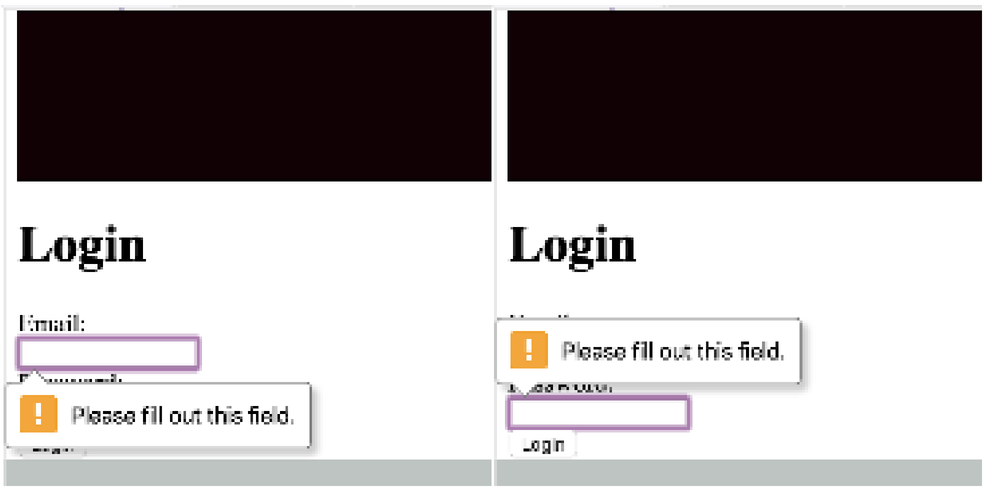
```
#header {
  padding: 30px;
  text-align: center;
  background: #140005;
  color: white;
  font-size: 40px;
}
#footer {
   position: fixed;
   width: 100%;
   background-color: #BBC4C2;
   color: white;
   text-align: center;
   left: 0;
   bottom:0;
}
ul {
  list-style-type: none;
  margin: 0;
  padding: 0;
}

li {
  display: inline;
}
```

> **Try it Yourself:** Test the following scenarios on the login form and observe the output in the **terminal** window:
>
> 1. Submit without an **email** or **password**.
> 2. Submit with *invalid* **email** and **password**.
> 3. Submit with *valid* **email** and **password**.

Outputs

1. In the first scenario, you can observe the effects of the `InputRequired()` validator. It has set the `required` attribute of the `email` and `password` fields. You will observe the following pop-up message if no input is provided:



Please fill out this field.

Please fill out this field.

2. When an *invalid* **email** and **password** are provided, then the terminal will output:

```
Submitted.
```

This indicates that only `is_submitted()` returned `true`.

3. When a *valid* **email** and **password** are submitted, the terminal will show:

```
Submitted.
Valid.
Submitted and Valid.
```

This indicates all functions returned `true`.

Error handling

`form.errors`

If the validation of the `form` encounters any errors, they can be found in the `forms.errors` *dictionary*.

Moreover, we can individually get the errors for each field by using `form.field_name.errors` *list*.

Note: The `form.errors` is a **dictionary** type object whereas, `form.field_name.errors` is a **list**.

```
#header {
  padding: 30px;
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  background: #140005;
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  font-size: 40px;
}
#footer {
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   width: 100%;
   background-color: #BBC4C2;
   color: white;
   text-align: center;
   left: 0;
   bottom:0;
}
ul {
  list-style-type: none;
  margin: 0;
  padding: 0;
}

li {
  display: inline;
}
```
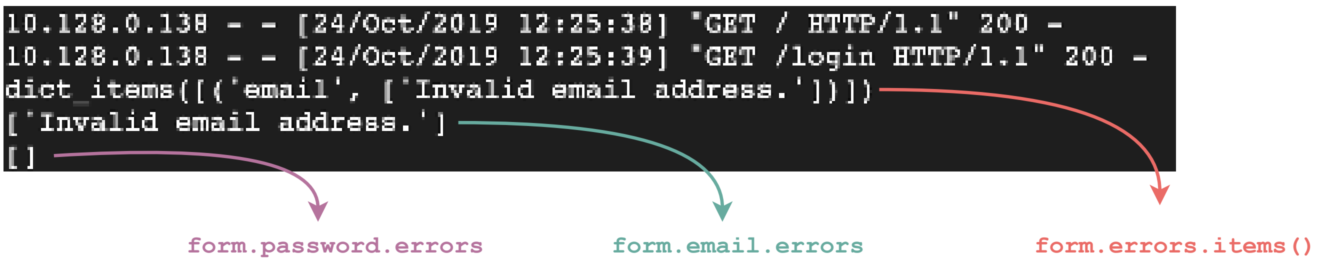

Try it Yourself: Again, try to submit with the login form with an *invalid* **email address**.

Output

You can observe the output of the functions below:



```
10.128.0.138 - - [24/Oct/2019 12:25:38] "GET / HTTP/1.1" 200 -
10.128.0.138 - - [24/Oct/2019 12:25:39] "GET /login HTTP/1.1" 200 -
dict_items([('email', ['Invalid email address.'])])
['Invalid email address.']
[]
```

Display errors on the templates

We can also display the validation error messages at the login template. Take a look at the application below:

```
#header {
  padding: 30px;
  text-align: center;
  background: #140005;
  color: white;
  font-size: 40px;
}
#footer {
   position: fixed;
   width: 100%;
   background-color: #BBC4C2;
   color: white;
   text-align: center;
   left: 0;
   bottom:0;
}
ul {
  list-style-type: none;
  margin: 0;
  padding: 0;
}

li {
  display: inline;
}

#error {
    color: red;
}
```

Data handling

Finally, we can obtain the inputs by using `field_name.data`. In the application given below, at **line 20-21**, we have printed the `email` and `password` values obtained from the template.

```
#header {
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  color: white;
  font-size: 40px;
}
#footer {
   position: fixed;
   width: 100%;
   background-color: #BBC4C2;
   color: white;
   text-align: center;
   left: 0;
   bottom:0;
}
ul {
  list-style-type: none;
  margin: 0;
  padding: 0;

}

li {
  display: inline;
}
```

Try it Yourself: Try submitting the form with different inputs and observe the output.

Output

If you input a *valid* **email** and **password**, the terminal will show something similar to the following:

```
Email: veronica.lodge@email.com
Password: fashiondiva
```

Complete implementation

In the lesson *“Data Handling Using the Request Object”*, we created a naive implementation of user authentication. We can implement the same thing using the data and error handling methods discussed in this lesson.

```
#header {
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  color: white;
  font-size: 40px;
}
#footer {
   position: fixed;
   width: 100%;
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}
ul {
  list-style-type: none;
  margin: 0;
  padding: 0;
}

li {
  display: inline;
}
```

Quick Quiz!

Q

The method `form.validate_on_submit()` is a shortcut method for which of these functions?

COMPLETED 0%

1 of 1

In the next lesson, we will again work on the course project. Stay tuned!