Form:

- The HTML **<form>** element defines a form that is used to collect user input.
- An HTML form contains form elements. Form elements are different types of input elements, like text fields, checkboxes, radio buttons, submit buttons, and more.
- There are two basic components of a web form: **the shell** which is the part that the user fills out and **the script** which processes the information.
- The shell has three important parts:
    1. The <FORM> tag, which includes the address of the script which will process the form.
    2. The form elements, like text boxes and radio buttons.
    3. The submit button which triggers the script to send the entered information to the server
- The general syntax of form is:
  <form>
  form elements
  </form>
- The action attribute defines the action to be performed when the form is submitted. Normally, the form data is sent to a web page on the server when the user clicks on the submit button. We add it to the opening <form> tag.
  E.g. **<form action = "server name">**
- **Note:** Flask automatically sends a GET request to the endpoint provided in the action attribute inside the <form></form> tag. As such, make sure app.route() matches the action attribute in the form tags.

Input:

- The **<input>** element is the most important form element.
- The **<input>** element can be displayed in several ways, depending on the type attribute.
  E.g. Here is a table of the different types of inputs.

Type	Description
<input type="text">	Defines a one-line text input field
<input type="submit">	Defines a submit button (for submitting the form)

- **<input type="text">** defines a single-line input field for text input.
- **<input type="submit">** defines a button for submitting the form data to a form-handler. The form-handler is typically a server page with a script for processing input data. The form-handler is specified in the form's action attribute.

  E.g. Here is a snippet of code that has both input type="text" and input type="submit".

```
<form action="/add-comment">
   <input type="text" name="comment-input" placeholder="enter a new comment">
   <input type="submit" name="comment-submit" value="submit">
</form>
```

- The **name attribute** in <input> is used to specify a name for an <input> element. It is used to reference the form-data after submitting the form. Each input field must have a name attribute to be submitted. If the name attribute is omitted, the data of that input field will not be sent at all. For Flask, if you are using request.args.get(), ensure that your

input tags have the name attribute with the matching name as the input in request.args.get().
I.e. The input in request.args.get() must be the same as the name attribute in <input>.

- The **value attribute** in <input> specifies an initial value for an input field.
- The **placeholder attribute** in <input> specifies a short hint that describes the expected value of an input field (e.g. a sample value or a short description of the expected format). The short hint is displayed in the input field before the user enters a value.

SELECT:

- The <select> element is used to create a drop-down list.
- The <option> tags inside the <select> element define the available options in the list.

Label:

- The <label> tag in HTML is used to provide usability improvement for mouse users. I.e, if a user clicks on the text within the <label> element, it toggles the control. The <label> tag defines the label for <button>, <input>, <meter>, <output>, <progress>, <select>, or <textarea> element.
- General syntax: **<label> form content </label>**
- We can put the <input> tag use directly inside the <label> tag.

Creating a form shell:

- Type **<FORM> METHOD=POST ACTION=url>**
- Create the form elements.
- End with a closing </FORM> tag.

The url specifies where to send the form-data when the form is submitted.
The POST request method requests that a web server accepts the data enclosed in the body of the request message, most likely for storing it.

Creating text boxes:

- To create a text box, type **<INPUT TYPE="text" NAME="name" VALUE="value" SIZE="n" MAXLENGTH="n">**
- The <input> tag specifies an input field where the user can enter data.
- The NAME, VALUE, SIZE, and MAXLENGTH attributes are optional.
- The NAME attribute is used to identify the text box to the processing script.
- The VALUE attribute is used to specify the text that will initially appear in the text box.
- The SIZE attribute is used to define the size of the box in characters.
- The MAXLENGTH attribute is used to define the maximum number of characters that can be typed in the box.

Creating larger text areas:

- To create larger text areas, type **<TEXTAREA NAME="name" ROWS=n1 COLS=n2 WRAP> Default Text </TEXTAREA>**
- n1 is the height of the text box in rows and n2 is the width of the text box in characters.
- The WRAP attribute causes the cursor to move automatically to the next line as the user types.

Creating radio buttons:

- To create a radio button, type **<INPUT TYPE="radio" NAME="name" VALUE="Data">Label**
- The <input> tag specifies an input field where the user can enter data.
- "Data" is the text that will be sent to the server if the button is checked.
- "Label" is the text that identifies the button to the user.

Creating checkboxes:

- To create a checkbox, type **<INPUT TYPE="checkbox" NAME="name" VALUE="value">Label**
- **Note:** If you give a group of radio buttons or checkboxes the same name, the user will only be able to select one button or box at a time.
- The <input> tag specifies an input field where the user can enter data.

Creating drop-down menus:

- To create a drop-down menu, type
  <SELECT NAME="name" SIZE=n MULTIPLE>
  <OPTION VALUE= "value1">Label1
  <OPTION VALUE= "value2">Label2
  ...
  </SELECT>
- The SIZE attribute specifies the height of the menu in lines. This is optional.
- MULTIPLE allows users to select more than one menu option. This is optional.
- The <select> element is used to create a drop-down list.
- The <option> tags inside the <select> element define the available options in the list.

Creating a Submit Button:

- To create a submit button, type **<INPUT TYPE="submit" VALUE="NAME">**
- The <input> tag specifies an input field where the user can enter data.

Creating a Reset Button:

- To create a reset button, type **<INPUT TYPE="reset" VALUE="name">**
- The <input> tag specifies an input field where the user can enter data.