Form Tags in HTML

1. Introduction to Forms

- **What is a Form?**

  - A form in HTML is a way to collect user input. The data can be sent to a server for processing, like signing up for a newsletter, submitting feedback, or logging in.

  - Forms are essential for interactive websites. They enable users to interact with your website by providing input that can be processed for various purposes. During this course we will not hook up our forms to actually process the input - that would require using a proper programming language, like Python, Java or PHP on the back end, or to use JavaScript on the front end. However, without forms, we do not have the full picture ready, so we will introduce them for you!

2. Basic Structure of an HTML Form

Let's create a simple form for signing users up on our app!

First we need to decide what data do we need and what is the type of said data! We should not save date of births with just numbers or a dropdown, and we should not store emails in a password field. Each form input has their specific use case!

The data we will need is as follows:

- first name - probably just text
- last name - same
- email - text, but maybe we can check if it's a valid email via html input tags?
- favourite animal - radio buttons, since we want just a single answer
- Country of residence - a dropdown could serve us well here
- Biography - a big textfield would suit best
- subscribe - yes/no questions can be a checkbox

Let's see what it would look like in practice! Type the code below above the footer but below the main tags

Example Code:

```
    <h2>Sign up for more puppies!</h2>
    <form action="" method="POST">
        <label for="first_name">First Name:</label><br>
        <input type="text" id="first_name" name="first_name" required><b:

        <label for="last_name">Last Name:</label><br>
        <input type="text" id="last_name" name="last_name" required><br>

        <label for="email">Email:</label><br>
        <input type="email" id="email" name="email" required><br><br>

        <label for="password">Password:</label><br>
        <input type="password" id="password" name="password" required><b:

        <label for="favourite_animal">Favourite animal:</label><br>
        <input type="radio" id="dog" name="favourite_animal" value="dog":
        <label for="dog">Dog</label><br>
        <input type="radio" id="cat" name="favourite_animal" value="cat":
        <label for="cat">Cat</label><br><br>
        <input type="radio" id="hedgehog" name="favourite_animal" value=
        <label for="hedgehog"> Hedgehog </label><br><br>

        <label for="country">Country:</label><br>
        <select id="country" name="country">
            <option value="england">England</option>
            <option value="scotland">Scotland</option>
            <option value="Wales">Wales</option>
            <option value="northern_ireland">Northern Ireland</option>
        </select><br><br>

        <label for="bio">Biography:</label><br>
        <textarea id="bio" name="bio" rows="4" cols="50"></textarea><br>

        <input type="checkbox" id="subscribe" name="subscribe">
        <label for="subscribe">Subscribe to newsletter</label><br><br>

        <input type="submit" value="Submit">
    </form>
```

Let's see some more details about each tag in our form and their possible attributes!

3. Detailed Explanation of Form Elements

1. `<form>` **Tag:**

   - **Attributes:**

- - **`action`** : The URL where the form data will be sent.
  - **`method`** : The HTTP method (`GET` or `POST`) used to submit the form. For us, it's not important for now

  - **Example:** `html <form action="/submit_form" method="POST">`

2. **`<input>` Tag:**

   - **Types of Inputs:**

     - **Text Input:** `html <input type="text" name="first_name">` Allows for short text input
     - **Password Input:** `html <input type="password" name="password">` Hides the typed value (only hides it on screen!)
     - **Radio Buttons:** `html <input type="radio" name="gender" value="male">` Allows the selection of one option
     - **Checkbox:** `html <input type="checkbox" name="subscribe">` Can check multiple boxes
     - **Email:** `html <input type="email" name="email">` Before submission checks if the value is structured like an email
     - **Submit Button:** `html <input type="submit" value="Submit">` Submits the entire form, executing the method and action in the form tag

3. **`<label>` Tag:**

   - Connects a label with a specific form control.
   - **Example:** `html <label for="fname">First Name:</label>`

4. **`<textarea>` Tag:**

   - Allows for multi-line text input.
   - **Example:**
     `html <textarea name="bio" rows="4" cols="50"></textarea>`

5. **`<select>` and `<option>` Tags:**

   - Creates a dropdown list with predefined options.
   - **Example:**

```
<select name="country">
 <option value="usa">USA</option>
 <option value="canada">Canada</option>
</select>
```