Assignment-2

Question 1: What are HTML forms used for? Describe the purpose of the input, text area, select, and button elements.

HTML forms are used to collect user input and send it to a server for processing. They are essential in web applications for interactions like signing up, logging in, submitting feedback, making purchases, and more.

Form Elements:

* <input>: Collects single-line user data. Includes various type attributes such as.
* Text
* Email
* Password
* Checkbox, Radio
* Number, date, file etc.
* <Text area>: Allows users to enter multi-line text and Comments, descriptions, messages.
* Ex. <text area name="" id=""></text area>
* <Select>: Creates a drop-down list of options. <option> elements nested inside it.
* <select name="Country" id="">

    <option value="us">United States</option>

<option value="UK">UK</option>

</select>

* <Button>: Triggers form submission or custom actions via JavaScript.
* Submit

Ex. <input type="submit" name="" id="">

* Reset

Ex. <input type="reset" name="" id="">

* Question 2: Explain the difference between the GET and POST methods in form submission. When should each be used?
* Get methods
* Sends form data appended to the URL in query string format.
  + (e.g., example.com/form? name=John &age=30).
* The data is visible in the URL.
* Has size limitations (typically around 2000 characters, browser-dependent).
* Can be bookmarked or cached.
* When the form submission is idempotent (doesn’t change server state).
* For search forms, filters, or data retrieval (e.g., search engines, filters on e-commerce sites).
* When you want to bookmark or share the result via URL.
* Post methods
* Sends form data in the body of the HTTP request, not visible in the URL.
* No significant size limitations.
* More secure for sensitive data (though not encrypted unless using HTTPS).
* Cannot be bookmarked or cached easily.
* Summary:

| **Feature** | **GET** | **POST** |
| --- | --- | --- |
| Data in URL | Yes | No |
| Data length | Limited | Unlimited (practically) |
| Bookmarkable | Yes | No |
| Secure for sensitive? | No (unless HTTPS, still visible) | Yes (especially with HTTPS) |
| Server state change? | No | Yes |
| Typical usage | Search, filters, navigation | Login, sign-up, form submissions |

Question 3: What is the purpose of the label element in a form, and how does it improve accessibility?

* Purpose of the <label> element
* The <label> element is used to associate a text description with a form control, such as an <input>, <select>, or <text area>.
* **In the example:**
* The for="email" attribute in <label> matches the id="email" of the <input>.
* This creates a link between the label and the input field.

<label for="email">Email</label>

<input type="email" id="email" name="">

* **How It Improves Accessibility:**
* **Screen Reader Support:**
  + Screen readers announce the label text when the user focuses on the input.
  + Without a label, users may not know the purpose of the field.
* **Clickable Area:**
  + Clicking on the <label> sets focus on the associated input (e.g., radio buttons or checkboxes), making the form easier to use.
* **Better Form Navigation:**
  + Labels help assistive technologies organize and present form fields more meaningfully.
* **Improved Form Semantics:**
  + Clear, associated labels make forms easier to understand for all users, not just those using assistive tools.