LECTURE 33

POST AND FORMS

MCS 275 Spring 2023

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LECTURE 33: POST AND FORMS

Reminders and announcements:

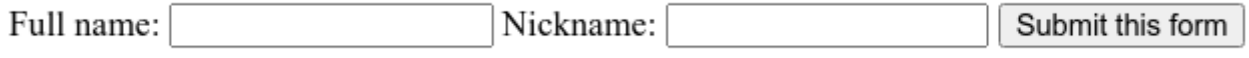
- Project 4 is due 6pm CDT Friday 28 April.
- Today is the last day to submit initial application for a non-SQLite project 4 topic.

WEB APP TODO LIST

- ☑ HTML mockup
- ☑ Stylesheet
- ☑ Learn a bit about Flask
- ☑ Database schema & test data
- ☑ Python code to generate worker view HTML from a database query
- ☐ Add page to create new work order
- ☐ Make buttons on worker view page work

FORMS

Interactive elements in an HTML document (text entry, checkbox, dropdown list, etc.)




```
<form action="https://example.com/formsub/">
    <label for="full">Full name:</label>
    <input type="text" id="full" name="full">
    <label for="nick">Nickname:</label>
    <input type="text" id="nick" name="nick">
    <input type="submit" value="Submit this form">
</form>
```

jsfiddle is a nice way to test out form designs (for code that can be public).

INPUTS NAME VS ID

Each form input should have both a `name` and `id` attribute. Usually they are equal, but they have separate roles:

- `name` is what this value is called when submitted to the server.
- `id` is used to match an input with its `<label>`.

TEXTAREA

`<input type="text">` is typically for single-line answers.

Longer text entry (multi-line) should be handled with a `<textarea>` tag.

HTTP REQUEST TYPES

GET - load a resource, the only action we've considered so far.

GET requests are supposed to be idempotent, meaning repeating the same request multiple times has the same effect as doing it once.

HTTP REQUEST TYPES

POST - submit data and/or request an action.

POST requests are not expected to be idempotent. Browsers typically prevent reloading a POST request, for example.

By default, forms use a GET request and put form data in the URL.

This is usually a bad idea, and a POST request is more appropriate.

Easy change: Add `method="post"` attribute to the `<form>` tag.

WHAT FORM GET REQUEST LOOKS LIKE

Form values become **query parameters**, e.g.

```
https://example.com/formsub/?full=David%20Dumas&nick=deedee
```

Many ascii characters appear verbatim but others* become % escape sequences with two hex digits. Flask decodes these and makes the parameters available as `flask.request.values.get(name)`.

* The precise encoding scheme is specified in RFC3986. Python's built-in `urllib.parse` module has

functions that perform this type of encoding/decoding: `urllib.parse.quote` and `urllib.parse.unquote`. When using Flask, you usually won't call these directly.

Form values are made available to the function handling submission through `flask.request.values.get(name)`.

Note that a Flask route must explicitly declare that it accepts POST requests:

```
from flask import Flask, request

# ... app setup ...

@app.route('/registernick',methods = ['POST', 'GET'])
def record_fullname_and_nickname():
    print("Received nickname {}".format(
        request.values.get("nick")
    ))
```

FLASK FUNCTIONS

All are in the `flask` module:

- **`redirect(url)`** - Returning this object from a route will cause the HTTP server to issue a 302 response code, telling client to load `url` instead.
- **`abort(http_error_code)`** - Immediately stop and return a HTTP error code (usually 400 bad request, 401 not authorized, 403 forbidden, or 404 not found).

ROUTES

- **`/worker/<name>/`** - (GET) worker's view of orders
- **`/new/`** - (GET) form for new order
- **`/new/submit`** - (POST) form submission destination
- **`/wo/<int:woid>/`** - (GET) work order status
- **`/wo/<int:woid>/assign_to/<str:name>/`** - (GET*) assign work order to user
- **`/wo/<int:woid>/unassign/`** - (GET*) unassign work order
- **`/wo/<int:woid>/complete/`** - (GET*) mark work order complete

* These should really be POST but we would need to use javascript or a different button markup to do it because <a> tags generate a GET request.

REFERENCES

- jsfiddle - Write and test HTML+CSS quickly in browser
- HTML tutorial from w3schools
- CSS tutorial from w3schools
- The Flask tutorial

REVISION HISTORY

- 2022-04-13 Last year's lecture on this topic finalized
- 2023-04-10 Updated for 2023