

Week 9 Section

Name Circle: What's the optimal nap time?

Upcoming Schedule:

- Test (11/15-11/21)
 - Review Sessions on Wednesday, Thursday, Friday
- Final Project
 - 11/14: Proposal
 - 11/29: Status Report
 - 12/7: Submission

Content Recap

Overall Diagram

Flask

Why Flask?

- Allows us to dynamically generate HTML pages.
- Allows us to store data over time.

Getting Started with Flask

- It's rather easy to get started using Flask within CS50 IDE.

```
from flask import Flask
```

- After importing the Flask module, we need to initiate a Flask application.

```
app = Flask(__name__)
```


Using Functions to Determine Behaviour

```
@app.route("/")  
def index():  
    return "You are at the index page!"  
  
@app.route("/sample")  
def sample():  
    return "You are on the sample page!"
```

- Data can be passed in via URLs, much like using HTTP GET.

```
@app.route("/show/<number>")  
def show(number):  
    return f"You passed in {number}."
```

- Data can be passed in via HTML forms as well, as via HTTP POST, but we need to clarify things a bit more for Flask if we do:

```
@app.route("/login", methods=['GET', 'POST'])
def login():
    # if the username field of form missing
    if not request.form.get("username"):
        return apology("need a username!")
```

- Or we could vary our function's behavior depending on what kind of HTTP request we got.

```
@app.route("/login", methods=['GET', 'POST'])
def login():
    if request.method == "POST":
        # do one thing
    else:
        # do a different thing
```

- Flask has a number of different built-in methods you'll find useful, particularly for Problem Set 7 but also perhaps for Problem Set 6.

`url_for()`

`redirect()`

`session()`

`render_template()`

Jinja

Why Jinja?

- Allows us to write HTML templates we can fill in later

- Jinja is introduced in the template in one of two ways:
 - `{% ... %}`
 - These delimiters indicate that what is between them is control-flow or logic.
 - `{{ ... }}`
 - These delimiters indicate that what is between them should be evaluated and effectively “printed” as HTML.
- Exactly what you can do with Jinja is an exercise for home, but its syntax is generally Python like, with a couple of quirks due to the way it is interspersed with HTML.

Pset Preview

Finance

- One of the longest psets, so start early.
- You'll need to create your own table in the database.
- The walkthrough is long but worth it.
- New interface to work with databases (optional)
- You should start to see lots of patterns, and you should be able to re-use some code
- If there's time, let's take a look at the first part of finance!