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Decorators

What is a decorator?

A decorator in Python is a function that modifies the behavior of other functions, typically applying some extra functionality.

Let's look at an example and determine what it does (this example also shows the syntax of the @ to signify the decorator)

```
def override(func):
    def incr():
        return func() + 1
    return incr
```

```
@override
def one():
    return 1
```

```
print(one())
```

prints 2, since its behavior has been overridden (its return value has been increased by 1, thanks to

For the most part (in the next pset) you will be using the `@app.route()` decorator to specify the URL associated with a function and which methods (HTTP GET, HTTP POST) apply.

Flask

Flask is a Python-based web microframework that automates the process of building simple web apps.

Applications are typically written in a file called `application.py`, and the behavior of the entire Flask site springs from there.

The simplest Flask app might look something like this:

```
from flask import Flask
```

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

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

What does this code do? What does the `@app.route` do in this case? To add more url app routes just add more to this `application.py` file!

Jinja

Jinja is a Python inspired templating language. It basically makes it so that you don't have to rewrite html code (which is tedious and a waste of time). This allows you to have things like a base html file that is taken in and modified (used as a template) by other pages in your code. Very convenient stuff.

Basically, you define a simple `layout.html` or equivalent, leaving some parts as "fill-ins" using Jinja syntax (this is your page template), and then other `.html` files "extend" this template, filling in those gaps left in the template, sort of like a code-based mad libs!

You don't have to know much about this, but if you see different syntax in html files, this is that. This is very convenient to use when you are actually developing on the web too. Saves a lot of time and helps make less mistakes.

SQL

What is SQL? It is a programming language that is used basically only to manage data in a database. It stands for Structured Query Language. The 4 SQL commands you'll need to know are the ones below.

1. Update: Update data in a database table

```
# update table, changing values in particular columns
```

```
UPDATE table SET col1 = val1, col2 = val2, ...
```

```
# update table, changing col1 to val1 where "name" equals "identifier"
```

```
UPDATE table SET col1 = val1 WHERE identifier = "name"
```

2. INSERT INTO: Insert certain values into a table

```
# insert into table the row of values
```

```
INSERT INTO table VALUES values
```

```
# insert into table under columns col1 & col2, val1 & val2
```

```
INSERT INTO table (col1, col2) VALUES (val1, val2)
```

3. SELECT: Select values to view

```
# select a column from table to compare/ view
```

```
SELECT col FROM table WHERE col = "identifier"
```

```
# select all columns from a table
```

```
SELECT * FROM table
```

(generally the `*` in programming means everything. Fun fact.)

4. DELETE: Delete from table

delete a row from table

DELETE FROM table WHERE col = "identifier"