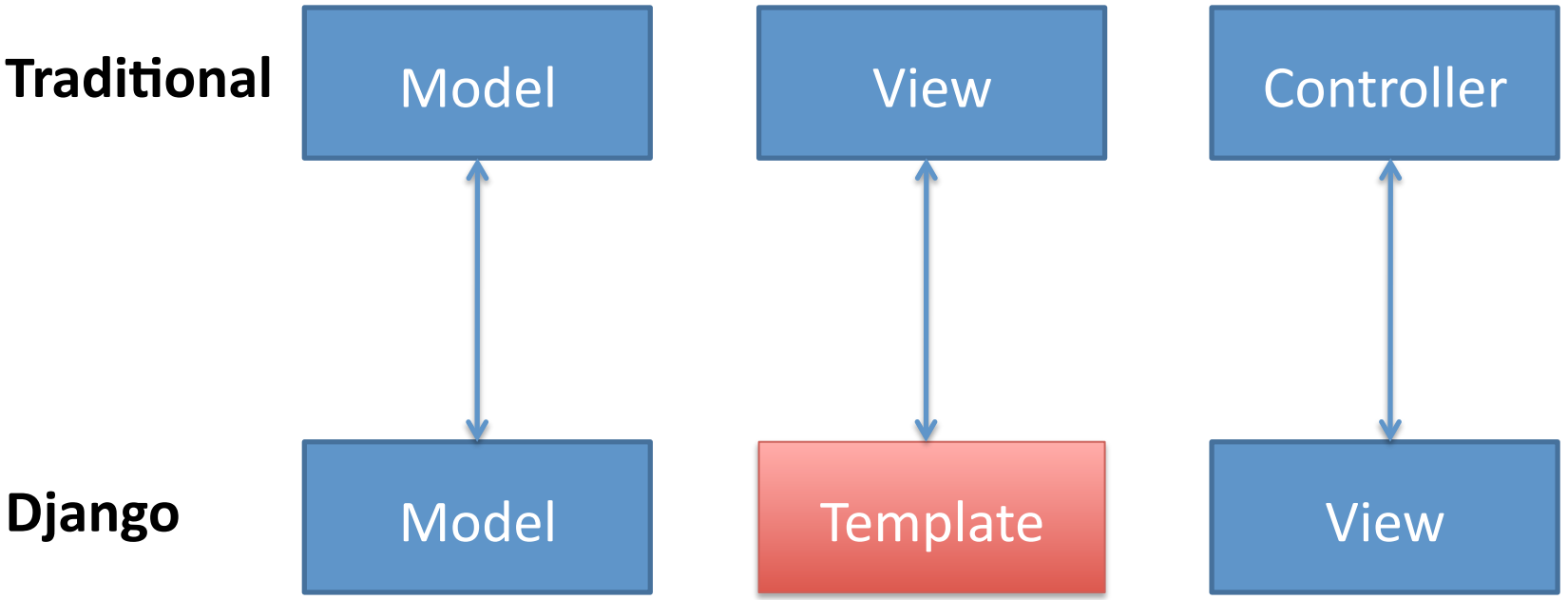
Django Lecture 5: Templates

Django Architecture: Model-Template-View (MTV)



Templates

- A text-based template for HTML, CSS, XML, JavaScript, etc.
- Mixture between hard-coded text and abstractions
- Abstractions
  - Variables: `{{ ... }}`
  - Tags: `{% ... %}`
- Re-useable and extensible

Variables

```
{% extends 'base.html' %}
{% block content %}

<h1>
  {{ musician.first_name }} {{ musician.last_name }}
</h1>
<p>
  Instrument: {{ musician.instrument }}
</p>

{% endblock %}
```

Variables

- `{{ variable }}`
  - If variable doesn't exist, then output `TEMPLATE_STRING_IF_INVALID` (default: empty string "")
- `{{ variable.attribute }}`
  1. Dictionary Lookup: `variable["attribute"]`
  2. Attribute Lookup: `variable.attribute`
  3. Method Call: `variable.attribute()`
  4. List-index Call: `variable[attribute]`

Filters

```
{{ variable|filter }}
```

- Modify output of variables

```
foo := “Hello World”
bar := [‘a’, ‘b’, ‘c’]

{{ foo|lower }} --> hello world
{{ bar|length }} --> 3
{{ bar|slice:“:2” }} --> [‘a’, ‘b’]
```

Tags

- Like a mini programming language
  - for loops
  - if/else clauses
  - comments
  - blocks
  - …
- `{% tag %} ... {% endtag %}`

Musician List

```
{% extends 'base.html' %}
{% block content %}
<ul>
    {% for musician in musician_list %}
    <li>
   {{ musician.first_name }} {{ musician.last_name }}
    </li>
    {% endfor %}
</ul>
{% endblock %}
```

Template Inheritance

- Define extensible parts of a template with block tags

```
{% block name %}
...
{% endblock %}
```

- Create child templates that can extend blocks
- Load parent template with

```
{% extends "parent_template" %}
```

Template Inheritance

- In child template, redefine contents of the parent's block tag
  - similar to overriding methods in class inheritance
- If a block tag is not redefined, then use contents of block tag in parent
- `{{ block.super }}` explicitly refers to contents of block tag in parent

base.html

```
<html>
    <head>
        <title>My Music Site</title>
    </head>
    <body>
        <a href="/home">Home</a>
        <div id="content">
            {% block content %}
            {% endblock %}
        </div>
    </body>
</html>
```

Template Reuse

```
{% extends 'base.html' %}
{% block content %}

<h1>
  {{ musician.first_name }} {{ musician.last_name }}
</h1>
<p>
  Instrument: {{ musician.instrument }}
</p>

{% endblock %}
```