KAZAKH KBTU BRITISH
TECHNICAL
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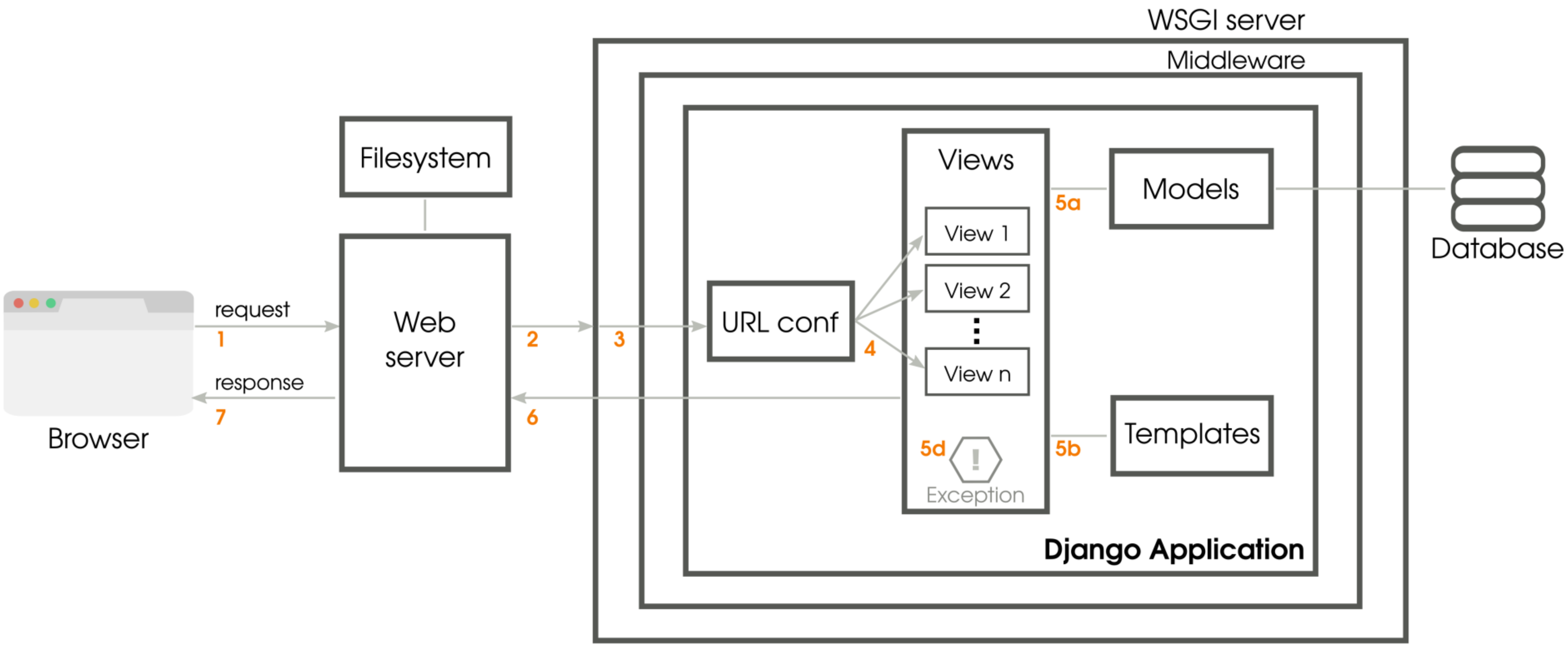
WEB DEVELOPMENT

Lesson 10

How Does Django Works



Regular Expressions in URL

Django 1.*	**Django 2.***
url	path
url	re_path

Regular Expressions in URL

`.` — (dot) Any character

`\d` — Any digit

`[A-Z]` — Any character A-Z (uppercase)

`[a-z]` — Any character, a-z (lowercase)

`[A-Za-z]` — Any character, a-z (case insensitive)

`+` — One or more of the previous expression

`[^/]+` — All characters except forward slash

`?` — Zero or more of the previous expression

`{1,3}` — Between one and three (inclusive) of the previous expression

https://docs.djangoproject.com/en/2.1/topics/http/urls/

How Django Processes a Request

- `python manage.py runserver`
  - `settings.py`
  - `ROOT_URLCONF`
- `/time/`
  - look through all urls patterns and compare
  - `HTTPRequest` object as first parameter
  - view function responsible to return `HTTPResponse`

404 Errors

Word About Pretty URLs

```
(r'^time/plus/\d+/$', hours_ahead),
```

- `/time/plus/1/`
- `/time/plus/2/`
- `/time/plus/3/`
- `/time/plus/1000000/`

Word About Pretty URLs

```
(r'^time/plus/\d{1,2}/$', hours_ahead),
```

- `/time/plus/1/`
- `/time/plus/2/`
- `/time/plus/3/`
- `/time/plus/1000000/`

Passing that data to the view function

parentheses around the data

```
(r’^time/plus/(\d{1,2})/$’, hours_ahead),
```

Coding Order

1. views —> urls

2. urls —> views

Django new App

The Django Template System

```
(r’^time/plus/(\d{1,2})/$’, hours_ahead),
```

MTV

- **`M (Model)`** — data access layer
- **`T (Template)`** — presentation layer
- **`V (View)`** — business logic layer

Configuring the Database

Configuring the Database

`settings.py`

- `DATABASE_ENGINE = ''`
- `DATABASE_NAME = ''`
- `DATABASE_USER = ''`
- `DATABASE_PASSWORD = ''`
- `DATABASE_HOST = ''`
- `DATABASE_PORT = ''`

Configuring the Database

`settings.py`

- `DATABASE_ENGINE = ''`

Settings	Database	Required Adapter
`postgresql`	PostgreSQL	**`psycopg`** version 1.x
`postgresql_psycopg2`	PostgreSQL	**`psycopg`** version 2.x,
`mysql`	MySQL	**`MySQLdb`**
`sqlite3`	SQLite	**`pysqlite`**
`ado_mssql`	Microsoft SQL Server	**`adodbapi`** version 2.0.1+
`oracle`	Oracle	**`cx_Oracle`**

Shop —new Django app

Defining Models in Python

Python model → SQL `CREATE TABLE`

Create new migration file if necessary

```
>>> python manage.py makemigrations
```

Execute created migration file

(change database schemas)

```
>>> python manage.py migrate
```

Inserting and Updating Data

- Create instance of model
    - save() // INSERT INTO “table_name” …
- Find object and update class fields
    - save() // UPDATE “table_name” SET ...

Selecting Objects

```
>>> products = Product.objects.all()
```

```
SELECT * FROM products;
```

Retrieving Single Objects

```
>>> p = Product.objects.get(id=3)
```

```
SELECT * FROM product WHERE id=3;
```

Questions?