DJANGO OVERVIEW

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DJANGO

WHAT IS DJANTO?

- Django is a high-level Python Web Framework.
- Rapid development
- Free and open source
- Has a thriving and active community.
- Great documentation.

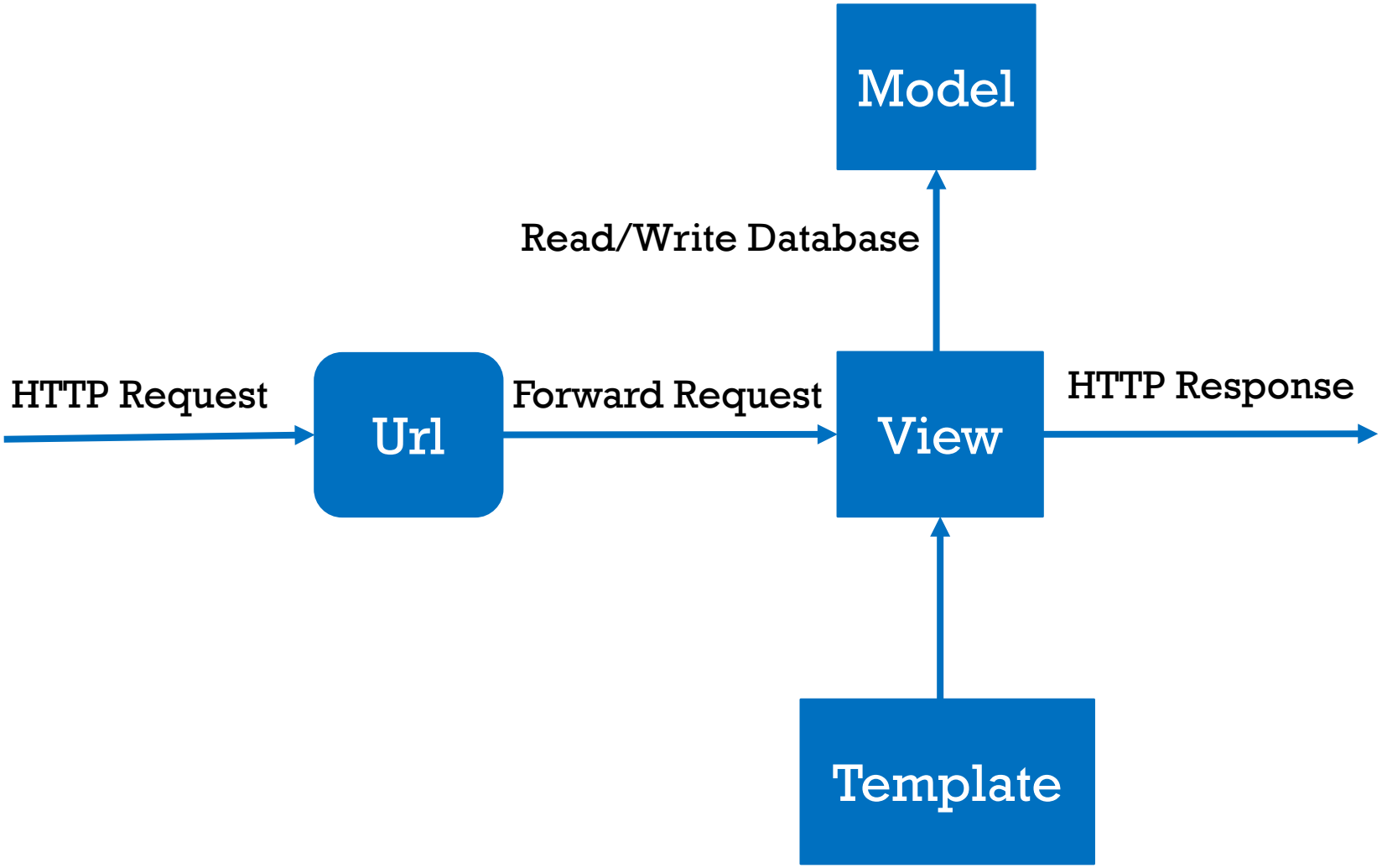
WHERE DID IT COME FROM?

- **Django was initially developed between 2003 and 2005 by a web team who were responsible for creating and maintaining newspaper websites.**
- **After creating a number of sites, the team began to factor out and reuse lot of common code and design patterns.**
- **This common code evolved into a generic web development framework, which was open-sourced as the "Django" project in July 2005.**

DJANGO MVT PATTERN

- **<u>Models</u>: manage(add, modify, delete) records in database**
- **<u>View</u>: A view is a request handler function, which receives HTTP requests and returns HTTP responses.**
- **<u>Template</u>: is a text file defining the structure or layout**
- **<u>URLs</u>: process requests from every single URL**

DJANGO MVT PATTERN



MVC – MVT PATTERN

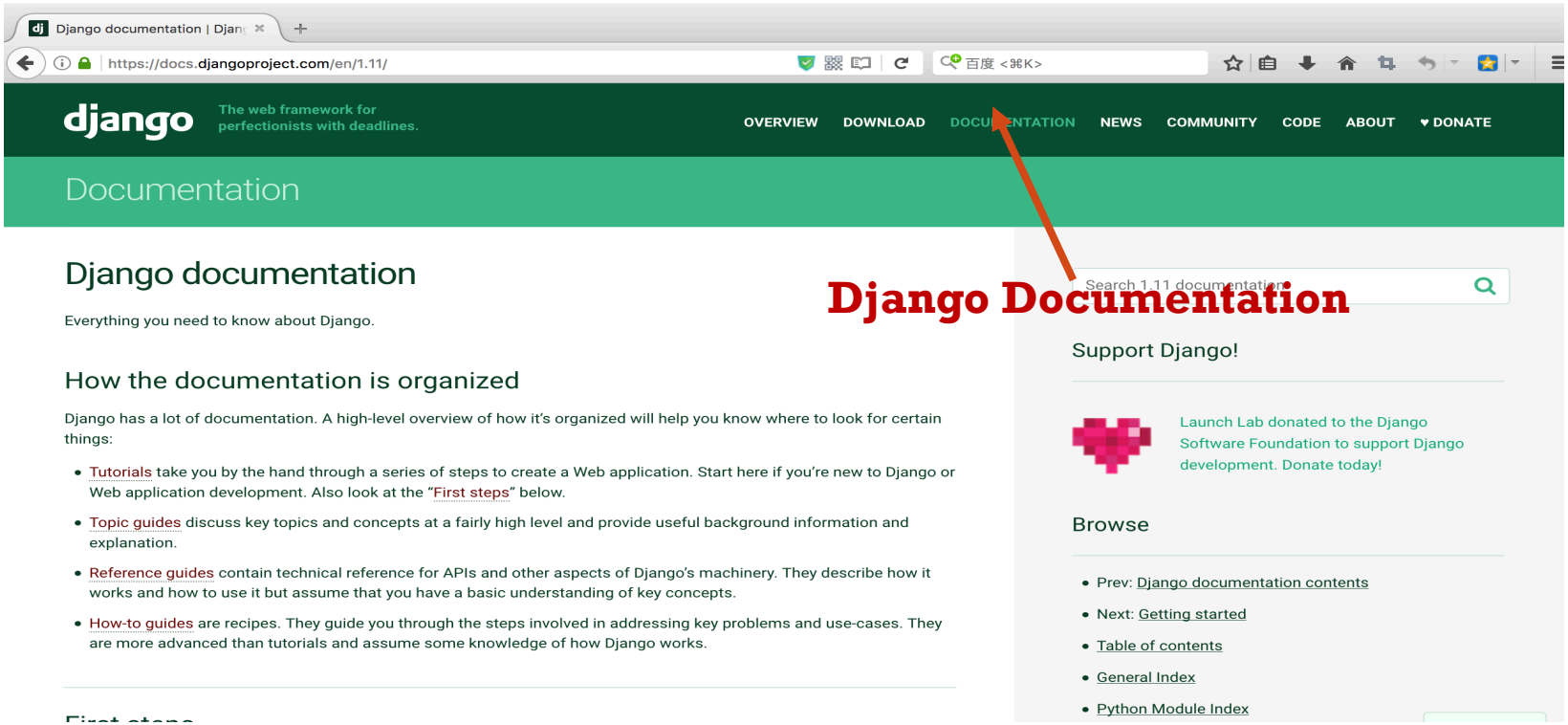
- **When talking about web development, we usually talk about MCV architecture.**
- **MVC pattern is based on three components: Model, View and Controller.**

MVC – MVT PATTERN

- **Model-View-Template (MVT)**
- **The main deference between the two patterns is that Django itself takes care of the Controller part, leaving us with the template.**
- **The template is HTML file mixed with Django Template Language (DTL)**

DJANGO

- **https://www.djangoproject.com/**



Django Documentation

DJANGO ENVIRONMENT

DJANGO SETUP – STEP 1

- **Check Python**
  - **Being a Python web framework, Django require Python**
  - **Before install Django, check the version of Python**

```
$ python –V

Python 3.6.1
```

DJANGO SETUP – STEP 2

- **Install Django**
  - **pip install django // install the newest version**
  - **If want to install previous version**
    - **pip install django==1.10.7**

```
$ pip install django

# install previous version
$ pip install django==1.10.7
```

DJANGO SETUP – STEP 3

- **Verify**
  - **Open terminal and type below command:**

```
$ python
>>> import django
>>> print(django.get_version())
1.11.4
```

LET'S START A PROJECT!

- **Creating Django project**
  - **Before creating, cd to the directory where you want to store your code**
  - **django-admin startproject <project_name>**

```
# create a django project named library
$ django-admin startproject library
```

LET'S START A PROJECT!

```
library
├── library
│   ├── __init__.py
│   ├── settings.py
│   ├── urls.py
│   └── wsgi.py
└── manage.py
```

WHAT IS CREATED?

- **__init__.py treat this folder as package, just for python**
- **settings.py contains all the website settings, such as database, static file and so on.**
- **urls.py defines the site url-to-view mapping.**
- **wsgi.py is used to help your Django application communicate with the web server.**

WHAT IS CREATED?

- **manage.py is kind of your project local django-admin for interacting with your project via command line.**
- **To get full list of command:**
  - **python manage.py help**

VIRTUAL ENVIRONMENTS

- **A virtual environment is a tool to keep the dependencies required by different projects in separate places, by creating virtual Python environments from them.**
- **It solves the "project X depends on version 1.x but project Y need version 4.x".**

VIRTUALENV

- **Virtualenv is a tool to create isolated Python environments.**
- **Virtualenv creates a folder which contains all necessary executables packages that a Python project would need.**

VIRTUALENV -- INSTALL

- **Install**
  - **pip install virtualenv**
- **Test your installation**
  - **virtualenv --version**

```
$ virtualenv --version
15.1.0
```

VIRTUALENV -- CREATE

- **Create a virtual environment for a project**
  - **$ cd project_folder**
  - **$ virualenv <env_name>**
- **Using the Python interpreter of your choice**
  - **$ virtualenv –p python3 <env_name>**

```
$ cd <project_folder>
$ virtualenv env

# define python version
$ virtualenv –p python2.7 env
```

VIRTUALENV -- ACTIVATE

- **To begin using the virtual environment, it needs to be *activated.***

```
# OS or Linux
$ source env/bin/activate

# Windows
$ env\Scripts\activate
```

VIRTUALENV -- DEACTIVATE

- **If you are done working in the virtual environment for the moment, you can *deactivate***

```
(env) $ deactivate
$
```

VERIFY

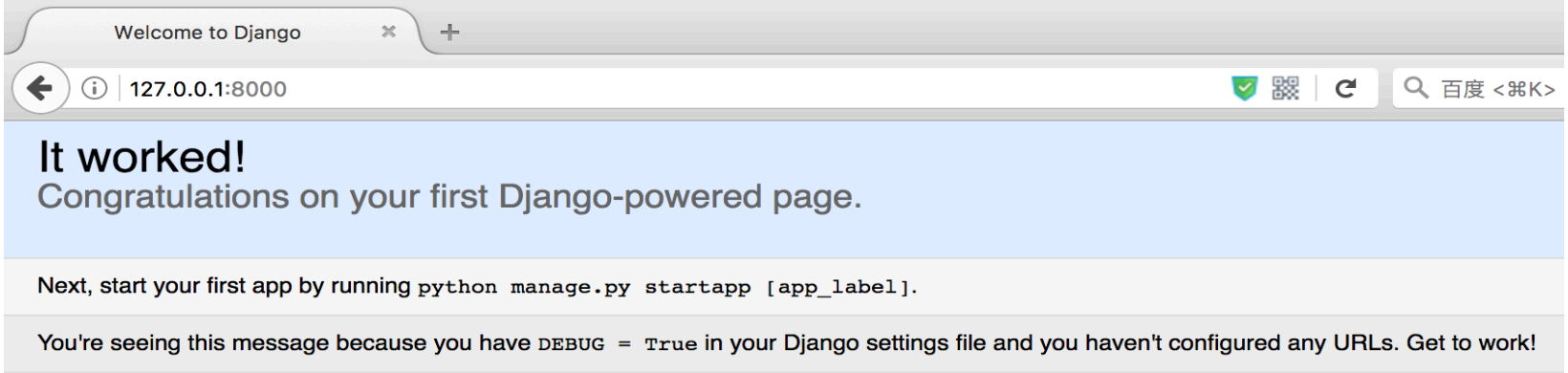
- **Let's verify your Django project works.**

```
$ cd library
$ env\Scripts\activate

(env)$ python manage.py runserver
```

- **Now, open the web page at http://127.0.0.1:8000**
- **By default, the runserver command starts the development server on the internal IP at port 8000.**

IT WORKED!


Welcome to Django
127.0.0.1:8000
百度 <⌘K>
It worked!
Congratulations on your first Django-powered page.
Next, start your first app by running python manage.py startapp [app_label].
You're seeing this message because you have DEBUG = True in your Django settings file and you haven't configured any URLs. Get to work!

CHANGING THE PORT

- **If you want to change the server's port, pass it as a command-line argument. For instance, this command starts the server on port 8080:**

```
(env)$ python manage.py runserver 8080
```

CHANGING THE PORT

- **If you want to change the server's IP, pass it along with the port.**

```
(env)$ python manage.py runserver 0.0.0.0:8000
```

- **Open settings.py**

```
ALLOWED_HOSTS = ['*']
```

PYCHARM

- **PyCharm**
  - **Python IDE for Professional Developers**

Questions?