2. Django urls, views and templates

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Objectives

- MVC Pattern
- Django project structure
- MVC pattern in django
- Creating a new web page
  - Creating new urls
  - Creating views for the urls
  - Creating templates for the views
- Passing data from view to html files

Front-End (client) – Back-End (server)

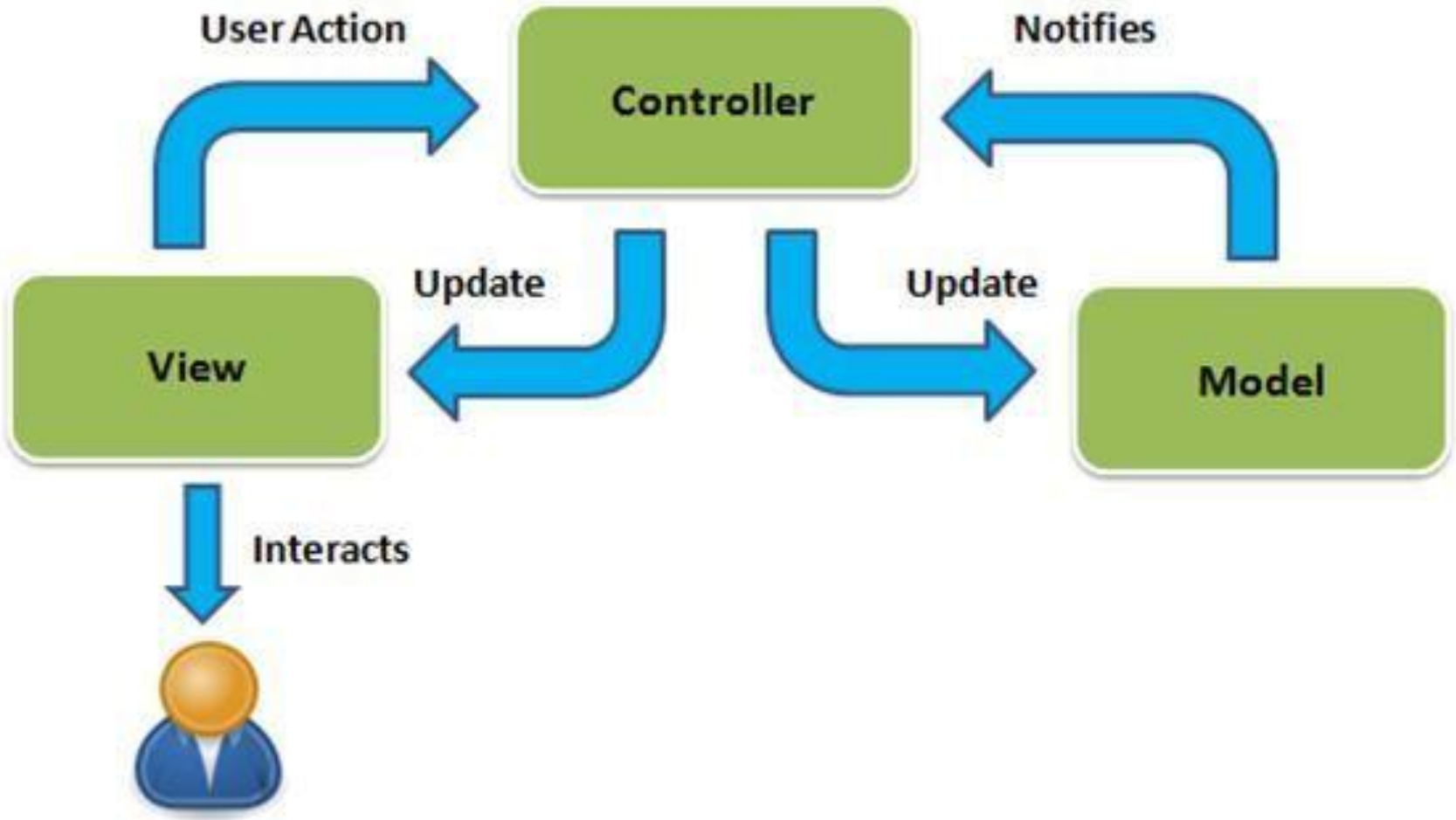
- Frond-End
- Back-End
- Full-Stack

Front-End -> Request -> Back-End

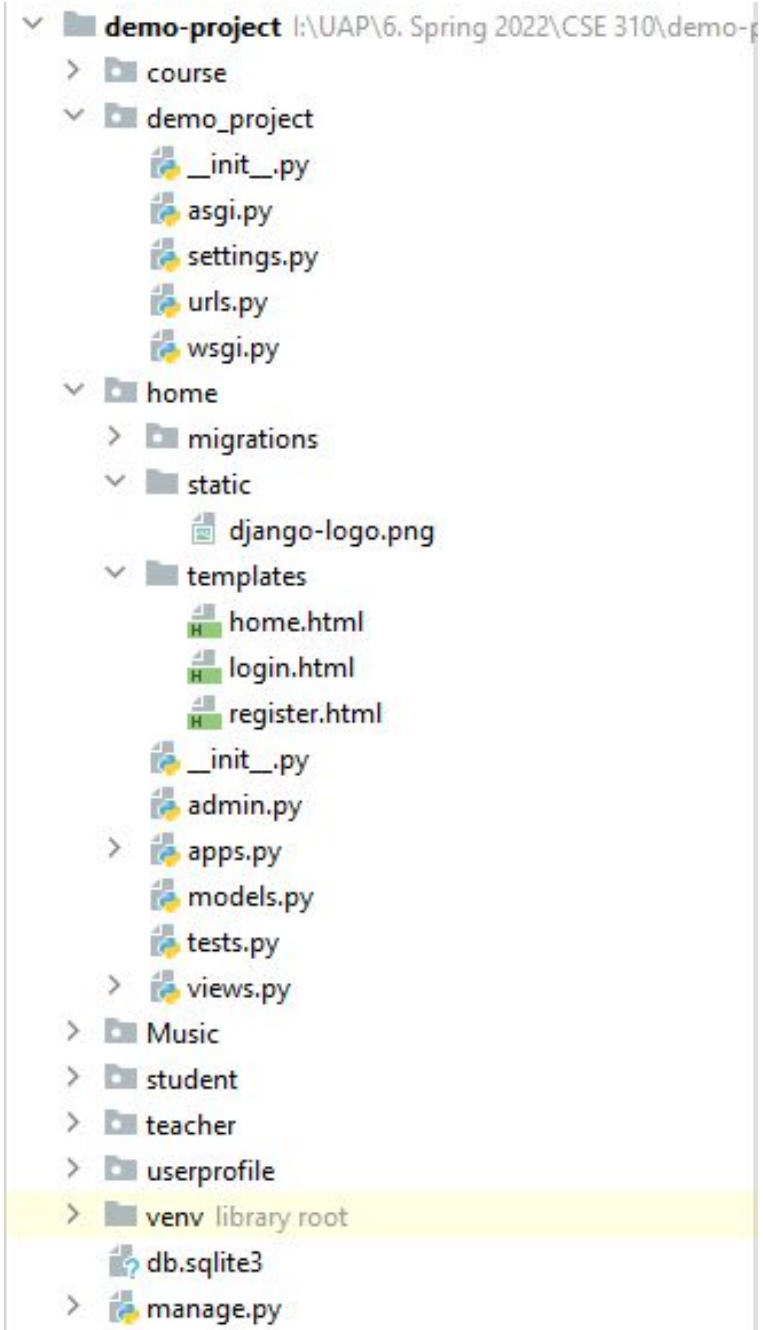
Back-End -> Response -> Front-End

MVC Pattern

M – Model
V – View
C – Controller



Django Project Structure



MVC Pattern in Django

- Model: we have models.py files to hold all the model classes
- View: we have the html files to fix the views
- Controller: we have the urls.py file to fix the urls and views.py file to control all the functionalities of the web pages

Creating a new web page

In order to create a new web page, we need to

1. add a new line in urlpatterns of the urls.py file

```
import home.views as home_views
import userprofile.views as up_views

urlpatterns = [
    path('admin/', admin.site.urls),
    path('',home_views.home_page,name='home'),
    path('about/',home_views.about_page,name='about'),
    path('profile2/',up_views.profile2)

]
```

Creating a new web page

2. add a function in views.py file and map that function with the url in urls.py file

3. Create an html file with necessary codes and render the html from that function

views.py

```
1  from django.shortcuts import render, HttpResponse
2
3  # Create your views here.
4
5  def home_page(request):
6
7      return render(request,'home.html')
8
9  def about_page(request):
10     return render(request,'about.html')
11
```

Passing data from view to html files

- in order to pass any data from we have pass it as a dictionary from the view function to the corresponding html file

```
7   def home_view(request):
8
9       course_title = 'CSE 309'
10      course_name = 'Object Oriented Programming 2'
11      course_credit = 3.0
12
13      context = {
14          'title' : course_title,
15          'name' : course_name,
16          'credit' : course_credit
17      }
18
19      return render(request,'home.html',context)
```

Using the data in html passed from the view function

We can use that dictionary in the html file. The dictionary keys will act as variable names and values will act as variable values

```
1   <!DOCTYPE html>
2
3   <html lang="en">
4       <head>
5           <title>Home</title>
6       </head>
7       <body>
8           <h1>Welcome to django home page.</h1>
9           {{ title }}
10          {{ name }}
11          {{ credit }}
12      </body>
13  </html>
```

Adding the ‘template’ folder

- In our django project, we will show the pages of our project through rendering html files from views.py file functions
- These html files will be stored in the template folder of each app
- Create a template folder in your app folders and store your html files there

Loading the html

- Httprespond()
- render()

Built-in template tags and filters

- https://docs.djangoproject.com/en/4.1/ref/templates/builtins/

Create Sub-systems (apps)

- django-admin startapp app_name
- python manage.py startapp app_name

THANK
YOU!