

6.401 & 6.402 Installing and configuring a channels app

terminal

```
django-admin startproject chat_example
cd chat_example
python manage.py startapp chat
cd chat
rm admin.py apps.py models.py tests.py
touch urls.py
touch consumers.py
touch routing.py
mkdir templates
mkdir templates/chat
touch templates/chat/index.html
touch templates/chat/room.html
cd ../chat_example
touch routing.py
```

routing.py

```
from channels.routing import ProtocolTypeRouter

application = ProtocolTypeRouter({
    # Empty for now (http->django views is added by default)
})
```

settings.py

```
ASGI_APPLICATION = "chat_example.routing.application"

INSTALLED_APPS =
[
    'channels',
    'chat',
]

ALLOWED_HOSTS = [
    'localhost',
    '127.0.0.1',
    '.coursera-apps.org',
    '.labs.coursera.org',
]
```

6.403 Implementing a chat site

chat_example/urls.py

```
from django.conf.urls import include

urlpatterns = [
    path('', include('chat.urls')),
    path('admin/', admin.site.urls),
]
```

chat/urls.py

```

from django.urls import path

from . import views

urlpatterns = [
    path('', views.index, name='index'),
    path('chat/<str:room_name>/', views.room, name='room'),
]

```

chat/views.py

```

def index(request):
    return render(request, 'chat/index.html')

def room(request, room_name):
    return render(request, 'chat/room.html', {'room_name':
room_name })

```

chat/templates/index.html

```

<!DOCTYPE html>
<html>
<head>
    <meta charset="utf-8"/>
    <title>Chat Rooms</title>
</head>
<body>
    What chat room would you like to enter?<br>
    <input id="room-name-input" type="text" size="100"><br>
    <input id="room-name-submit" type="button" value="Enter">

    <script>
        document.querySelector('#room-name-input').focus();
        document.querySelector('#room-name-input').onkeyup =
function(e) {
            if (e.keyCode === 13) { // enter, return
                document.querySelector('#room-name-
submit').click();
            }
        };

        document.querySelector('#room-name-submit').onclick =
function(e) {
            var roomName = document.querySelector('#room-name-
input').value;
            window.location.pathname = '/chat/' + roomName + '/';
        };
    </script>
</body>
</html>

```

chat/templates/room.html

```

<!DOCTYPE html>
<html>

```

```

<head>
  <meta charset="utf-8"/>
  <title>Chat Room</title>
</head>
<body>
  <textarea id="chat-log" cols="100" rows="20"></textarea><br>
  <input id="chat-message-input" type="text" size="100"><br>
  <input id="chat-message-submit" type="button" value="Send">
  {{ room_name|json_script:"room-name" }}
  <script>
    const roomName = JSON.parse(document.getElementById('room-
name').textContent);

    const chatSocket = new WebSocket('ws://' +
window.location.host + '/ws/' + roomName + '/')
    );

    chatSocket.onmessage = function(e) {
      const data = JSON.parse(e.data);
      document.querySelector('#chat-log').value +=
(data.message + '\n');
    };

    chatSocket.onclose = function(e) {
      console.error('Chat socket closed unexpectedly');
    };

    document.querySelector('#chat-message-input').focus();
    document.querySelector('#chat-message-input').onkeyup =
function(e) {
      if (e.keyCode === 13) { // enter, return
        document.querySelector('#chat-message-
submit').click();
      }
    };

    document.querySelector('#chat-message-submit').onclick =
function(e) {
      const messageInputDom = document.querySelector('#chat-
message-input');
      const message = messageInputDom.value;
      chatSocket.send(JSON.stringify({
        'message': message
      }));
      messageInputDom.value = '';
    };
  </script>
</body>
</html>

```

terminal

```
python manage.py runserver
```

6.404 Writing a Consumer

chat_example/routing.py

```
from channels.auth import AuthMiddlewareStack
from channels.routing import ProtocolTypeRouter, URLRouter
import chat.routing

application = ProtocolTypeRouter({
    # (http->django views is added by default)
    'websocket': AuthMiddlewareStack(
        URLRouter(
            chat.routing.websocket_urlpatterns
        )
    ),
})
```

chat/routing.py

```
from django.urls import re_path

from . import consumers

# NOTE USE OF ws/ to separate out our ws URIs, like rest use of
# api/
websocket_urlpatterns = [
    re_path(r'ws/(?P<room_name>\w+)/$',
        consumers.ChatConsumer.as_asgi()),
]
```

chat/consumers.py

```
import json
from channels.generic.websocket import WebsocketConsumer

class ChatConsumer(WebsocketConsumer):
    def connect(self):
        self.accept()

    def disconnect(self, close_code):
        pass

    def receive(self, text_data):
        text_data_json = json.loads(text_data)
        message = text_data_json['message']

        self.send(text_data=json.dumps({
            'message': message
        }))
```

terminal

```
python manage.py migrate
python manage.py runserver 127.0.0.1:8080
```