Handling Errors in Views
In a Django application, a view function is where all the processing is done.

It receives the request and formulates the response.

In this Reading, you'll learn how Django handles runtime errors or exceptions.

The response from the view is an object of **`HttpResponse`**. Its contents are also associated with a respective status code.

For example, status code **404** implies that the resource requested by the client cannot be found. Django has a generic **`HttpResponseNotFound`** class. You can return its object to convey the appropriate message.

```
from django.http import HttpResponse, HttpResponseNotFound
def my_view(request):
    # ...
    if condition==True:
        return HttpResponseNotFound('<h1>Page not found</h1>')
    else:
        return HttpResponse('<h1>Page was found</h1>')
```

You can also return a **`HttpResponse`** with the status code denoting the type of error.

```
from django.http import HttpResponse
def my_view(request):
    # ...
    if condition==True:
        return HttpResponse('<h1>Page not found</h1>', status_code='404')
    else:
        return HttpResponse('<h1>Page was found</h1>')
```

The main difference in using **`HttpResponseNotFound`** as opposed to **`HttpResponse`** that must be understood is that Django internally sends an error code **404.** The appropriate page for 404 can then be configured and rendered, else the browser displays its default **404** view.
A common cause of the **404** status code is the user entering an incorrect URL.

Django makes it easy to work with this error code.

Put a string argument inside the **`HttpResponseNotFound()`** to view the error message. Instead, raise **`Http404`**. Django displays a standard error page with the status.
(Instead, raise **`Http404`** exception).

Consider the following scenario, where you have a **`Product`** model in the app.

The user wants the details of a product with a specific Product ID.

In the following view function, **`id`** is the parameter obtained from the URL.

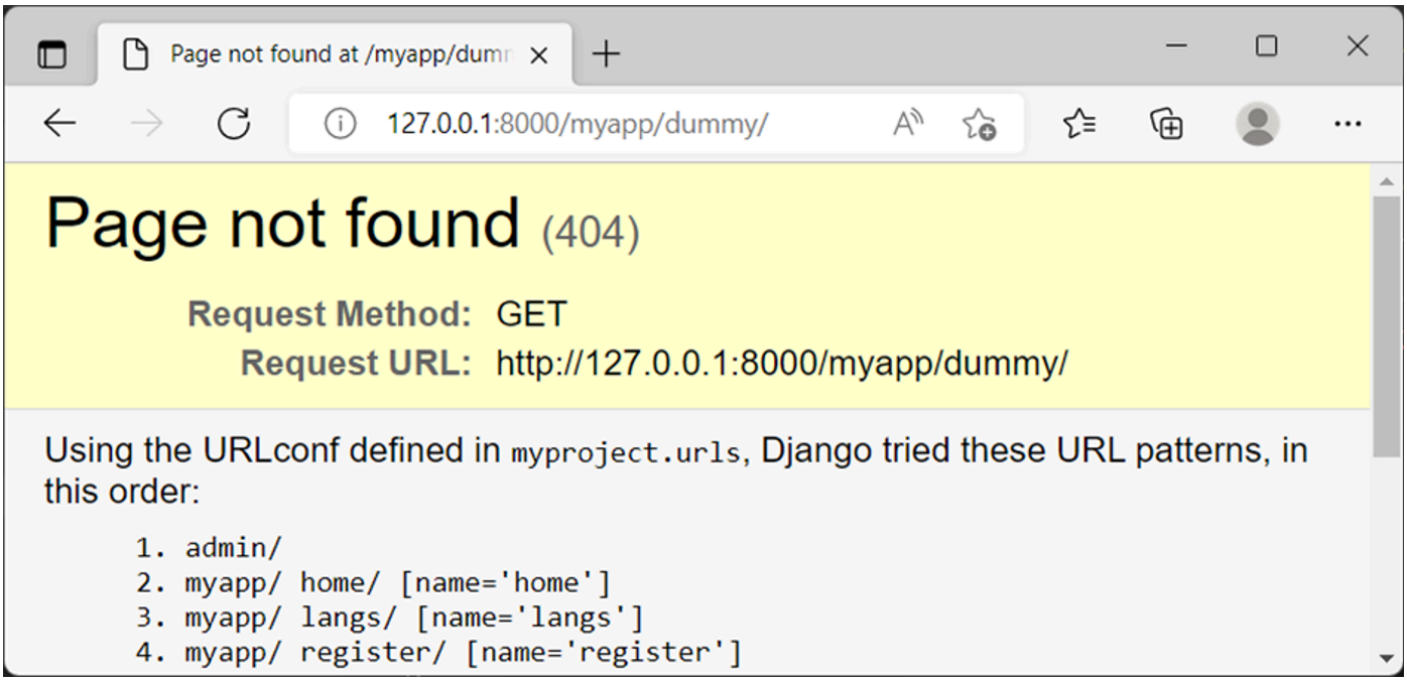
It tries to determine whether any product with the given id is available. If not, the **`Http404`** exception is raised.

```
from django.http import Http404, HttpResponse
from .models import Product

def detail(request, id):
    try:
        p = Product.objects.get(pk=id)
    except Product.DoesNotExist:
        raise Http404("Product does not exist")
    return HttpResponse("Product Found")
```

Just like the HttpResponseNotFound, there are a number of other predefined classes such as **`HttpResponseBadRequest`**, **`HttpResponseForbidden`** and so on.
Custom error pages
If you want to show your own error page whenever the user encounters a **404** error, you must create a **404.html** page and put it in the project/templates folder.
You will learn more about how to do this later when you explore templates.

Displaying error messages in the browser
Usually, the Django development server is in **`DEBUG`** mode, which shows the error's traceback instead of the exception.

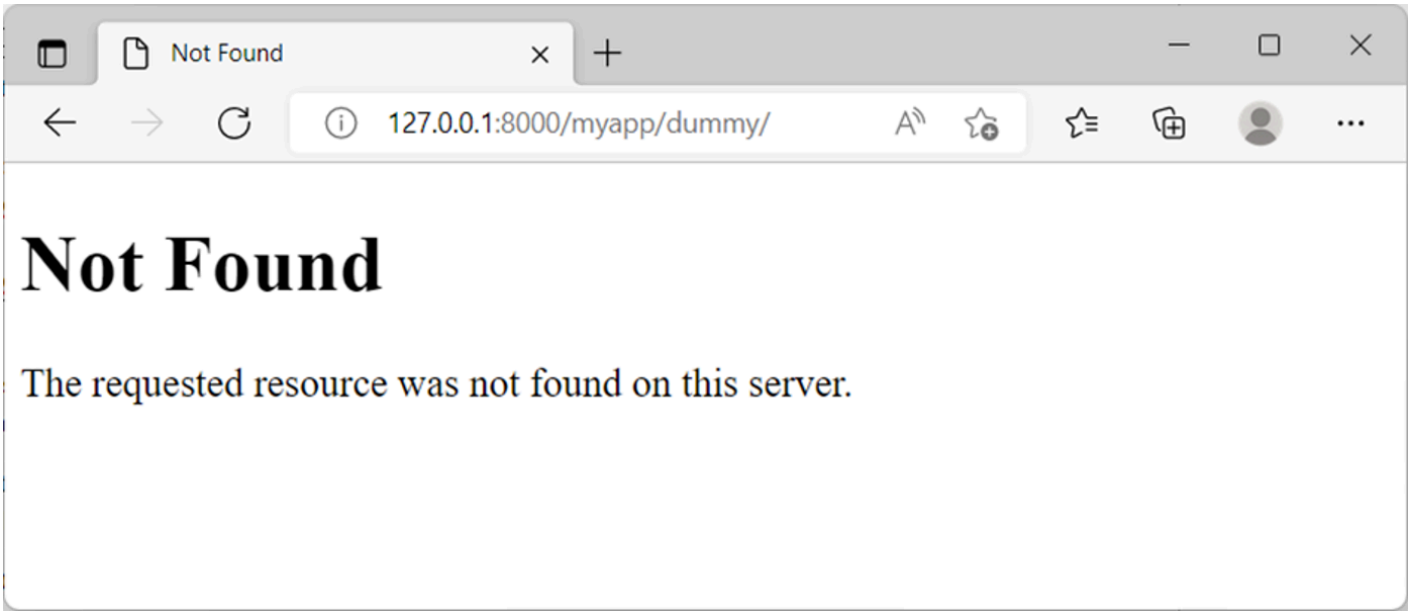


To render the custom exception message, the DEBUG variable in the project's settings should be set to False.

```
#settings.py

# SECURITY WARNING: don't run with debug turned on in production!

DEBUG=FALSE
```



Exception classes

Django's exception classes are defined in the **`django.core.exceptions`** module.

Some important exception types are:

`ObjectDoesNotExist`: All the exceptions of the **`DoesNotExist`** are inherited from this base exception.

`EmptyResultSet`: This exception is raised if a query does not return any result.

`FieldDoesNotExist`: This exception is raised when the requested field does not exist.

```
try:
    field = model._meta.get_field(field_name)
except FieldDoesNotExist:
    return HttpResponse("Field Does not exist")
```

`MultipleObjectsReturned`: When you expect a certain query to return only a single object, however multiple objects are returned. This is when you need to raise this exception.
`PermissionDenied`: This exception is raised when a user does not have permission to perform the action requested.

```
def myview(request):
    if not request.user.has_perm('myapp.view_mymodel'):
        raise PermissionDenied()
    return HttpResponse()
```

`ViewDoesNotExist`: This exception is raised by **`django.urls`** when a requested view does not exist, possibly because of incorrect mapping defined in the **`URLconf`**.

When a certain view is called with a **POST** or **PUT** request, the request body is populated by the form data.

Django's Form API defines various fields specific to the type of data stored. For example, you have **`EmailField`**, **`FileField`**, **`IntegerField`**, **`MultipleChoiceField`**.
These fields have built-in validators. The **`is_valid()`** method returns **True** if the validations are passed. You can raise an exception if it returns False.

```
def myview(request):
    if request.method == "POST":
        form = MyForm(request.POST)
        if form.is_valid():
            #process the form data
        else:
                return HttpResponse("Form submitted with invalid data")
```

In addition to the exceptions defined in the core module, you can process the standard Python exceptions and the database-related exceptions.
In this reading, you learned how to handle errors inside the Django view.