



Add the slug field inside Django Model

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The slug field within Django models is a pivotal step for improving the structure and readability of URLs in web applications. This addition allows developers to automatically generate URL-friendly slugs based on titles, enhancing user experience and search engine optimization (SEO). By implementing this feature, you can create cleaner, more meaningful, and SEO-friendly URLs for your content, which is essential for attracting and retaining website visitors.

Slug field in Django

Let's assume our blog has a post with the title 'The Django book by Geeksforgeeks' with primary key id= 2. We might refer to this post with

`www.geeksforgeeks.org/posts/2.`

Or, we can reference the title like

`www.geeksforgeeks.org/posts/The Django book by Geeksforgeeks.`

But the problem is spaces are not valid in URLs, they need to be replaced by `%20` which is ugly, making it the following

`www.geeksforgeeks.org/posts/The%20Django%20book%20by%20geeksforgeeks`

But it is not solving meaningful URL. Another option can be

`www.geeksforgeeks.org/posts/the-django-book-by-geeksforgeeks`

So, the slug is now *the-django-book-by-geeksforgeeks*. All letters are down cased and spaces are replaced by hyphens –

Adding Slug field in Django Models

The slug field, represented as `models.SlugField` in Django models, is used to store a URL-friendly version of a text-based field, such as a title. Its primary purpose is to create cleaner, more readable, and search engine-friendly URLs for your content.

Python3

```
STATUS_CHOICES = (
    ('draft', 'Draft'),
    ('published', 'Published'),
)

class Post(models.Model):
    title = models.CharField(max_length = 250)
    slug = models.SlugField(max_length = 250, null = True, blank = True)
    text = models.TextField()
    published_at = models.DateTimeField(auto_now_add = True)
    updated = models.DateTimeField(auto_now = True)

    status = models.CharField(max_length = 10, choices = STATUS_CHOICES,
                             default = 'draft')

class Meta:
    ordering = ('-published_at', )

def __str__(self):
    return self.title
```

Adding Slugify to our Project

Now we need to find a way to convert the title into a slug automatically. We want this script to be triggered every time a new instance of *Post* model is created. For this purpose, we will use signals.

Note: Add new file `util.py` in the same directory where `settings.py` file is saved.

Python3

```
import string, random
from django.db.models.signals import pre_save
```

```

from django.dispatch import receiver
from django.utils.text import slugify

def random_string_generator(size = 10, chars = string.ascii_lowercase + string.digits):
    return ''.join(random.choice(chars) for _ in range(size))

def unique_slug_generator(instance, new_slug = None):
    if new_slug is not None:
        slug = new_slug
    else:
        slug = slugify(instance.title)
    Klass = instance.__class__
    max_length = Klass._meta.get_field('slug').max_length
    slug = slug[:max_length]
    qs_exists = Klass.objects.filter(slug = slug).exists()

    if qs_exists:
        new_slug = "{slug}-{randstr}".format(
            slug = slug[:max_length-5], randstr = random_string_generator(size = 5))
        return unique_slug_generator(instance, new_slug = new_slug)
    return slug

```

Signals in Django

In many cases when there is a modification in a model's instance we need to execute some action. Django provides us with an elegant way to handle these situations. The [signals](#) are utilities that allow associating events with actions. We can develop a function that will run when a signal calls it.

In models.py file of posts app where Post Model was defined, add this in the same file:

Python3

```

@receiver(pre_save, sender=Post)
def pre_save_receiver(sender, instance, *args, **kwargs):
    if not instance.slug:
        instance.slug = unique_slug_generator(instance)

```

The *pre_save_receiver* function should be placed separately outside the Post model.

Modify URL with Slug

To modify your `urls.py` file to use the slug field in your Django model for generating URLs, you can create URL patterns that include the slug as a parameter. Here's an example of how to do this:

Python3

```
from django.urls import path
from . import views

urlpatterns = [
    path('posts/<slug:slug>/', views.post_detail, name='post_detail'),
    # Other URL patterns
]
```

Modify Views

This `'detail'` view function in Django takes a `'slug'` parameter from the URL and searches for a post with a matching slug in a case-insensitive manner. If a post is found, it retrieves and renders the post's details using the `'details.html'` template. If no matching post is found, it returns a "Post Not Found" response to inform users of the absence of the requested content.

Note: In `urls.py` edit detail path with `path('posts/', detail)`. In `views.py` edit the detail function with

Python3

```
def detail(request, slug):
    # Filter posts based on the slug (case-insensitive)
    q = Post.objects.filter(slug__iexact=slug)

    if q.exists():
        # If a post with the given slug exists, retrieve the first matching post
        q = q.first()
```

```
else:
    # If no post is found, return an "Post Not Found" response
    return HttpResponse('<h1>Post Not Found</h1>')

# Create a context dictionary containing the retrieved post
context = {'post': q}

# Render the 'details.html' template with the context
return render(request, 'posts/details.html', context)
```

The last step is to add the link in HTML file `View`. Now we are ready to go to `127.0.0.1:8000/posts/title-you-have-added` and it will show you the page `details.html`.

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