Demystifying select_related & prefectch_related

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N+1 Problem

It involves cats and hats!

Model

```
class Cat(models.Model):
    name = models...
    hat = models.ForeignKey(Hats)
```

```
class Hat(models.Model):
    name = models...
    color = models...
```

// Code:

```
cats = Cat.objects.all()
for cat in cats:
    print cat.name
    print cat.hat.name
```

// SQL

SELECT * FROM cat WHERE ...

SELECT * FROM hat WHERE catID = 1

SELECT * FROM hat WHERE catID = 2

SELECT * FROM hat WHERE catID = 3

SELECT * FROM hat WHERE catID = 4

SELECT * FROM hat WHERE catID = 5

Solution

Select_related

Prefetch_related

Select Related

- Follow FK relations
- Results in a single “more complex” query
- Works only on FR and O2O

Prefetch Related

- Separate lookup for each relation
- Joined in Python
- Works on FK, O2O, M2M, O2M, Rev FK

Select Vs. Prefetch

Depends on your cat!

Thank you!


AN x64 PROCESSOR IS SCREAMING ALONG AT BILLIONS OF CYCLES PER SECOND TO RUN THE XNU KERNEL, WHICH IS FRANTICALLY WORKING THROUGH ALL THE POSIX-SPECIFIED ABSTRACTION TO CREATE THE DARWIN SYSTEM UNDERLYING OS X, WHICH IN TURN IS STRAINING ITSELF TO RUN FIREFOX AND ITS GECKO RENDERER, WHICH CREATES A FLASH OBJECT WHICH RENDERS DOZENS OF VIDEO FRAMES EVERY SECOND
BECAUSE I WANTED TO SEE A CAT JUMP INTO A BOX AND FALL OVER.
I AM A GOD.