

Data with Django

February 13, 2017



Managing Data

django





Data example

<https://data.seattle.gov/Permitting/Building-Permits-Current/mags-97de>

Application/Permit Number, Permit Type, Address, Description, Category, Action Type, Work Type, Value, Applicant name, Application Date, Issue Date, Final Date, Expiration Date, Status, Contractor, Permit and Complaint Status URL, Master Use Permit, Latitude, Longitude, Location.

6061738, Construction, 10348 14TH AVE NW, One story addition to front & rear of single family dwelling and construct detached accessory garage, per plan. SINGLE FAMILY / DUPLEX ADD/ALT Plan Review

\$140,000.00 PALMAFFY, DANTE 10/25/2006 Application Accepted

<http://web6.seattle.gov/dpd/PermitStatus/Project.aspx?id=6061738>

47.70488739 122.37383059 (47.70488739°, -122.37

System Data?

django

Application/ Permit Number	Permit Type	Address	Description	Category	Action Type	Work Type	Value	Applicant Name	Application Date	Issue Date	Final Date	Expiration Date	Status	Contractor	Permit and Complaint Status URL	Master Use Permit	Latitude	Longitude	Location
6578806	Construction	706 N 77TH ST	Construct interior alterations on main floor of each unit of an existing duplex, subject to field inspection (STFI)	SINGLE FAMILY / DUPLEX	ADD/ALT	No plan review	\$50000.00	DEHERRERA, LUCAS	01/30/2017	01/30/2017		07/30/2018	Permit Issued		http://web6.seattle.gov/dpd/PermitStatus/Project.aspx?id=6578806		47.68492	-122.34943	706 N 77TH ST (47.68492709, -122.34943726)
6577972	Construction	1401 N 45TH ST	Construct interior alterations to an existing restaurant subject to field inspection (STFI)	COMMERCIAL	ADD/ALT	No plan review	\$80000.00	CLARK, JANE	01/30/2017	01/30/2017		07/30/2018	Permit Issued		http://web6.seattle.gov/dpd/PermitStatus/Project.aspx?id=6577972		47.66122	-122.34043	1401 N 45TH ST (47.66122443, -122.34047032)
6409682	Site Development	388R LAKESIDE AVE S	Shoreline Exemption to allow soil boring in street ROW. Includes boring at 488R Lakeside Ave S.		SHORELINE EXEMPTION ONLY	Plan Review	\$0.00	ANTIEAU, CLAY	01/30/2017		01/30/2017		AP Closed	CITY OF SEA SPU DRAIN & WASTE	http://web6.seattle.gov/dpd/PermitStatus/Project.aspx?id=6409682		47.59916	-122.28652	388R LAKESIDE AVE S (47.59916842, -122.28652139)
6566376	Construction	10055 41ST AVE NE	Construct addition and alterations to existing single family residence, per subject to field inspection (STFI).	SINGLE FAMILY / DUPLEX	ADD/ALT	No plan review	\$18000.00	MERRILL, DAVID	01/30/2017	01/30/2017		07/30/2018	Permit Issued		http://web6.seattle.gov/dpd/PermitStatus/Project.aspx?id=6566376		47.70253	-122.28463	10055 41ST AVE NE (47.70253238, -122.28469434)
6578443	Demolition	1908 NOB HILL AVE N	Demolish existing single family residence, subject to field inspection (STFI).	SINGLE FAMILY / DUPLEX	DEMOLITION	No plan review	\$0.00	CHRISTIANSON, KIRK	01/30/2017				Reviews Completed		http://web6.seattle.gov/dpd/PermitStatus/Project.aspx?id=6578443		47.63607	-122.35044	1908 NOB HILL AVE N (47.63607117, -122.35044647)
6578789	Construction	1100 OLIVE WAY	Blanket Permit for interior non-structural alterations to the 14th floor. For AXON, per plans.	COMMERCIAL	ALTER	Plan Review	\$950000.00	BUCKMASTER, ERIC	01/30/2017				Application Accepted	BLANKET. METROPOLITAN PK. WEST	http://web6.seattle.gov/dpd/PermitStatus/Project.aspx?id=6578789		47.61597	-122.33088	1100 OLIVE WAY (47.61597954, -122.33086962)
6577834	Construction	8040 DIBBLE AVE NW	Construct interior alteration to existing basement, per (STFI)	SINGLE FAMILY / DUPLEX	ADD/ALT	No plan review	\$18942.00	VASQUEZ, JOSEPH	01/30/2017	01/30/2017		07/30/2018	Permit Issued		http://web6.seattle.gov/dpd/PermitStatus/Project.aspx?id=6577834		47.68815	-122.36699	8040 DIBBLE AVE NW (47.68813801, -122.36699697)

System Data



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6578443	Demolition	1908 NOB HILL AVE N	Demolish existing single family residence, subject to field inspection (STFI).	SINGLE FAMILY / DUPLEX	DEMOLITION	No plan review	\$0.00	CHRISTIANSON, KIRK	01/30/2017				Reviews Completed		http://web6.seattle.gov/dpd/PermitStatus/Project.aspx?id=6578443		47.63607	-122.35044	1908 NOB HILL AVE N (47.63607117, -122.35044647)
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System Data

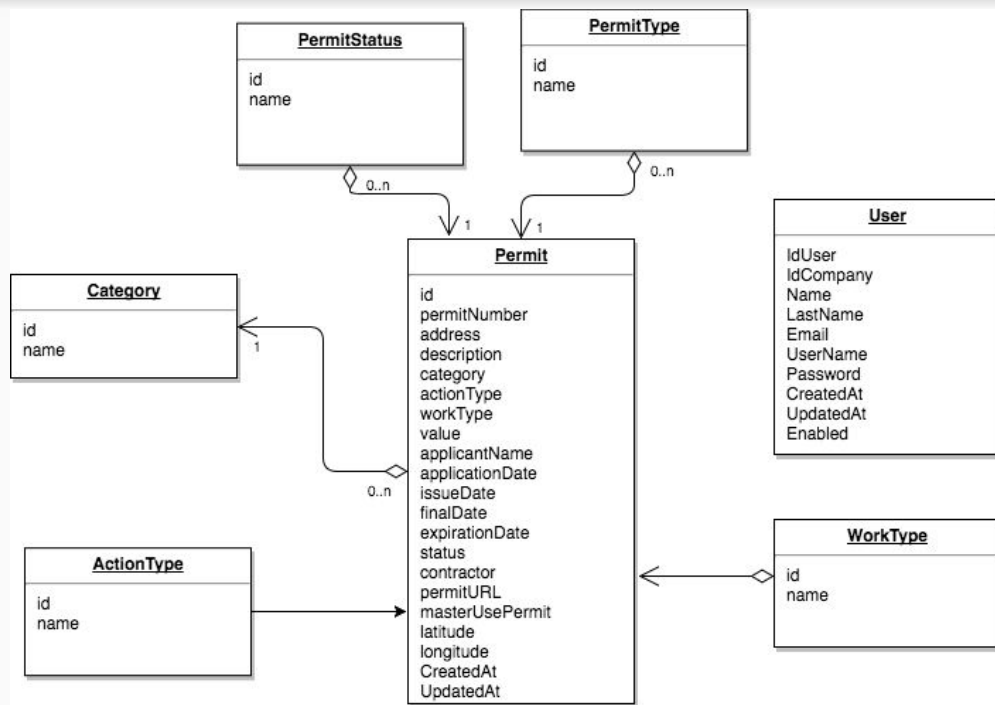
Why do we keep this as system data instead of just loading the spreadsheet every time?

- Define system capabilities
- Save to git
- Normalization
- Keep code and schema in sync when data provide changes
- Write tests to make sure the system works

How do we create example data?

Fixtures! (aka test fixtures)

Data model



Store valid data for linked tables!



Django Data model

terminal

```
> python django-admin.py startproject SBP  
> python manage.py startapp permits
```

permits/models.py

```
class PermitType(models.Model):  
    name = models.CharField(max_length=30)
```

Add 'permits' to settings.py

terminal

```
> python manage.py makemigrations  
> python manage.py migrate
```




Migration example

```
# -*- coding: utf-8 -*-
# Generated by Django 1.10.5 on 2017-02-12 21:33
from __future__ import unicode_literals

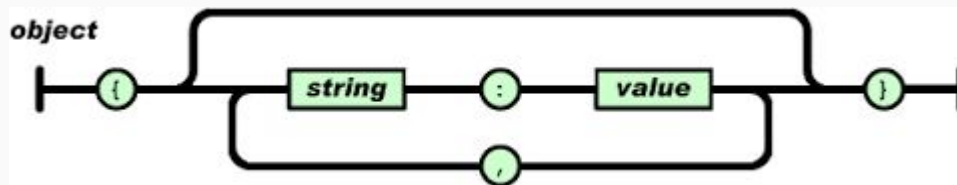
from django.db import migrations, models

class Migration(migrations.Migration):
    initial = True

    dependencies = [ ]

    operations = [
        migrations.CreateModel(
            name='PermitType',
            fields=[
                ('id', models.AutoField(auto_created=True, primary_key=True, serialize=False, verbose_name='ID')),
                ('name', models.CharField(max_length=30)),
            ],
        ),
    ]
```

Fixtures - JSON

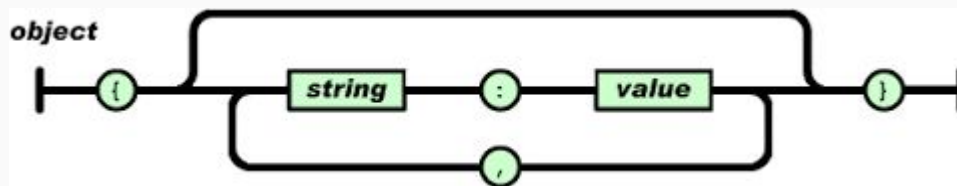


<http://www.json.org/>

<https://docs.djangoproject.com/en/1.10/howto/initial-data/>

<https://code.djangoproject.com/wiki/Fixtures>

Fixtures - JSON



```
[  
  {  
    "pk": 1,  
    "model": "permits.PermitType",  
    "fields": {  
      "name": "Construction"  
    }  
  },  
]
```

<http://www.json.org/>

<https://docs.djangoproject.com/en/1.10/howto/initial-data/>

<https://code.djangoproject.com/wiki/Fixtures>

Fixture into Database

terminal

```
> python manage.py loaddata permits/fixtures/permitType.json  
Installed 3 object(s) from 1 fixture
```





Migration revisited

```
from __future__ import unicode_literals
from django.db import migrations, models

class Migration(migrations.Migration):
    initial = True

    dependencies = [ ]

    operations = [
        migrations.CreateModel(
            name='PermitType',
            fields=[
                ('id', models.AutoField(auto_created=True, primary_key=True, serialize=False, verbose_name='ID')),
                ('name', models.CharField(max_length=30)),
            ],
        ),
    ]
```



Load Fixture in Migration

```
from __future__ import unicode_literals
from django.db import migrations, models

class Migration(migrations.Migration):
    initial = True

    dependencies = [ ]
    def load_fixture_data(apps, schema_editor)
        from django.core.management import call_command
        call_command("loaddata", "permitType")

    operations = [
        migrations.CreateModel(
            name='PermitType',
            fields=[
                ('id', models.AutoField(auto_created=True, primary_key=True, serialize=False, verbose_name='ID')),
                ('name', models.CharField(max_length=30)),
            ],
        ),
        migrations.RunPython(load_fixture_data)
    ]
```

Migrate!

django

terminal

```
> python manage.py migrate
```

```
Operations to perform:
```

```
  Apply all migrations: admin, auth, contenttypes, permits, sessions
```

```
Running migrations:
```

```
  Applying permits.0001_initial...Installed 3 object(s) from 1 fixture(s)
```

```
OK
```



Resources

Github

<https://github.com/denisemauldin/seattleBuildingPermits>

Seattle Open Data

<https://data.seattle.gov/Permitting/Building-Permits-Current/mags-97de>

Django Resources

<http://www.json.org/>

<https://docs.djangoproject.com/en/1.10/howto/initial-data/>

<https://code.djangoproject.com/wiki/Fixtures>

<https://www.webforefront.com/django/setupinitialdatadjangomodels.html>