Setting up the Database

> Supported Database Engines
>
> ## Django supports:
>
> - SQLite
> - MySQL
> - PostgreSQL
> - MSSQL Server - needs third-party
> - MariaDB
> - Oracle
>
> most commonly used:
>
> - MySQL
> - Postgres

> Creating Migrations
>
> We use **Migrations** to create or alter our database tables, based off of models we have in our project. So we're gonna let Django do the heavy lifting because of ORM.

```
python manage.py makemigrations
```

Django looks at all models of every app, and creates a migration file for every app in the **app/migrations** folder. These migration files are essentially blueprints of our Database and the changes we've made. Because of this behavior, we can:

- Revert Migrations
- Track changes

- Build The database schema for any database immediately

Migrations have a descriptive name and a serial number.

```
class Migration(migrations.Migration):

    initial = True

    dependencies = [
    ]
    operations = [
        migrations.CreateModel(
            name='Cart',
            fields=[
                ('id',
models.BigAutoField(auto_created=True, primary_key=True,
serialize=False, verbose_name='ID')),
                ('created_at',
models.DateField(auto_now_add=True)),
            ],
        ),
```

The **Migrate** command, translates these migration files into SQL code and runs them against the database.
Django has a **Migrations** table and that's how it keeps track of the migrations that were executed.

Running Migrations

```
python manage.py migrate
```

See the actual SQL code for a specific migration

```
python manage.py sqlmigrate app_name sequence_number
```

Customizing Database Schema

Sometimes you need more control:

- creating an index
- override the table name
- . . .

Add `Meta` class.

```
class Meta:
        db_table = 'store_customers'
        indexes = [
                models.Index(fields=['last_name',
'first_name'])
        ]
```

Then create a migration and migrate.

Reverting Migrations

```
python manage.oy migrate app_name sequence_number
```

then delete the migration file and revert the code changes. (*Just use* `#git`)

Generating Dummy Data

use Mockaroo to generate good quality data based on your database schema.