# Django ModelForm CRUD Cheat Sheet

## 1. Model

```
from django.db import models

class Student(models.Model):
    name = models.CharField(max_length=100)
    email = models.EmailField()
    age = models.IntegerField()

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

## 2. ModelForm

```
from django import forms
from .models import Student

class StudentForm(forms.ModelForm):
    class Meta:
        model = Student
        fields = '__all__'
```

## 3. Views (CRUD)

```
from django.shortcuts import render, get_object_or_404, redirect
from .models import Student
from .forms import StudentForm

# CREATE
def student_create(request):
    if request.method == "POST":
        form = StudentForm(request.POST)
        if form.is_valid():
            form.save()
            return redirect('student_list')
    else:
        form = StudentForm()
    return render(request, 'student_form.html', {'form': form})

# READ
def student_list(request):
    students = Student.objects.all()
    return render(request, 'student_list.html', {'students': students})

# UPDATE
def student_update(request, pk):
    student = get_object_or_404(Student, pk=pk)
    if request.method == "POST":
        form = StudentForm(request.POST, instance=student)
        if form.is_valid():
            form.save()
            return redirect('student_list')
    else:
        form = StudentForm(instance=student)
    return render(request, 'student_form.html', {'form': form})

# DELETE
def student_delete(request, pk):
    student = get_object_or_404(Student, pk=pk)
    student.delete()
    return redirect('student_list')
```

## 4. URL Patterns

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

urlpatterns = [
    path('', views.student_list, name='student_list'),
    path('add/', views.student_create, name='student_create'),
    path('edit/<int:pk>/', views.student_update, name='student_update'),
    path('delete/<int:pk>/', views.student_delete, name='student_delete'),
]
```

## 5. Templates

### *student_form.html*

```
<h2>Student Form</h2>
<form method="POST">
    {% csrf_token %}
    {{ form.as_p }}
    <button type="submit">Save</button>
</form>
```

### *student_list.html*

```
<h2>Student List</h2>
<a href="{% url 'student_create' %}">Add Student</a>
<ul>
{% for student in students %}
    <li>
        {{ student.name }} - {{ student.email }} - {{ student.age }}
        <a href="{% url 'student_update' student.pk %}">Edit</a>
        <a href="{% url 'student_delete' student.pk %}">Delete</a>
    </li>
{% endfor %}
</ul>
```

## 6. CRUD Diagram

```
+-------------------------+         +--------------------+
|       CREATE            |         |       READ         |
|-------------------------|         |--------------------|
| 1. Show empty form      |         | 1. Query model     |
|    (ModelForm)          |         |    (objects.all)   |
| 2. POST → form.save()   |          | 2. Pass to template|
+-------------------------+         +--------------------+

        ModelForm → ■ Yes                      ModelForm → ■ No

+-------------------------+         +--------------------+
|       UPDATE            |         |      DELETE        |
|-------------------------|         |--------------------|
| 1. Load object          |         | 1. Load object     |
| 2. Pass instance to     |         | 2. Call .delete()  |
|    ModelForm(instance=) |         | 3. Redirect        |
| 3. POST → form.save()   |          |                    |
+-------------------------+         +--------------------+

        ModelForm → ■ Yes                      ModelForm → ■ No
```