Django Admin Module

COMP 8347

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Django Admin Module

Topics

- Admin Site
- ModelAdmin Objects
- InlineModelAdmin Objects

Basic Steps

- Django provides an automatic admin interface.
  - It reads model metadata and provides a powerful interface for adding content to the site.
  - It is enabled by default (Django 1.6 onwards)

- Add 'django.contrib.admin' to INSTALLED_APPS setting.

- Determine which models should be editable in the admin interface.
  - For each of those models, optionally create a ModelAdmin class.
  - Tell AdminsSite about (register) each of your models and ModelAdmin classes.

- Hook the AdminSite instance into your URLconf.
  - path('admin/', admin.site.urls), --- Already there with Django

ModelAdmin Class

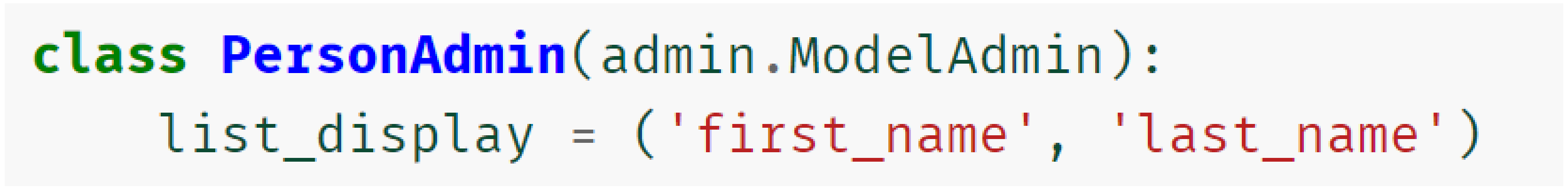
- *ModelAdmin*: representation of a model in the admin interface.
  - Usually, stored in admin.py file in your APP.

```
from django.contrib import admin
from .models import Client
class ClientAdmin(admin.ModelAdmin):
          pass
admin.site.register(Client, ClientAdmin)
```

  - **If default interface is sufficient, register model directly**
    - **admin.site.register(Client)**

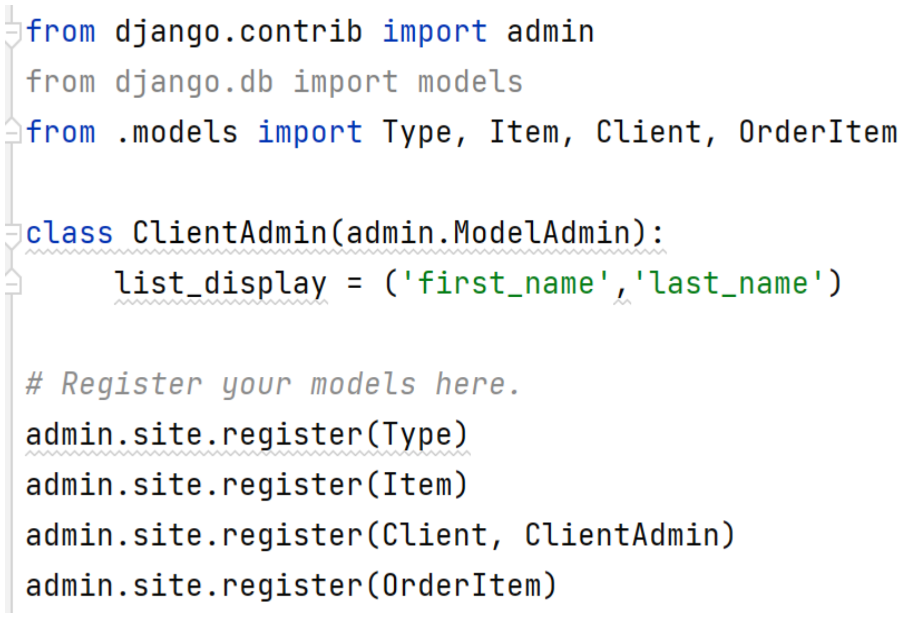
List_display Option

- ***list_display***: controls which fields are displayed on the admin 'change list' page
  - e.g.: **list_display = ('first_name', 'last_name')**
  - Default: admin site displays a only the __str__() representation of each object.
  - List_display can display the fields, callable, attributes, and so on.
  - Ex.



```python
class PersonAdmin(admin.ModelAdmin):
    list_display = ('first_name', 'last_name')
```

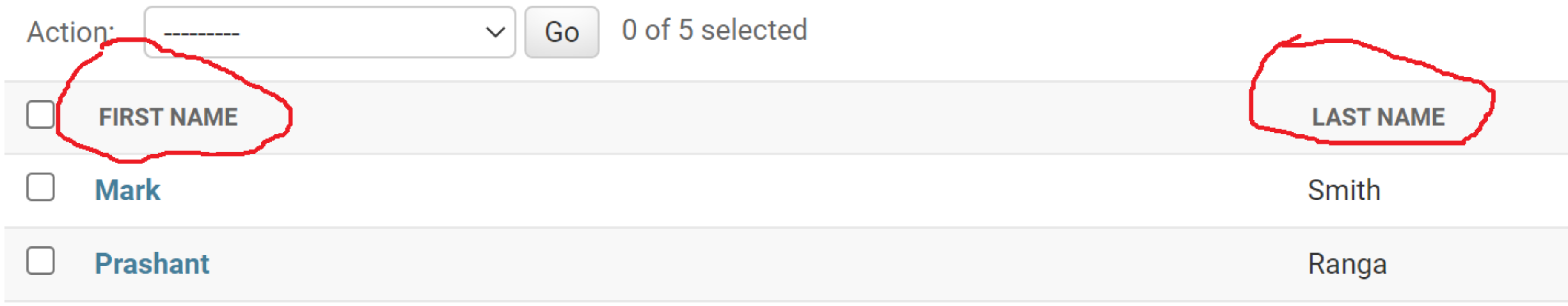
Model Field in list_display - Example



```
from django.contrib import admin
from django.db import models
from .models import Type, Item, Client, OrderItem

class ClientAdmin(admin.ModelAdmin):
    list_display = ('first_name','last_name')

# Register your models here.
admin.site.register(Type)
admin.site.register(Item)
admin.site.register(Client, ClientAdmin)
admin.site.register(OrderItem)
```



Action: ---------- Go 0 of 5 selected

FIRST NAME	LAST NAME
Mark	Smith
Prashant	Ranga

University of Windsor

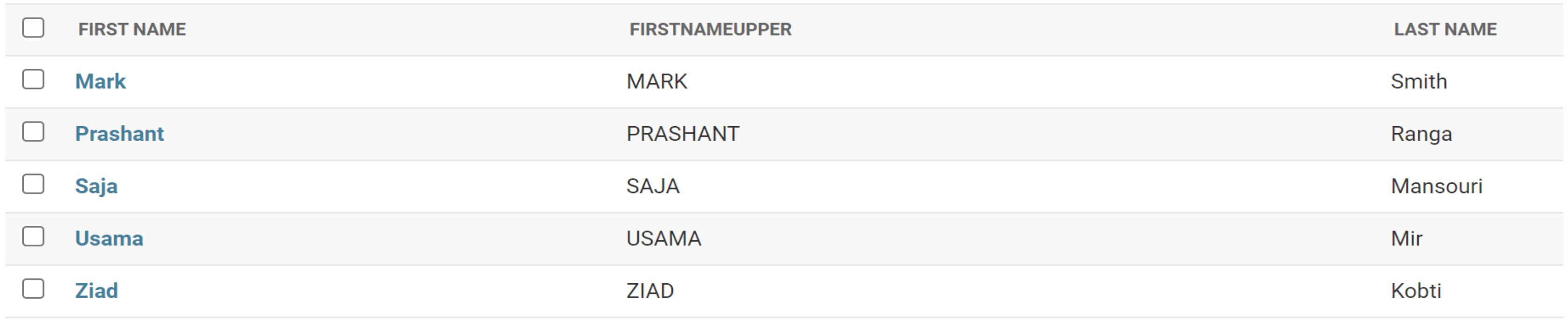
Callable in list_display – Example (Code)

```python
def firstnameupper(obj):
    return obj.first_name.upper()
```

```python
class ClientAdmin(admin.ModelAdmin):
    list_display = ['first_name',firstnameupper,'last_name']
```

```python
admin.site.register(Client, ClientAdmin)
```

Callable in list_display – Example (Result)



	FIRST NAME	FIRSTNAMEUPPER	LAST NAME
☐	Mark	MARK	Smith
☐	Prashant	PRASHANT	Ranga
☐	Saja	SAJA	Mansouri
☐	Usama	USAMA	Mir
☐	Ziad	ZIAD	Kobti

Model Attribute in list_display – Example (Code)

#models.py under the **Client** model

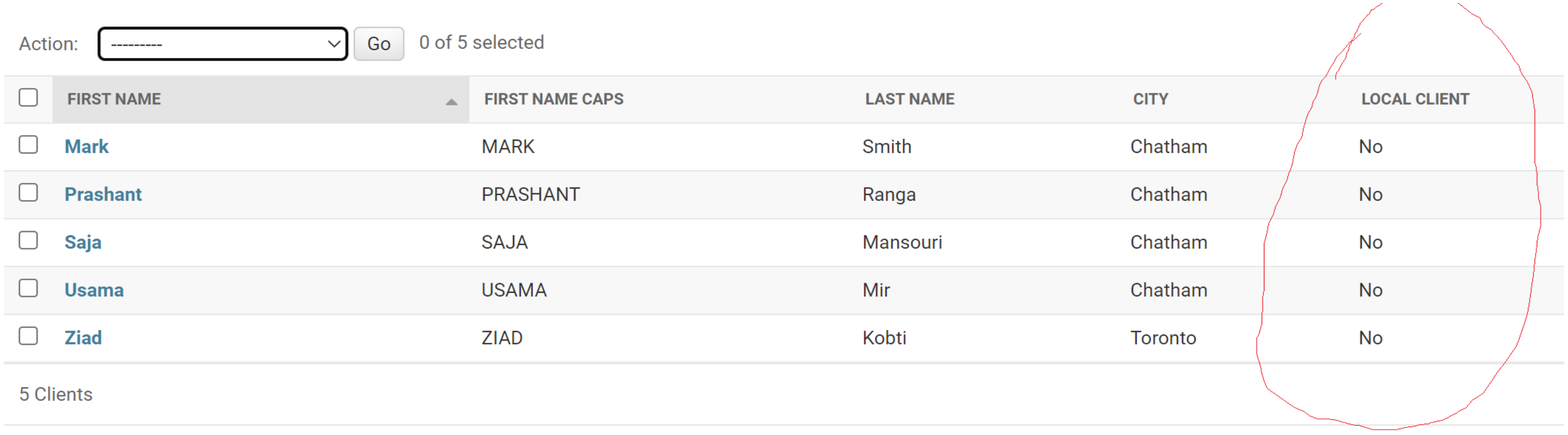
```python
def local_client(self):
    if self.city == 'WD':
        return 'Yes'
    return 'No'
```

#admin.py

```python
class ClientAdmin(admin.ModelAdmin):
    list_display = ['first_name',firstnameupper,'last_name','city','local_client']
```

```python
admin.site.register(Client, ClientAdmin)
```

Model Attribute in list_display – Example (Result)



	FIRST NAME	FIRST NAME CAPS	LAST NAME	CITY	LOCAL CLIENT
☐	Mark	MARK	Smith	Chatham	No
☐	Prashant	PRASHANT	Ranga	Chatham	No
☐	Saja	SAJA	Mansouri	Chatham	No
☐	Usama	USAMA	Mir	Chatham	No
☐	Ziad	ZIAD	Kobti	Toronto	No

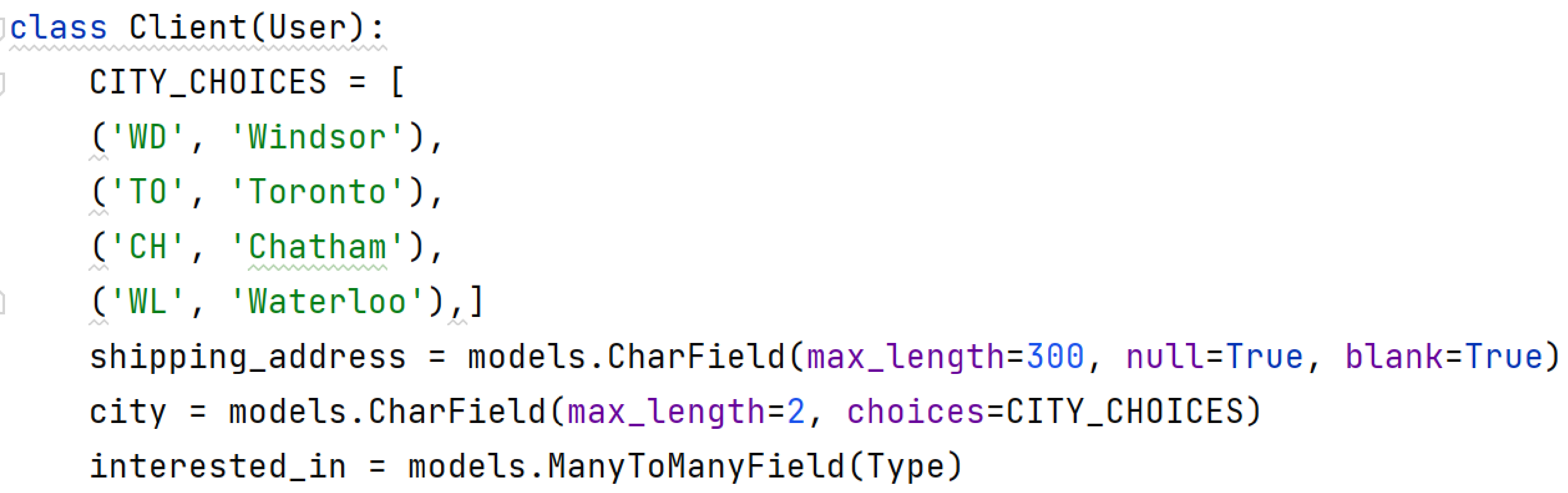
5 Clients

ModelAdmin Actions

- ***Actions***: simple functions that get called with a list of objects selected on the change list page.
  - Very useful for making same change to many objects at once.
  - The function takes 3 arguments:
    - The current ModelAdmin
    - An HttpRequest representing the current request,
    - A QuerySet containing the set of objects selected by the user.
- Two main steps:
  - Writing actions
  - Adding actions to ModelAdmin
- Example: You would like to change the city of a client in 'grocsite'

ModelAdmin Actions – Sample Model

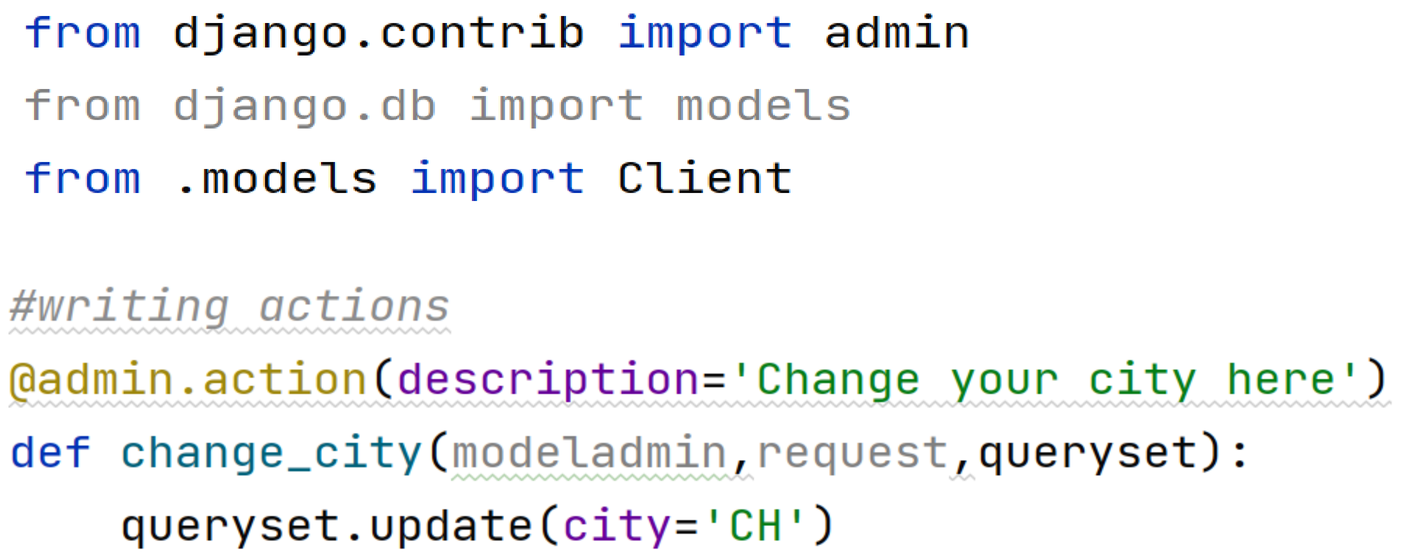
- The Client Model from grocsite – ‘models.py’



```python
class Client(User):
    CITY_CHOICES = [
    ('WD', 'Windsor'),
    ('TO', 'Toronto'),
    ('CH', 'Chatham'),
    ('WL', 'Waterloo'),]
    shipping_address = models.CharField(max_length=300, null=True, blank=True)
    city = models.CharField(max_length=2, choices=CITY_CHOICES)
    interested_in = models.ManyToManyField(Type)
```

ModelAdmin Actions – Writing Actions

#admin.py



```
 from django.contrib import admin
 from django.db import models
 from .models import Client

#writing actions
@admin.action(description='Change your city here')
def change_city(modeladmin,request,queryset):
    queryset.update(city='CH')
```

- Also possible to iterate over queryset

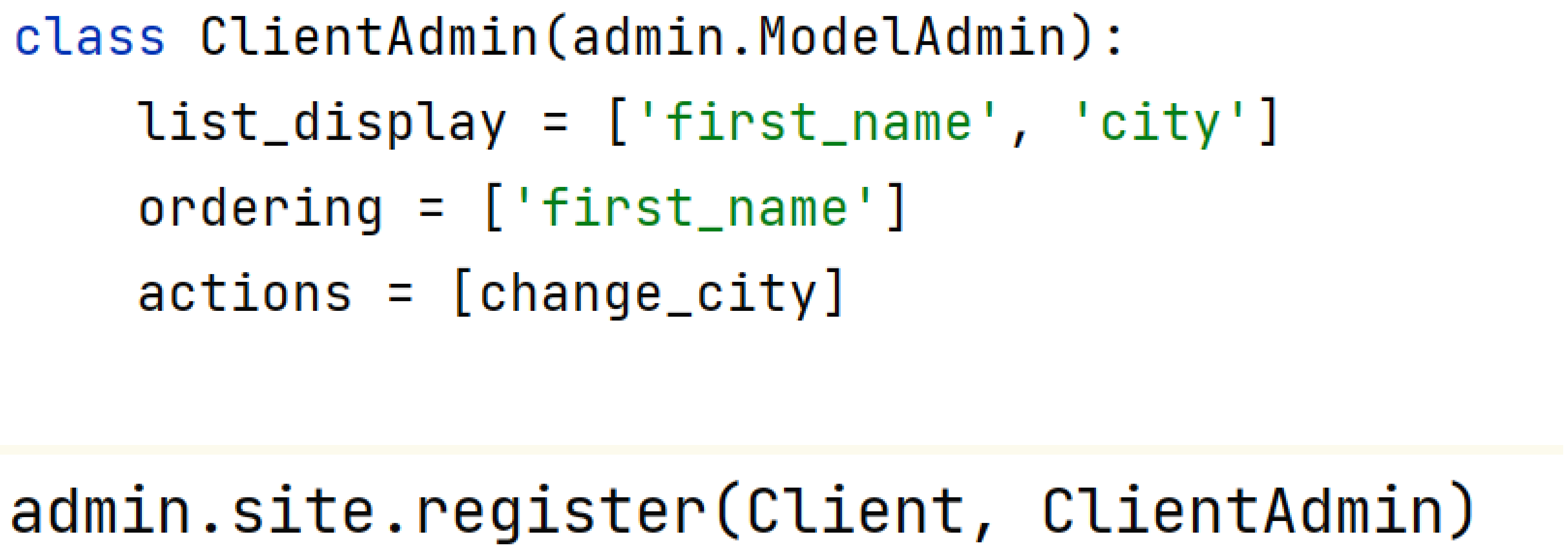
Example considering the Item Model:

```
for item in queryset:
    item.price = item.price + 1000
```

ModelAdmin Actions – Adding Actions

- To inform our ModelAdmin of the action.

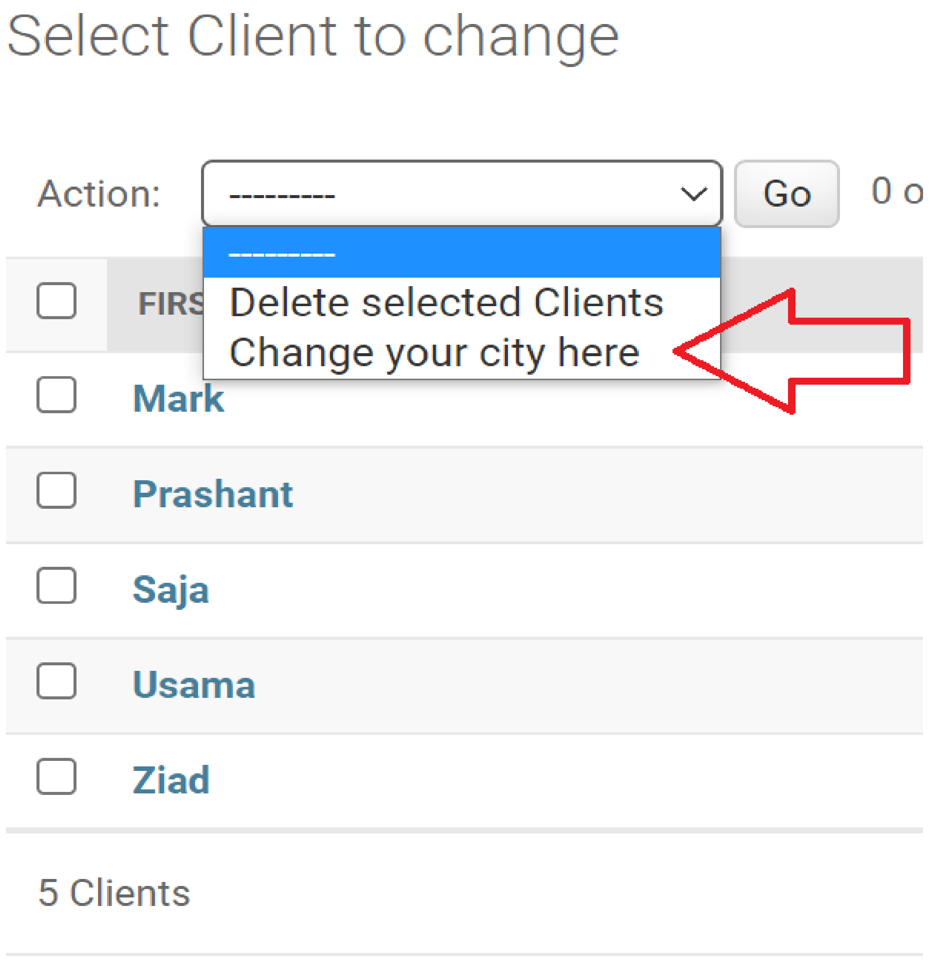
#admin.py



```
class ClientAdmin(admin.ModelAdmin):
    list_display = ['first_name', 'city']
    ordering = ['first_name']
    actions = [change_city]

admin.site.register(Client, ClientAdmin)
```

ModelAdmin Actions – Result



Select Client to change

Action: ---------- Go 0 o

Delete selected Clients
Change your city here

FIRS

Mark

Prashant

Saja

Usama

Ziad

5 Clients

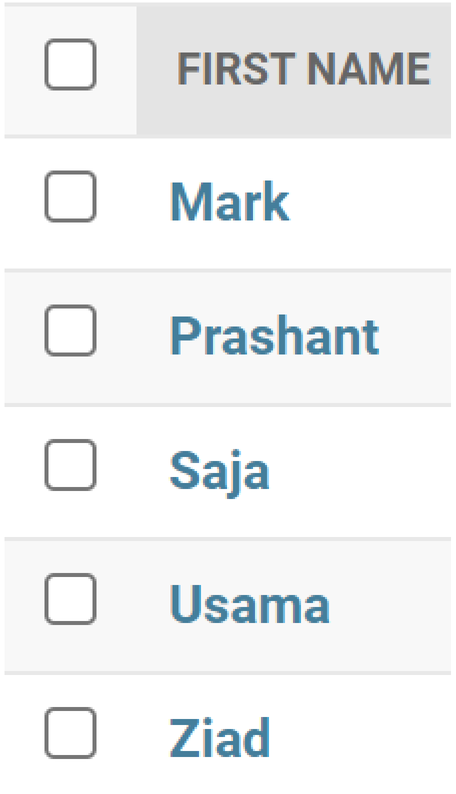
Fields Options

- Used to make simple changes in the layout of fields in the forms.
  - showing a subset of the available fields, modifying their order or grouping them in rows

  - Ex. Ordering the fields according to first name

#admin.py

```
class ClientAdmin(admin.ModelAdmin):
    list_display = ['first_name','last_name','city']
    ordering = ['first_name']
```

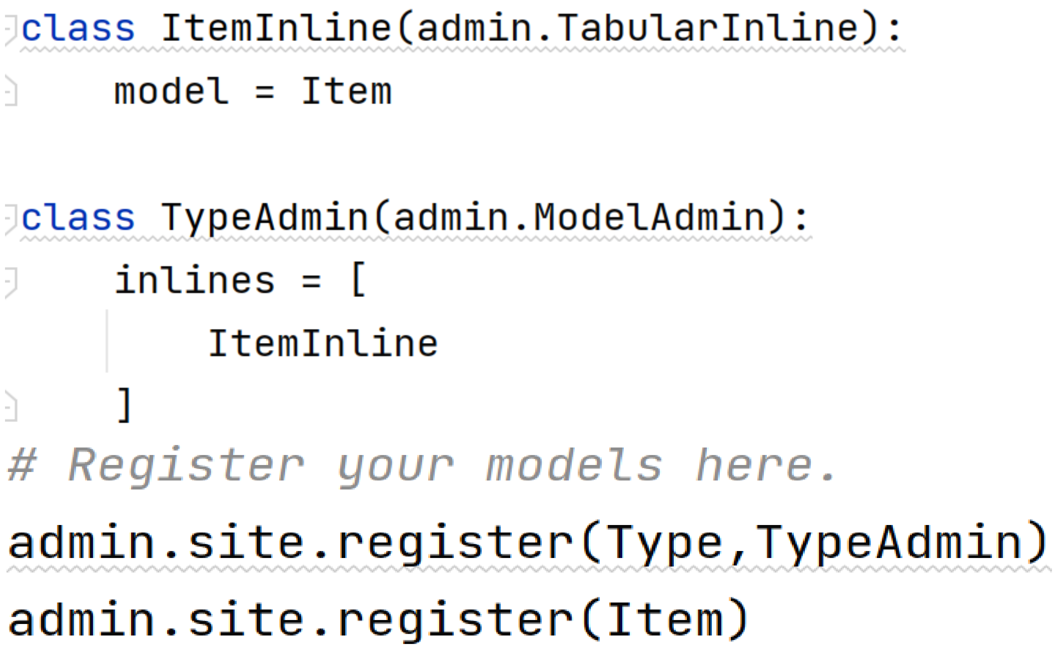


	FIRST NAME
☐	Mark
☐	Prashant
☐	Saja
☐	Usama
☐	Ziad

Inlines

- ***Inlines***: Provides admin interface the ability to edit models on the same page as a parent model.
  - Two Subclasses: TabularInline and StackedInline
    - The difference between these two is merely the template used to render them
  - To edit the cars made by a company on the company page: Add inlines to a model

#admin.py



```
class ItemInline(admin.TabularInline):
    model = Item

class TypeAdmin(admin.ModelAdmin):
    inlines = [
        ItemInline
    ]
# Register your models here.
admin.site.register(Type,TypeAdmin)
admin.site.register(Item)
```

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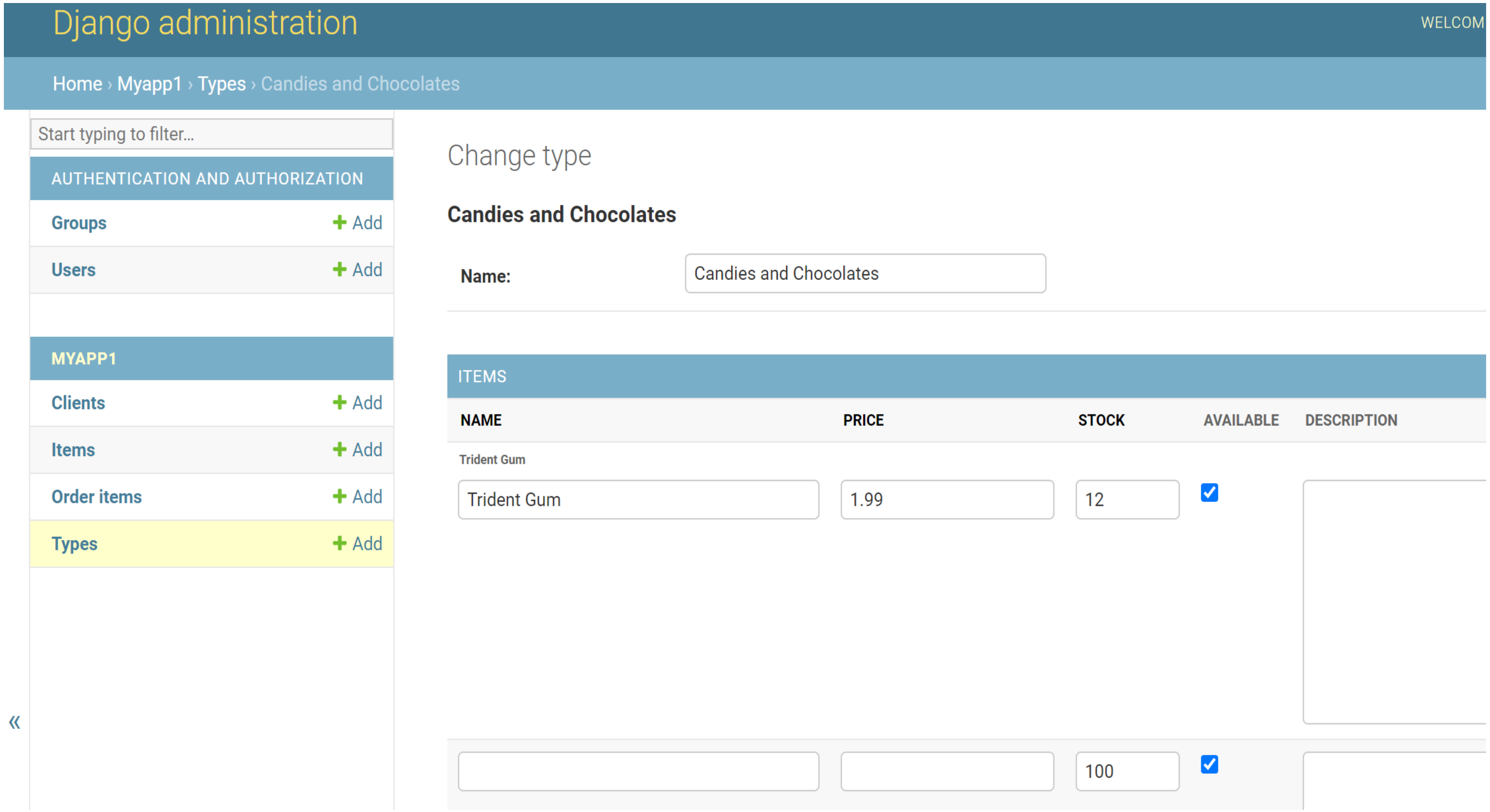
Inlines – Tabular

Result on Admin



Change type

Candies and Chocolates

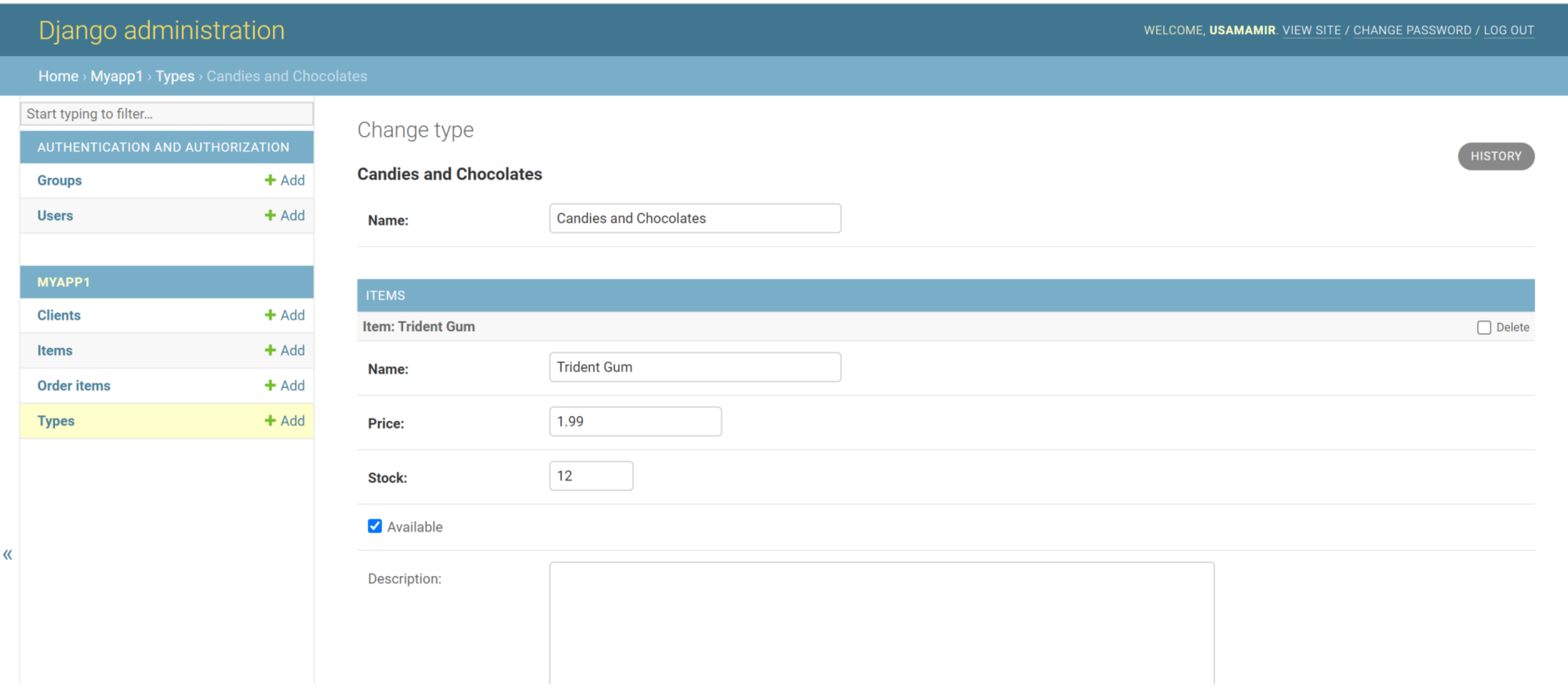
Name: Candies and Chocolates

ITEMS

NAME	PRICE	STOCK	AVAILABLE	DESCRIPTION
Trident Gum	1.99	12	✓	
		100	✓	

Inlines – Stacked

Result on Admin



Django administration

WELCOME, **USAMAMIR**. VIEW SITE / CHANGE PASSWORD / LOG OUT

Home › Myapp1 › Types › Candies and Chocolates

Start typing to filter...

AUTHENTICATION AND AUTHORIZATION

- Groups + Add
- Users + Add

MYAPP1

- Clients + Add
- Items + Add
- Order items + Add
- Types + Add

Change type

HISTORY

Candies and Chocolates

Name: Candies and Chocolates

ITEMS

Item: Trident Gum ☐ Delete

Name: Trident Gum

Price: 1.99

Stock: 12

☑ Available

Description:

References

- https://docs.djangoproject.com/en/4.1/ref/contrib/admin/#django.contrib.admin.ModelAdmin.list_display
- https://docs.djangoproject.com/en/4.1/ref/contrib/admin/
- https://docs.djangoproject.com/en/4.1/ref/contrib/admin/actions/
- https://simpleisbetterthancomplex.com/tutorial/2017/03/14/how-to-create-django-admin-list-actions.html
- https://books.agiliq.com/projects/django-admin-cookbook/en/latest/remove_delete_selected.html
- Slides from Dr. Arunita and Dr. Saja
- Python Web Development with Django, by J. Forcier et al.