

23/09 - 8º Aula

terça-feira, 23 de setembro de 2025 19:09

MODELO PARA PROJETO INTEGRADOR - Mange Tech

[Plano de Ensino_PROJ14_REV1-CST.pdf](#)

```
PS C:\Users\dsadm\Downloads\AplicacaoWEB_4termo\MANGETECH> cd .\back\
PS C:\Users\dsadm\Downloads\AplicacaoWEB_4termo\MANGETECH\back> py -m venv venv
PS C:\Users\dsadm\Downloads\AplicacaoWEB_4termo\MANGETECH\back> .\venv\Scripts\activate
(venv) PS C:\Users\dsadm\Downloads\AplicacaoWEB_4termo\MANGETECH\back> pip install django djangorestframework djoser django-cors-headers
Collecting django
  Using cached django-5.2.6-py3-none-any.whl.metadata (4.1 kB)
Collecting djangorestframework
  Using cached djangorestframework-3.16.1-py3-none-any.whl.metadata (11 kB)
Collecting djoser
  Using cached djoser-2.3.3-py3-none-any.whl.metadata (6.8 kB)
Collecting django-cors-headers
  Using cached django_cors_headers-4.6.0-py3-none-any.whl.metadata (16 kB)
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PS C:\Users\dsadm\Downloads\AplicacaoWEB_4termo\MANGETECH> cd .\back\

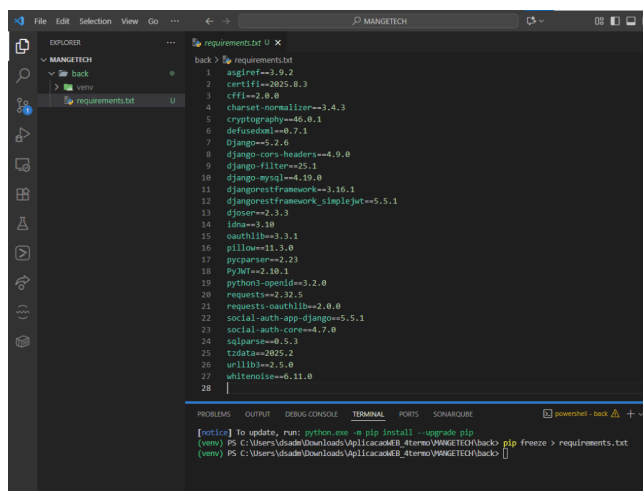
PS C:\Users\dsadm\Downloads\AplicacaoWEB_4termo\MANGETECH\back> py -m venv venv

PS C:\Users\dsadm\Downloads\AplicacaoWEB_4termo\MANGETECH\back> .\venv\Scripts\activate

(venv) PS C:\Users\dsadm\Downloads\AplicacaoWEB_4termo\MANGETECH\back> pip install django djangorestframework djoser django-cors-headers

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(venv) PS C:\Users\dsadm\Downloads\AplicacaoWEB_4termo\MANGETECH\back> pip install pillow whitenoise django-filter django-mysql
Collecting pillow
  Downloading pillow-11.3.0-cp313-cp313-win_amd64.whl.metadata (9.2 kB)
Collecting whitenoise
  Downloading whitenoise-6.11.0-py3-none-any.whl.metadata (3.7 kB)
Collecting django-filter
  Downloading django-filter-25.1-py3-none-any.whl.metadata (5.1 kB)
Collecting django-mysql
Requirement already satisfied: Django<4.2 in c:\users\dsadm\downloads\aplicacaoWEB_4termo\mangetech\back\venv\lib\site-packages (from django-filter) (4.2.6)
Requirement already satisfied: asgiref>=3.8.1 in c:\users\dsadm\downloads\aplicacaoWEB_4termo\mangetech\back\venv\lib\site-packages (from Django) (3.9.2)
Requirement already satisfied: sqlparse>=0.3.1 in c:\users\dsadm\downloads\aplicacaoWEB_4termo\mangetech\back\venv\lib\site-packages (from django-mysql) (0.5.3)
Requirement already satisfied: tzdata in c:\users\dsadm\downloads\aplicacaoWEB_4termo\mangetech\back\venv\lib\site-packages (from Django) (2025.2)
```

(venv) PS C:\Users\dsadm\Downloads\AplicacaoWEB_4termo\MANGETECH\back> pip install pillow whitenoise django-filter django-mysql



(venv) PS C:\Users\dsadm\Downloads\AplicacaoWEB_4termo\MANGETECH\back> pip freeze > requirements.txt

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(venv) PS C:\Users\dsadm\Downloads\AplicacaoWEB_4termo\MANGETECH\back> pip freeze > requirements.txt
(venv) PS C:\Users\dsadm\Downloads\AplicacaoWEB_4termo\MANGETECH\back> django-admin startproject mangetech .
(venv) PS C:\Users\dsadm\Downloads\AplicacaoWEB_4termo\MANGETECH\back> django-admin startapp app
```

(venv) PS C:\Users\dsadm\Downloads\AplicacaoWEB_4termo\MANGETECH\back> django-admin startproject mangetech .

(venv) PS C:\Users\dsadm\Downloads\AplicacaoWEB_4termo\MANGETECH\back> django-admin startapp app

```
(venv) PS C:\Users\dsadm\Downloads\AplicacaoWEB_4termo\MANGETECH\back> py .\manage.py runserver 8001
Watching for file changes with StatReloader
Performing system checks...

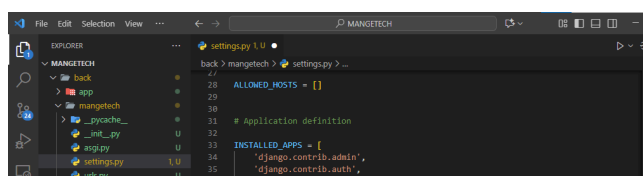
System check identified no issues (0 silenced).

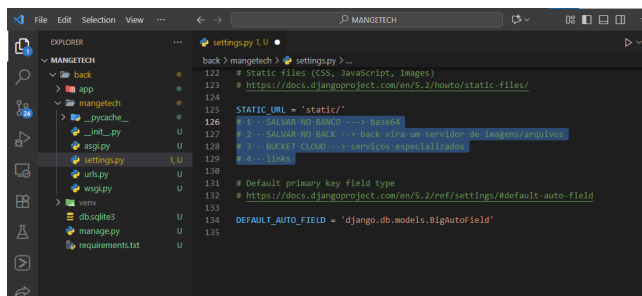
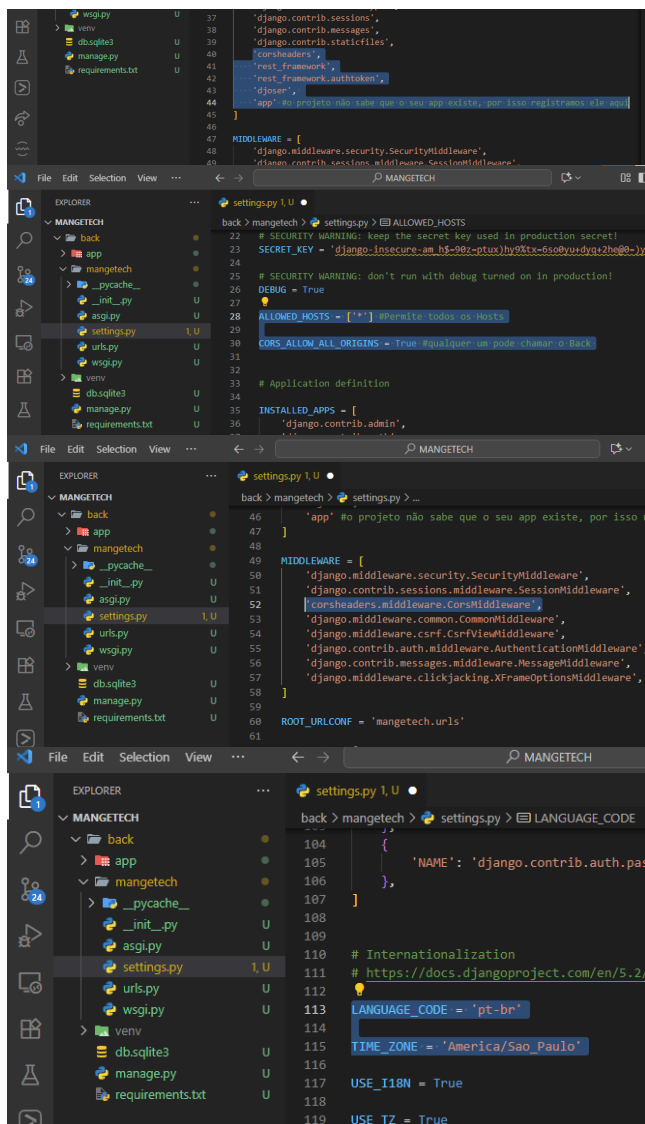
You have 18 unapplied migration(s). Your project may not work properly until you apply the migrations for app(s): admin, auth, contenttypes, sessions.
Run 'python manage.py migrate' to apply them.
September 23, 2025 - 19:23:20
Django version 5.2.6, using settings 'mangetech.settings'
Starting development server at http://127.0.0.1:8001/
Quit the server with CTRL-BREAK.

WARNING: This is a development server. Do not use it in a production setting. Use a production WSGI or ASGI server instead.
For more information on production servers see: https://docs.djangoproject.com/en/5.2/howto/deployment/
```

Verificar se está tudo OK:

(venv) PS C:\Users\dsadm\Downloads\AplicacaoWEB_4termo\MANGETECH\back> py .\manage.py runserver

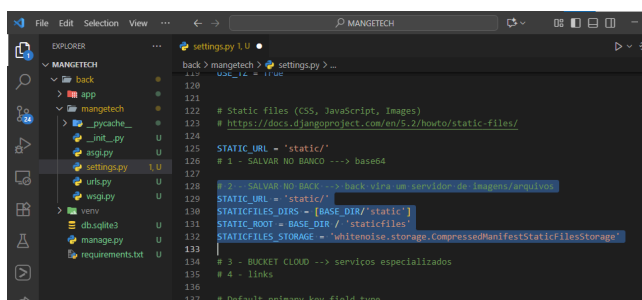




Hoje em dia existem 4 maneiras de salvar imagens no projeto

1. Salvar no banco de dados (converte a imagem em um texto bem grande, famoso: base64)
Desvantagem: influencia na performance do projeto caso salve arquivos muito grandes.
2. Salvar no Backend (praticamente cria uma pasta que armazena esses arquivos) Desvantagem: a complexibilidade depende do framework utilizado. No Django é simples.
3. Usar um serviço de armazenamento (Bucket) Ex: na Azure tem o "Azure Blob Storage", na AWS tem o "Amazon S3". Vantagem: é um serviço especializado para isso, então é mais seguro, tem mais opções. Desvantagem: o preço, aumenta o custo do projeto.
4. E podemos salvar com Links, usando coisas que estão na internet, igual fizemos nos últimos projetos.

Melhor custo Benefício - usaremos essa.



```

138 # https://docs.djangoproject.com/en/3.2/ref/settings/#default-auto-field
139
140 DEFAULT_AUTO_FIELD = 'django.db.models.BigAutoField'
141

```

2 - SALVAR NO BACK --> back vira um servidor de imagens/arquivos

```

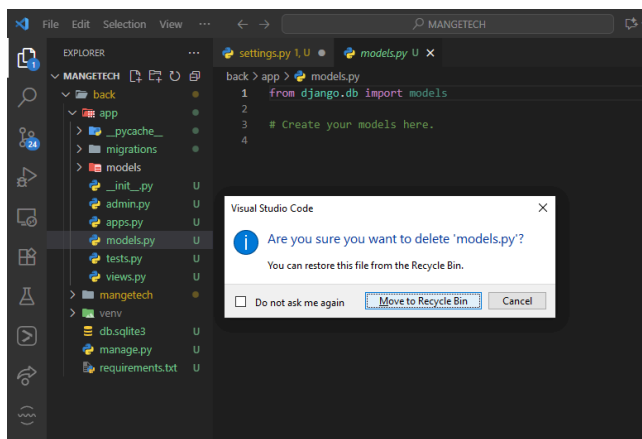
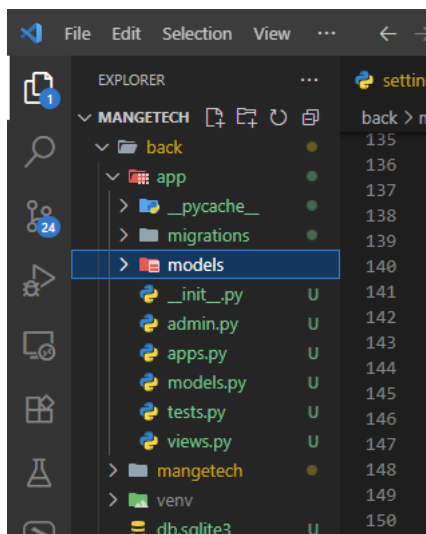
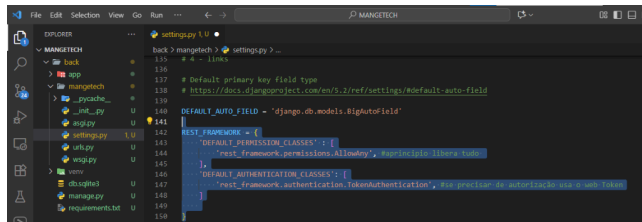
STATIC_URL = 'static/'
STATICFILES_DIRS = [BASE_DIR/'static']
STATIC_ROOT = BASE_DIR / 'staticfiles'
STATICFILES_STORAGE = 'whitenoise.storage.CompressedManifestStaticFilesStorage'

```

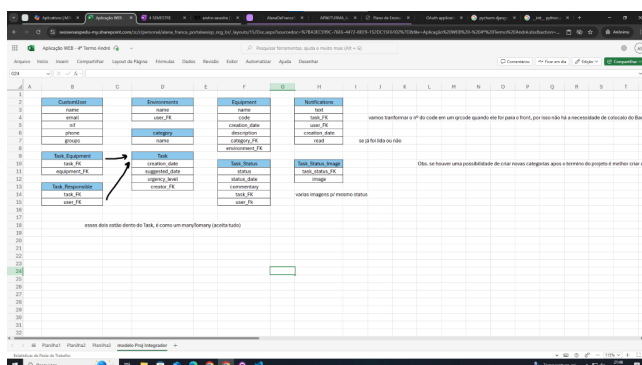
Como alunos podemos pegar o modo pago do "pycharm" versão estudante.

[Ele oferece um conjunto de ferramentas que facilitam a escrita, depuração e execução de código, incluindo autocompletar, análise de código, integração com sistemas de controle de versão e suporte a desenvolvimento web com frameworks como Django.]

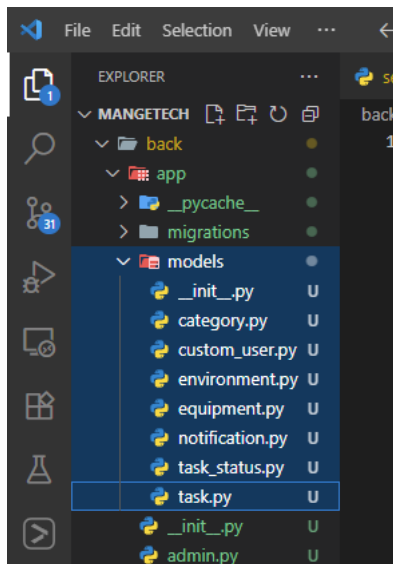
Dica: webstorm é muito bom para substituir o Vscode



Deleta o models.py



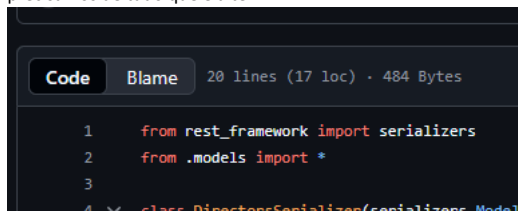
Aplicação WEB - 4º Termo André.xlsx



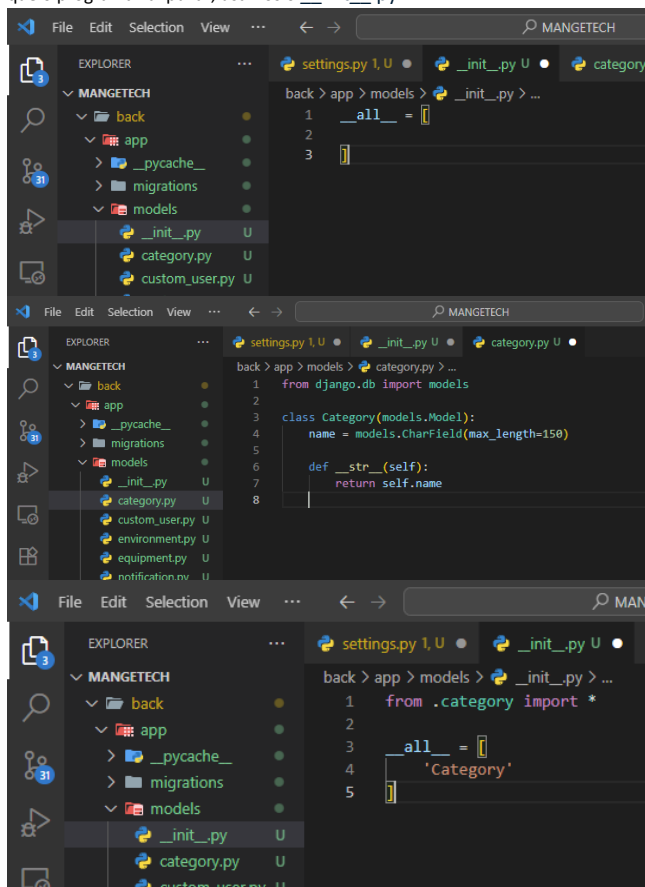
Criar todos esses manualmente, são nossas tabelas

Dica:

Ex: nos ultimos projetos utilizamos o * para puxar todos os nossos modelos do arquivo models. Lembrando que isso não é viavel para as bibliotecas, pois são muito grandes e realmente não precisamos de tudo que ela tem.



Porém isso não se aplica mais ao nosso projeto já que não temos apenas um arquivo models, mas sim uma pasta com varios deles. Assim temos que deixar claro para o django o que vai ser esse "tudo" (*) que o programa vai puxar, usamos o __init__.py:



Faremos isso para os outros models:



```

back > app > models > environment.py > ...
1 from django.db import models
2
3 class Environment(models.Model):
4     name = models.CharField(max_length=150)
5     user_FK = models.ForeignKey('CustomUser',
6                                 related_name='Environment_user_FK',
7                                 on_delete=models.CASCADE)
8
9     def __str__(self):
10         return self.name

```

```

back > app > models > equipment.py > ...
1 from django.db import models
2
3 class Equipment(models.Model):
4     name = models.CharField(max_length=150)
5     code = models.CharField(max_length=50)
6     description = models.CharField(max_length=500)
7     creation_date = models.DateTimeField(auto_now_add=True)
8     category_FK = models.ForeignKey('Category',
9                                     related_name='Equipment_category_FK',
10                                    on_delete=models.SET_NULL,
11                                    null=True)
12     environment_FK = models.ForeignKey('Environment',
13                                       related_name='Equipment_environment_FK',
14                                       on_delete=models.SET_NULL,
15                                       null=True)
16
17     def __str__(self):
18         return self.name

```

```

back > app > models > task.py > Task > __str__
1 from django.db import models
2
3 class URGENCY_LEVELS(models.TextChoices):
4     LOW = 'LOW', 'low'
5     MEDIUM = 'MEDIUM', 'medium'
6     HIGH = 'HIGH', 'high'
7     EXTRA_HIGH = 'EXTRA_HIGH', 'extra_high'
8
9 class Task(models.Model):
10     name = models.CharField(max_length=150)
11     description = models.CharField(max_length=1000)
12     suggested_date = models.DateTimeField()
13     urgency_level = models.CharField(max_length=50,
14                                     choices=URGENCY_LEVELS.choices,
15                                     default=URGENCY_LEVELS.LOW)
16     creation_date = models.DateTimeField(auto_now_add=True)
17     creator_FK = models.ForeignKey('CustomUser',
18                                   related_name='Task_creator_FK',
19                                   on_delete=models.SET_NULL,
20                                   null=True)
21     equipments_FK = models.ManyToManyField('Equipment')
22     responsables_FK = models.ManyToManyField('CustomUser')
23
24     def __str__(self):
25         return self.name

```

```

back > app > models > task_status.py > TaskStatusImage > __str__
1 from django.db import models
2
3 class STATUS(models.TextChoices):
4     OPEN = 'OPEN'
5     WAITING_RESPONSIBLE = 'WAITING_RESPONSIBLE'
6     ONGOING = 'ONGOING'
7     DONE = 'DONE'
8     FINISHED = 'FINISHED'
9     CANCELLED = 'CANCELLED'
10
11 class TaskStatus(models.Model):
12     status = models.CharField(max_length=50,
13                              choices=STATUS.choices,
14                              default=STATUS.OPEN)
15     status_date = models.DateTimeField(auto_now_add=True)
16     comment = models.CharField(max_length=500, null=True, blank=True)
17     task_FK = models.ForeignKey('Task',
18                                related_name='TaskStatus_task_FK',
19                                on_delete=models.CASCADE)
20     user_FK = models.ForeignKey('CustomUser',
21                                related_name='TaskStatus_user_FK',
22                                on_delete=models.SET_NULL,
23                                null=True)
24
25     def __str__(self):
26         return self.status
27
28 class TaskStatusImage(models.Model):
29     image = models.FileField(upload_to='task_images') #upload_to nome da pasta em que os arquivos serao salvos
30     task_status_FK = models.ForeignKey('TaskStatus',
31                                       related_name='TaskStatusImage_task_FK',
32                                       on_delete=models.CASCADE)
33
34     def __str__(self):
35         return self.task_status_FK.status

```

```

back > app > models > custom_user.py > ...
1 from django.db import models
2 from django.contrib.auth.models import BaseUserManager, AbstractBaseUser, PermissionsMixin
3
4 class CustomUserManager(BaseUserManager):
5     def create_user(self, email, password, nif, **extra_fields):
6         if None in (email, password, nif):
7             raise ValueError('email, Password or Nif are invalid')
8
9         extra_fields.setdefault('is_active', True)
10         user = self.model(email=self.normalize_email(email),
11                           nif=nif,
12                           **extra_fields)
13         user.set_password(password)
14         user.save(using=self._db)
15         return user
16
17     def create_superuser(self, email, password, nif, **extra_fields):
18         extra_fields.setdefault('is_staff', True)
19         extra_fields.setdefault('is_superuser', True)
20         return self.create_user(email, password, nif, **extra_fields)
21
22 class CustomUser(AbstractBaseUser, PermissionsMixin):
23     name = models.CharField(max_length=150)
24     email = models.EmailField(max_length=255, unique=True)
25     nif = models.CharField(max_length=15, unique=True)
26     phone = models.CharField(max_length=15, null=True, blank=True)
27     is_staff = models.BooleanField(default=False)
28     is_active = models.BooleanField(default=True)
29     creation_date = models.DateTimeField(auto_now_add=True)
30
31     USERNAME_FIELD = 'email'
32     REQUIRED_FIELDS = ['name', 'nif']
33
34     objects = CustomUserManager()
35
36     def __str__(self):
37         return self.email

```

```

back > app > models > notification.py > ...

```

The screenshot shows the VS Code editor with the Django project 'MANGETECH'. The Explorer pane on the left shows the project structure. The main editor displays the `models.py` file, which defines a `Notification` model. The `Notification` model has a `text` field (CharField, max_length=500), a `task_FK` (ForeignKey to Task), a `user_FK` (ForeignKey to CustomUser), and a `creation_date` (DateTimeField, auto_now_add=True). The `__str__` method returns `self.task_FK.name`. Below this, the `_init_.py` file is shown, which imports various models and registers them in the Django admin.

```

1 from django.db import models
2
3 class Notification(models.Model):
4     text = models.CharField(max_length=500)
5     task_FK = models.ForeignKey('Task',
6                                 related_name='Notification_task_FK',
7                                 on_delete=models.CASCADE)
8     user_FK = models.ForeignKey('CustomUser',
9                                 related_name='Notification_user_FK',
10                                on_delete=models.SET_NULL,
11                                null=True)
12     creation_date = models.DateTimeField(auto_now_add=True)
13     notification_read = models.BooleanField(default=False)
14
15     def __str__(self):
16         return self.task_FK.name
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112 # internationalization
113 # https://docs.djangoproject.com/en/5.2/topics/i
114
115 LANGUAGE_CODE = 'pt-br'
116
117 TIME_ZONE = 'America/Sao_Paulo'
118
119 USE_TZ = True

```

```

(venv) PS C:\Users\dsadm\Downloads\AplicacaoWEB_4termo\MANGETECH\back> py .\manage.py makemigrations
System check identified some issues:

WARNINGS:
?: (staticfiles.W004) The directory 'C:\Users\dsadm\Downloads\AplicacaoWEB_4termo\MANGETECH\back\static'
  in the STATICFILES_DIRS setting does not exist.

Migrations for 'app':
  app\migrations\0001_initial.py
    + Create model Category
    + Create model CustomUser
    + Create model Environment
    + Create model Equipment
    + Create model Task
    + Create model Notification
    + Create model TaskStatus
    + Create model TaskStatusImage

```

(venv) PS C:\Users\dsadm\Downloads\AplicacaoWEB_4termo\MANGETECH\back> py .\manage.py makemigrations

```

(venv) PS C:\Users\dsadm\Downloads\AplicacaoWEB_4termo\MANGETECH\back> py .\manage.py migrate
System check identified some issues:

WARNINGS:
?: (staticfiles.W004) The directory 'C:\Users\dsadm\Downloads\AplicacaoWEB_4termo\MANGETECH\back\static'
  in the STATICFILES_DIRS setting does not exist.

Operations to perform:
  Apply all migrations: admin, app, auth, authn, contenttypes, sessions
  Applying contenttypes.0001_initial... OK
  Applying contenttypes.0002_remove_content_type_name... OK
  Applying auth.0001_initial... OK
  Applying auth.0002_alter_permission_name_max_length... OK
  Applying auth.0003_alter_user_email_max_length... OK
  Applying auth.0004_alter_user_username_opts... OK
  Applying auth.0005_alter_user_last_login_null... OK
  Applying auth.0006_require_contenttypes_0002... OK
  Applying auth.0007_alter_validators_add_error_messages... OK
  Applying auth.0008_alter_user_username_max_length... OK
  Applying auth.0009_alter_user_last_name_max_length... OK
  Applying auth.0010_alter_group_name_max_length... OK
  Applying auth.0011_update_proxy_permissions... OK
  Applying auth.0012_alter_user_first_name_max_length... OK

```

(venv) PS C:\Users\dsadm\Downloads\AplicacaoWEB_4termo\MANGETECH\back> py .\manage.py migrate

```

(venv) PS C:\Users\dsadm\Downloads\AplicacaoWEB_4termo\MANGETECH\back> py .\manage.py createsuperuser
System check identified some issues:

WARNINGS:
?: (staticfiles.W004) The directory 'C:\Users\dsadm\Downloads\AplicacaoWEB_4termo\MANGETECH\back\static'
  in the STATICFILES_DIRS setting does not exist.

Email: admin@admin.com
Name: admin
Nif: 111111
Password:
Password (again):
A senha é muito parecida com email
Esta senha é muito curta. Ela precisa conter pelo menos 8 caracteres.
Esta senha é muito comum.
Bypass password validation and create user anyway? [Y/N]: y
Superuser created successfully.

(venv) PS C:\Users\dsadm\Downloads\AplicacaoWEB_4termo\MANGETECH\back> py .\manage.py runserver 8001
Watching for file changes with StatReloader
Performing system checks...

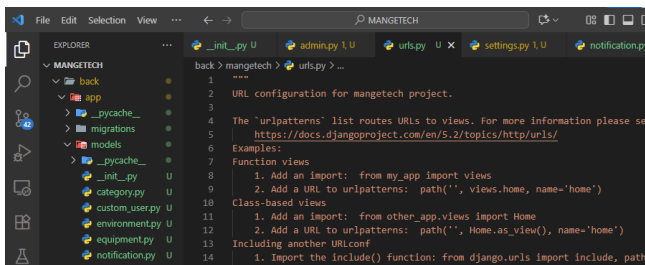
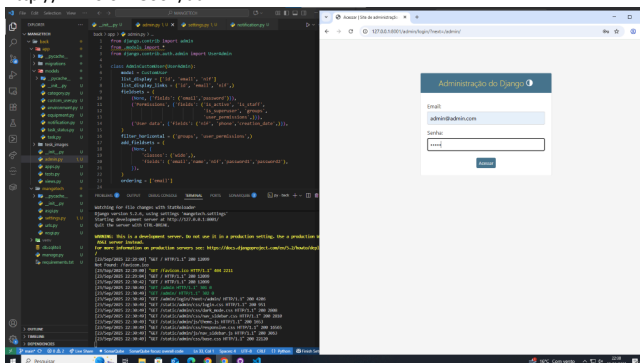
System check identified some issues:

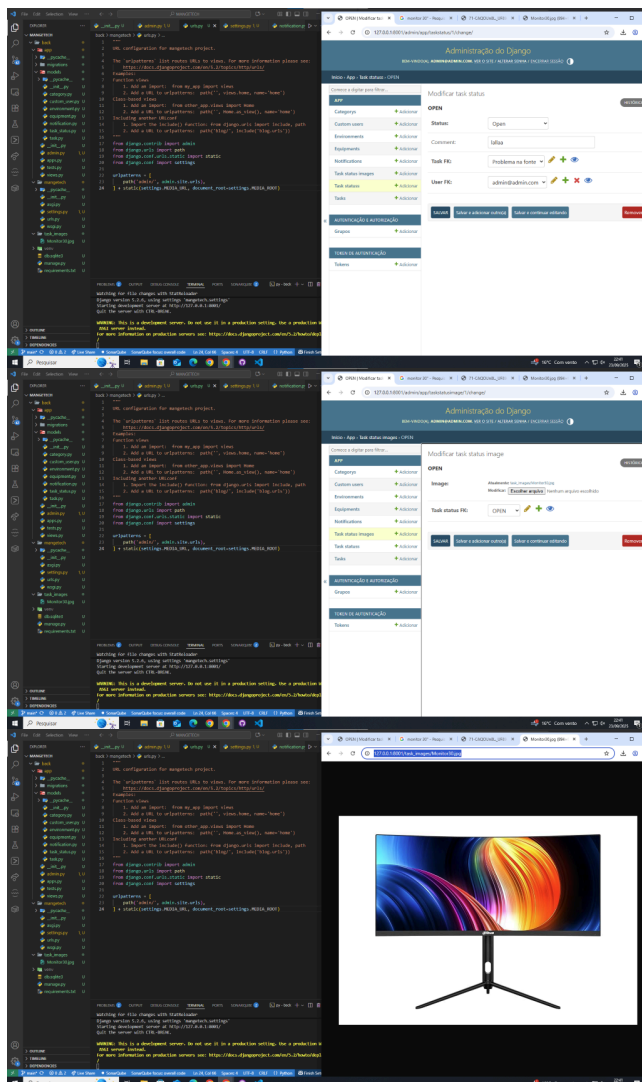
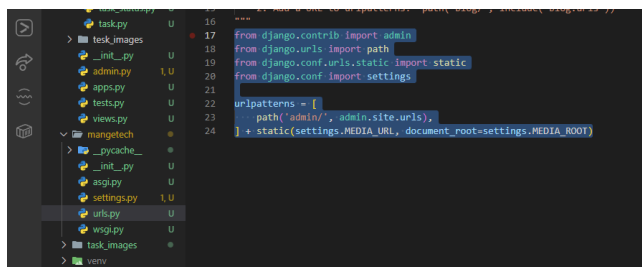
```

(venv) PS C:\Users\dsadm\Downloads\AplicacaoWEB_4termo\MANGETECH\back> py .\manage.py createsuperuser

(venv) PS C:\Users\dsadm\Downloads\AplicacaoWEB_4termo\MANGETECH\back> py .\manage.py runserver 8001

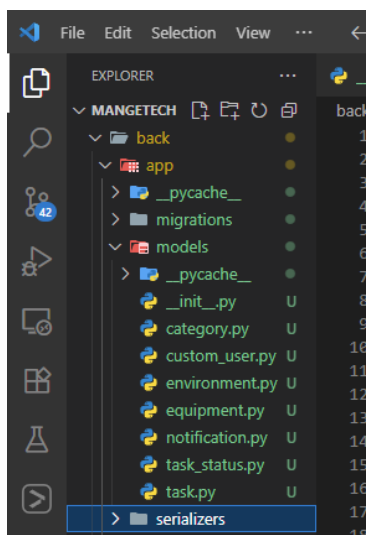
http://127.0.0.1:8001/admin

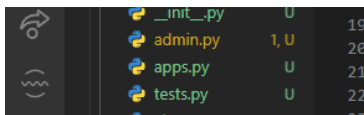




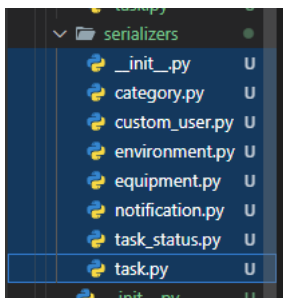
CRUD

(Serializer, urls e views)

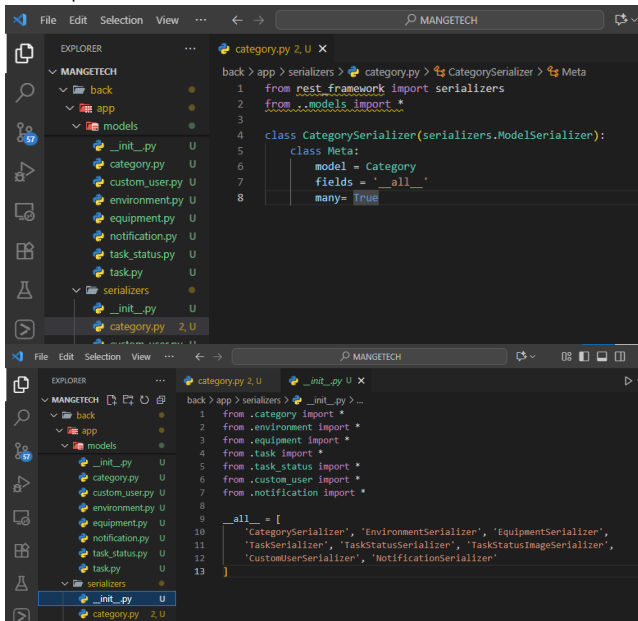




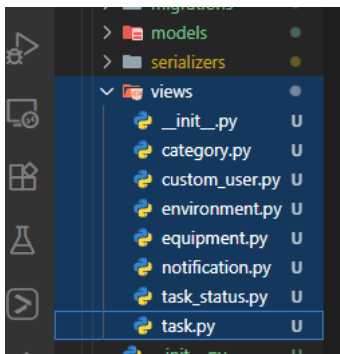
Cria pasta serializers dentro do app



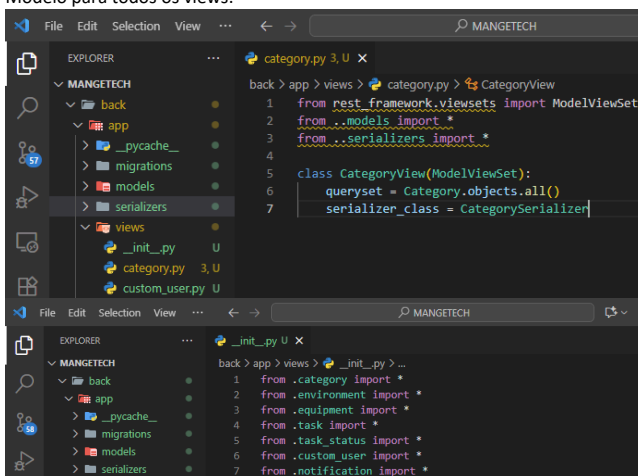
Modelo para todos os serializers

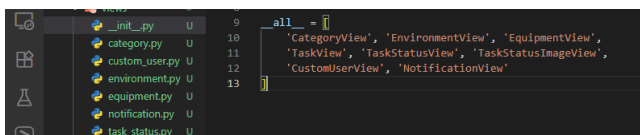


Criar:



Modelo para todos os views:





Criar Urls no app:

