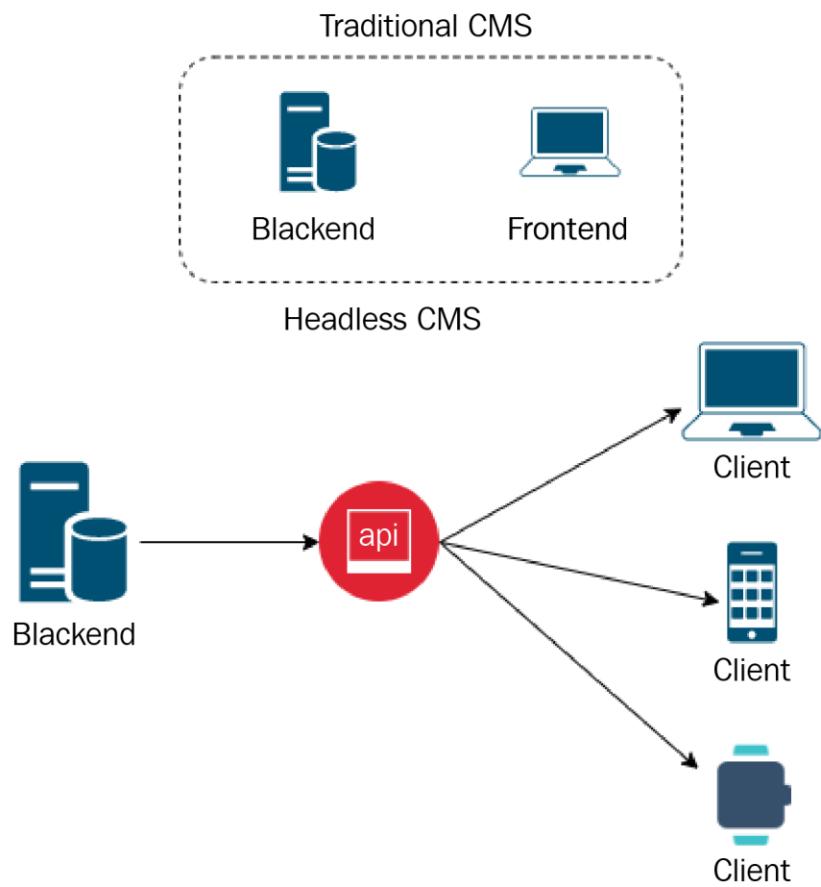


# Chapter 01: An Introduction to Strapi





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Strapi Dashboard

Workplace

---

 Content Manager

PLUGINS

 Content-Type Builder

 Media Library

GENERAL

 Plugins

 Marketplace

 Settings

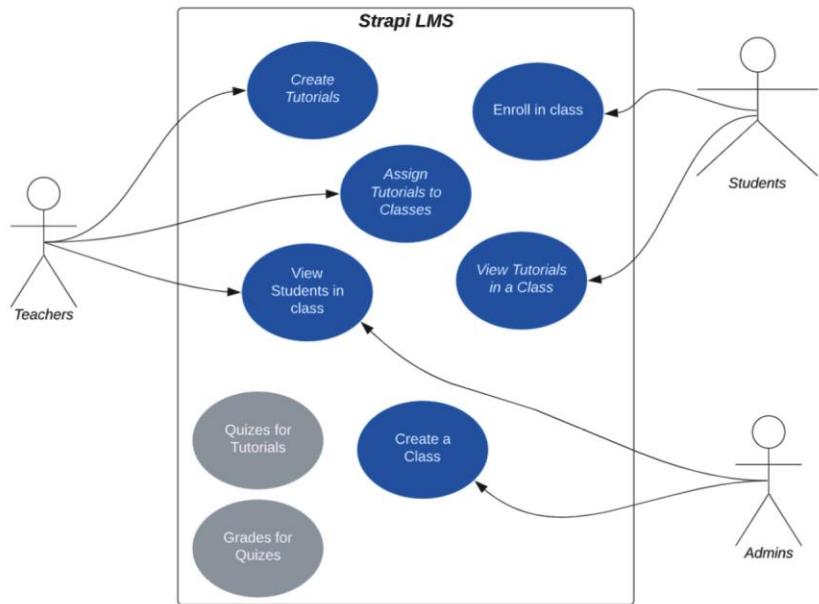
```
"scripts": {  
  "develop": "strapi develop",  
  "start": "strapi start",  
  "build": "strapi build",  
  "strapi": "strapi"  
},
```

## Chapter 02: Building Our First API

```
~/code/nyala/Building-APIs-with-Strapi ➜ main ± tree -L 1
.
├── README.md
├── build
├── config
├── database
├── favicon.ico
├── node_modules
├── package.json
├── public
└── src
└── yarn.lock

6 directories, 4 files
```

```
"devDependencies": {},
"dependencies": {
  "@strapi/strapi": "4.0.0",
  "@strapi/plugin-users-permissions": "4.0.0",
  "@strapi/plugin-i18n": "4.0.0",
  "sqlite3": "5.0.2"
},
```



CT **Create a collection type** X

**Configurations**
**BASE SETTINGS**
**ADVANCED SETTINGS**

---

**Display name**

**API ID (Singular)**


The UID is used to generate the API routes and databases tables/collections

**API ID (Plural)**

Pluralized API ID

**Cancel**
**Continue**

Ab Classroom X

### Add new Text field

BASE SETTINGS ADVANCED SETTINGS

**Name**  
  
No space is allowed for the name of the attribute

**Type**

**Short text**

Best for titles, names, links (URL). It also enables exact search on the field.

**Long text**

Best for descriptions, biography. Exact search is disabled.

Cancel + Add another field Finish

 **Strapi Dashboard**  
Workplace

 **Content Manager**

**PLUGINS**

 Content-Type Builder

 Media Library

**GENERAL**

 Plugins

 Marketplace

## Content

2 COLLECTION TYPES

- Classroom
- User

0 SINGLE TYPES

[← BACK](#)

## Create an entry

API ID : classroom

Publish

Save

Name

Strapi 101

Description

An introduction to Strapi



MaxStudents

12

- Editing draft version

### INFORMATION

Last update in 15 seconds

By

-

[Edit the model](#)

[Configure the view](#)

Unpublish

Save

- Editing published version

### INFORMATION

Last update in 10 seconds

By

Khalid Elshafie

[Edit the model](#)

[Configure the view](#)

[Delete this entry](#)

```

~/code/nyala/Building-APIs-with-Strapi ✘ main ± yarn strapi --help
yarn run v1.22.17
$ strapi --help
Usage: strapi [options] [command]

Options:
  -v, --version                                Output the version number
  -h, --help                                     Display help for command

Commands:
  version                                         Output your version of Strapi
  console                                         Open the Strapi framework console
  new [options] <directory>                      Create a new application
  start                                           Start your Strapi application
  develop|dev [options]                         Start your Strapi application in development mode
  generate                                         Launch interactive API generator
  templates:generate <directory>                Generate template from Strapi project
  build [options]                                 Builds the strapi admin app
  install [plugins...]                           Install a Strapi plugin
  uninstall [options] [plugins...]                Uninstall a Strapi plugin
  watch-admin [options]                          Starts the admin dev server
  configuration:dump|config:dump [options]       Dump configurations of your application
  configuration:restore|config:restore [options] Restore configurations of your application
  admin:reset-user-password|admin:reset-password [options] Reset an admin user's password
  routes:list                                     List all the application routes
  middlewares:list                               List all the application middlewares
  policies:list                                   List all the application policies
  content-types:list                            List all the application content-types
  hooks:list                                     List all the application hooks
  services:list                                   List all the application services
  help [command]                                  Display help for command

★ Done in 0.46s.

```

GET http://localhost:13... ● + ⚡

---

<http://localhost:1337/api/classrooms>

GET	http://localhost:1337/api/classrooms
Params	Authorization
Headers (6)	Body
Pre-request Script	Tests
Settings	

Body Cookies Headers (16) Test Results 🌐 Status: 403 Forbidden

Pretty Raw Preview Visualize JSON ≡

```

1  {
2    "data": null,
3    "error": {
4      "status": 403,
5      "name": "ForbiddenError",
6      "message": "Forbidden",
7      "details": {}
8    }
9  }

```

## Permissions

Only actions bound by a route are listed below.

**Classroom**  
Define all allowed actions for the api::classroom plugin.

CLASSROOM  Select all

create  delete  
 find  findOne  
 update

Bound route to api::classroom.classroom

GET /api/classrooms

GET http://localhost:13... ● + ⚡

<http://localhost:1337/api/classrooms>

GET http://localhost:1337/api/classrooms

Params Authorization Headers (6) Body Pre-request Script Tests Settings

Body Cookies Headers (16) Test Results Status: 200 OK

Pretty Raw Preview Visualize JSON ↻

```
1  {
2    "data": [
3      {
4        "id": 1,
5        "attributes": {
6          "name": "Strapi 101",
7          "description": "An introduction to Strapi",
8          "maxStudents": 12,
9          "createdAt": "2021-12-08T10:07:37.178Z",
10         "updatedAt": "2021-12-08T10:07:47.352Z",
11         "publishedAt": "2021-12-08T10:07:47.350Z"
12       }
13     }
14   ],
15   "meta": {
16     "pagination": {
17       "page": 1,
18       "pageSize": 25,
19       "pageCount": 1,
20       "total": 1
21     }
22   }
23 }
```

## Permissions

Only actions bound by a route are listed below.

### Classroom

Define all allowed actions for the api::classroom plugin.

CLASSROOM

Select all

create



delete

find

findOne

update

Bound route to api::classroom.classroom

POST /api/classrooms

POST http://localhost:1... ● + ⚙

http://localhost:1337/api/classrooms

POST http://localhost:1337/api/classrooms

Params Authorization Headers (8) **Body** Pre-request Script Tests Settings

none form-data x-www-form-urlencoded raw binary GraphQL **JSON**

```
1 {  
2   "data": {  
3     "name": "Strapi Advanced",  
4     "description": "Advanced concepts of Strapi",  
5     "maxStudents": 15  
6   }  
7 }
```

Body Cookies Headers (16) Test Results 🌐 Status: 200 OK

Pretty Raw Preview Visualize JSON

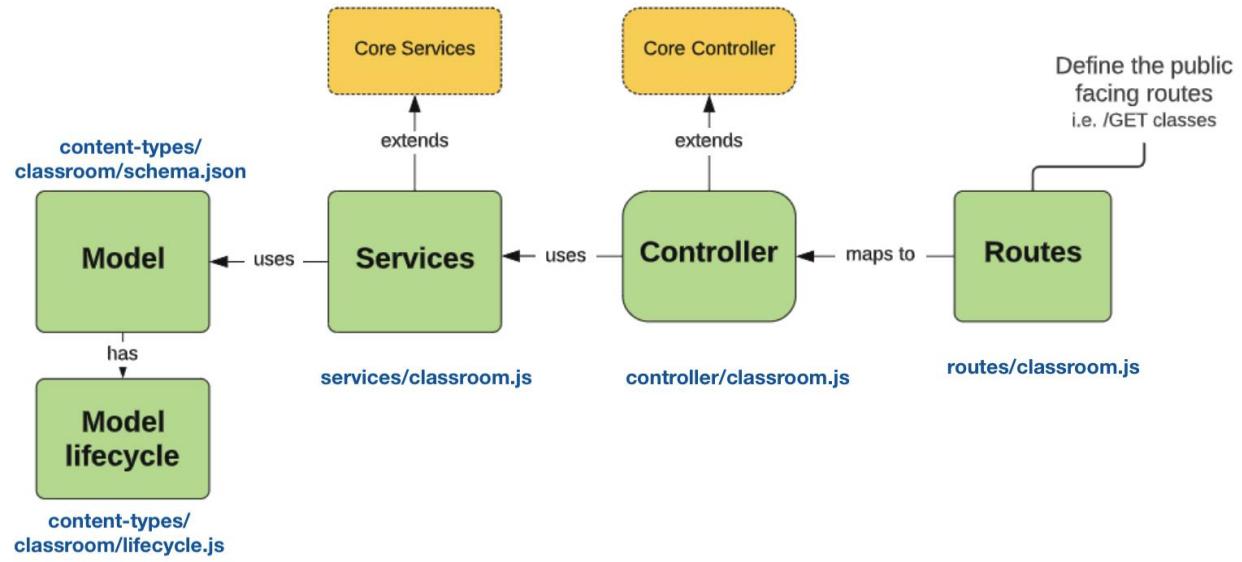
```
1 {  
2   "data": {  
3     "id": 2,  
4     "attributes": {  
5       "name": "Strapi Advanced",  
6       "description": "Advanced concepts of Strapi",  
7       "maxStudents": 15,  
8       "createdAt": "2021-12-08T10:46:53.028Z",  
9       "updatedAt": "2021-12-08T10:46:53.028Z",  
10      "publishedAt": "2021-12-08T10:46:53.013Z"  
11    }  
12  },  
13  "meta": {}  
14 }
```

```
└─ api
    └─ classroom
        └─ content-types / classroom
            └─ schema.json
            └─ controllers
                └─ classroom.js
            └─ routes
                └─ classroom.js
            └─ services
                └─ classroom.js
```

{...} schema.json U X

src > api > classroom > content-types > classroom > {...} schema.json > ...

```
1  {
2      "kind": "collectionType",
3      "collectionName": "classrooms",
4      "info": {
5          "singularName": "classroom",
6          "pluralName": "classrooms",
7          "displayName": "Classroom"
8      },
9      "options": {
10         "draftAndPublish": true
11     },
12     "pluginOptions": {},
13     "attributes": {
14         "name": {
15             "type": "string"
16         },
17         "description": {
18             "type": "text"
19         },
20         "maxStudents": {
21             "type": "integer"
22         }
23     }
24 }
25 
```



## Chapter 03: Strapi Content-Types

The screenshot shows the Strapi Content-Type Builder interface. At the top, there is a search icon. Below it, the title "Content-Type Builder" is displayed. The interface is organized into three main sections: "COLLECTION TYPES", "SINGLE TYPE", and "COMPONENT".

- COLLECTION TYPES**: Shows 2 items:
  - Classroom
  - UserA blue "+ Create new collection type" button is located below the list.
- SINGLE TYPE**: Shows 0 items.
  - + Create new single type
- COMPONENT**: Shows 0 items.
  - + Create new component

CT

## Create a collection type



### Configurations

BASE SETTINGS

ADVANCED SETTINGS

#### Draft/Publish

##### Draft/publish system

OFF

ON

Write a draft version of each entry before publishing it

#### Settings

Enable localization for this Content-Type

Allow you to have content in different locales

Cancel

Continue

## Select a field for your collection type

<b>Text</b> Small or long text like title or description	<b>Email</b> Email field with validations format
<b>Rich text</b> A rich text editor with formatting options	<b>Password</b> Password field with encryption
<b>Number</b> Numbers (integer, float, decimal)	<b>Enumeration</b> List of values, then pick one
<b>Date</b> A date picker with hours, minutes and seconds	<b>Media</b> Files like images, videos, etc
<b>Boolean</b> Yes or no, 1 or 0, true or false	<b>JSON</b> Data in JSON format
<b>Relation</b> Refers to a Collection Type	<b>UID</b> Unique identifier

<b>Component</b>	<b>Dynamic zone</b>
------------------	---------------------

Ab Tutorial X

## Add new Text field

BASE SETTINGS

ADVANCED SETTINGS

Default value

RegEx pattern

The text of the regular expression

### Settings

Required field

You won't be able to create an entry if this field is empty

Maximum length

Unique field

You won't be able to create an entry if there is an existing entry with identical content

Minimum length

Private field

This field will not show up in the API response

Cancel

+ Add another field

Finish

Tutorial X

## Add new Enumeration field

BASE SETTINGS

ADVANCED SETTINGS

Name

No space is allowed for the name of the attribute

Values (one line per value)

Cancel

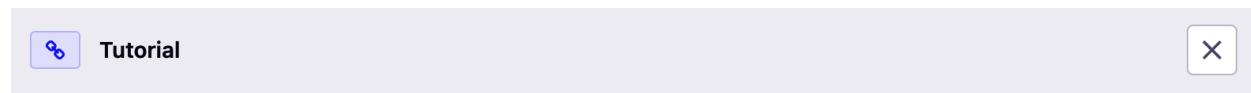
+ Add another field

Finish

# Waiting for restart...

You're using a feature that needs the server to restart. Please wait until the server is up.  
TYPE

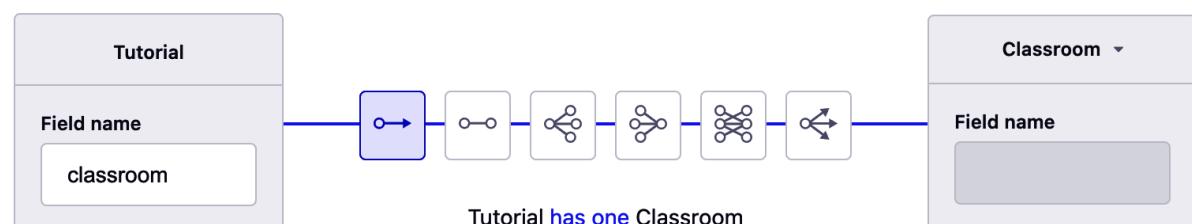
Title	 Text
Slug	Text
<a href="#">DOCUMENTATION</a>	
Type	Enumeration
Url	Text



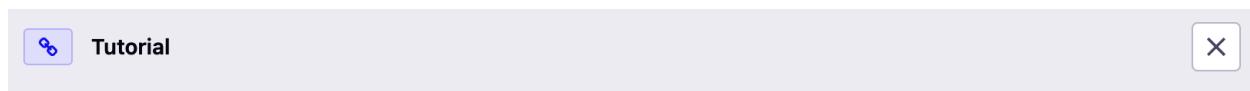
## Add new Relation field

BASE SETTINGS

ADVANCED SETTINGS



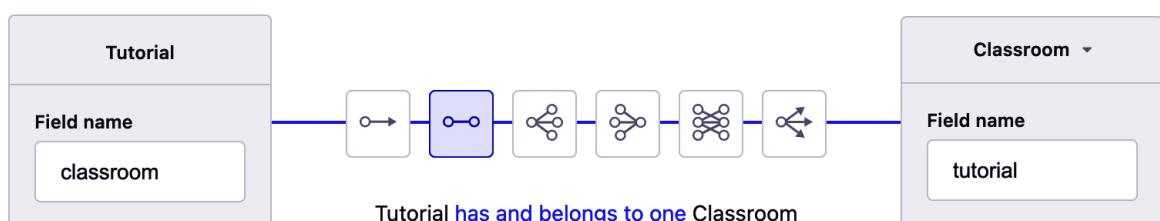
<a href="#">Cancel</a>	<a href="#">+ Add another field</a>	<a href="#">Finish</a>
------------------------	-------------------------------------	------------------------



## Add new Relation field

BASE SETTINGS

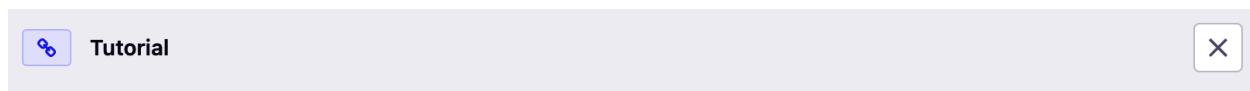
ADVANCED SETTINGS



Cancel

+ Add another field

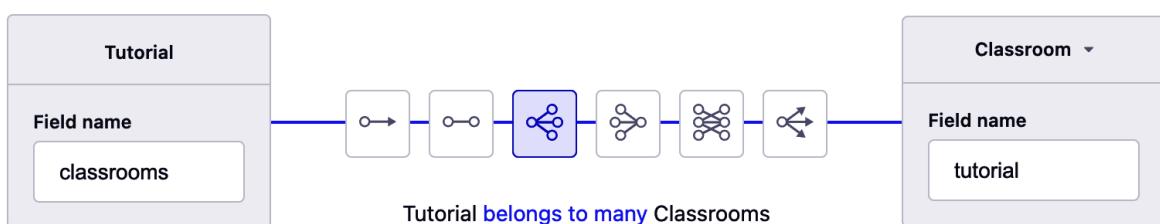
Finish



## Add new Relation field

BASE SETTINGS

ADVANCED SETTINGS



Cancel

+ Add another field

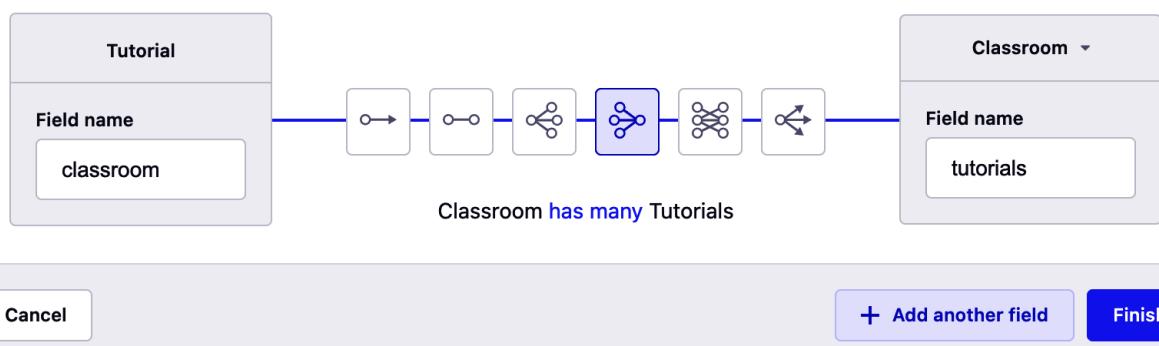
Finish



## Add new Relation field

BASE SETTINGS

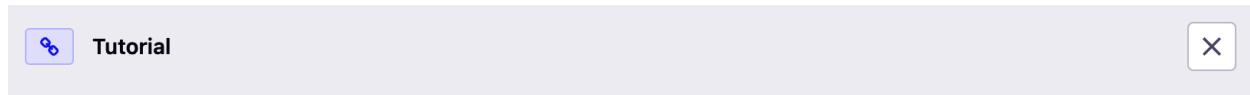
ADVANCED SETTINGS



Cancel

+ Add another field

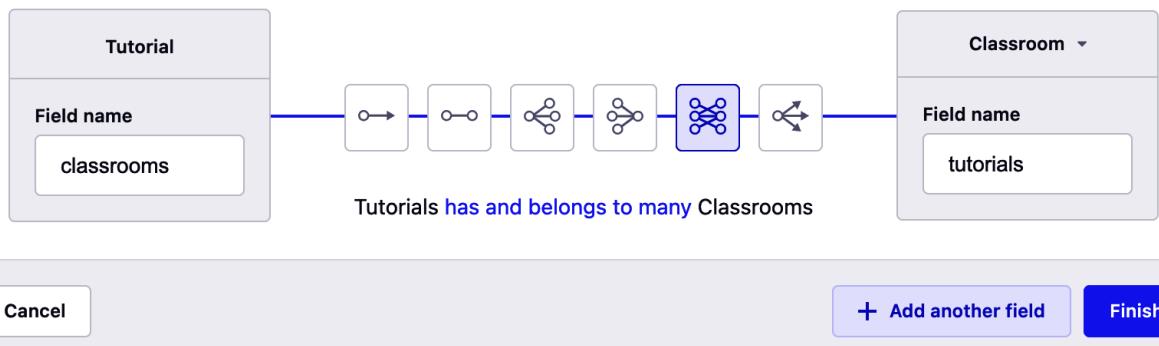
Finish



## Add new Relation field

BASE SETTINGS

ADVANCED SETTINGS



Cancel

+ Add another field

Finish

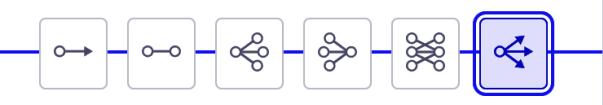
 Tutorial X

### Add new Relation field

**BASE SETTINGS** **ADVANCED SETTINGS**

**Tutorial**

Field name  
classrooms



Tutorial **has many** Classrooms

**Classroom** ▾

Field name

**Cancel**  Add another field Finish

### RELATION

**Classroom**

Select ▼

- Strapi 101

 **Configure the view**

## Permissions

Only actions bound by a route are listed below.

### Classroom

Define all allowed actions for the api::classroom plugin.



### Tutorial

Define all allowed actions for the api::tutorial plugin.



TUTORIAL

Select all

create

delete

find

findOne



update

GET http://localhost:13... ● + ⚡

http://localhost:1337/api/tutorials?populate=\*

GET http://localhost:1337/api/tutorials?populate=\*

Params ● Authorization Headers (8) Body ● Pre-request Script Tests Settings

Body Cookies Headers (16) Test Results

Pretty Raw Preview Visualize JSON

```
1  {
2      "data": [
3          {
4              "id": 1,
5              "attributes": {
6                  "title": "Introduction to Strapi",
7                  "slug": "introduction-to-strapi",
8                  "type": "text",
9                  "url": null,
10                 "contents": "Introduction to Strapi",
11                 "createdAt": "2021-12-09T22:21:47.209Z",
12                 "updatedAt": "2021-12-09T22:26:19.099Z",
13                 "publishedAt": "2021-12-09T22:21:48.334Z",
14                 "classroom": {
15                     "data": {
16                         "id": 1,
17                         "attributes": {
18                             "name": "Strapi 101",
19                             "description": "Introduction to Strapi",
20                             "maxStudents": 15,
21                             "createdAt": "2021-12-08T10:07:37.178Z",
22                             "updatedAt": "2021-12-09T22:20:48.906Z",
23                             "publishedAt": "2021-12-08T10:07:47.350Z"
24                         }
25                     }
26                 }
27             }
28         }
```

POST http://localhost:1... ● + ⚡

http://localhost:1337/api/tutorials

POST http://localhost:1337/api/tutorials

Params Authorization Headers (8) **Body** Pre-request Script Tests Settings

none form-data x-www-form-urlencoded raw binary GraphQL **JSON**

```
1 [
2   ...
3     "data": {
4       ...
5         "title": "Content types in Strapi",
6         "slug": "conent-types-in-strapi",
7         ...
8         "type": "text",
9         ...
10        "contents": "Content types in Strapi allows us to define the entites that make up the api",
11        ...
12        "classroom": 1
13      }
14    }
15  ]
16 ]
```

Body Cookies Headers (16) Test Results Status

Pretty Raw Preview Visualize JSON

```
1 [
2   ...
3     "data": {
4       ...
5         "id": 2,
6         "attributes": {
7           ...
8             "title": "Content types in Strapi",
9             "slug": "conent-types-in-strapi",
10            ...
11            "type": "text",
12            ...
13            "url": null,
14            ...
15            "contents": "Content types in Strapi allows us to define the entites that make up the api",
16            ...
17            "createdAt": "2021-12-11T00:48:49.182Z",
18            ...
19            "updatedAt": "2021-12-11T00:48:49.182Z",
20            ...
21            "publishedAt": "2021-12-11T00:48:49.180Z"
22          }
23        },
24        "meta": {}
25      ]
26    ]
```

[← GO BACK](#)

## Info

Edit

+ Add another field

✓ Save

Build the data architecture of your content.

☰ Configure the view

NAME	TYPE	
Ab Name	Text	
Ab Version	Text	
Ab Description	Text	

+ Add another field to this single type

## Content

---

COLLECTION TYPES 3

- Classroom
- Tutorial
- User

SINGLE TYPE 1

- Info



Info &gt; Developers



## Edit Developers

BASE SETTINGS

ADVANCED SETTINGS

Name

developers

No space is allowed for the name of the attribute

Select a component

information - developer

Type

**Repeatable component** Best for multiple instances (array) of ingredients, meta tags, etc..**Single component**

Best for grouping fields like full address, main information, etc...

[Cancel](#)[+ Add another field](#)[Finish](#)

GET http://localhost:13... ● + ⚡

http://localhost:1337/api/info?populate=\*

GET http://localhost:1337/api/info?populate=\*

Params ● Authorization Headers (6) Body Pre-request Script Tests Settings

Body Cookies Headers (16) Test Results

Pretty Raw Preview Visualize JSON

```
1 {
2   "data": {
3     "id": 1,
4     "attributes": {
5       "name": "Strapi LMS api",
6       "version": "1.0.0",
7       "description": "Strapi LMS API, an simple LMS API build with the popular Strapi CMS",
8       "createdAt": "2021-12-11T00:57:23.384Z",
9       "updatedAt": "2021-12-11T01:04:34.581Z",
10      "publishedAt": "2021-12-11T00:57:25.381Z",
11      "developers": [
12        {
13          "id": 1,
14          "name": "Khalid Elshafie",
15          "github": "abolkog"
16        },
17        {
18          "id": 2,
19          "name": "Mozafar Hayden",
20          "github": "kabaros"
21        }
22      ]
23    },
24    "meta": {}
25  }
26 }
```

# Chapter 04: An Overview of the Strapi Admin Panel

The screenshot shows the Strapi Admin Panel interface. On the left, there's a sidebar with various icons and labels:

- Strapi Dashboard** (Workplace)
- Content Manager** (highlighted with a blue background)
- PLUGINS**
- Content-Type Builder**
- Media Library**
- GENERAL**
- Plugins**
- Marketplace**
- Settings**

On the right, the main content area is titled **Content** with a search icon. It shows the following sections:

- COLLECTION TYPES** (3 items):
  - Classroom
  - Tutorial
  - User
- SINGLE TYPE** (1 item):
  - Info

Strapi Dashboard  
Workplace

Content Manager

PLUGINS

Content-Type Builder

Media Library

GENERAL

Plugins

Marketplace

Settings

Users

1 user found

Create new user

FIRSTNAME LASTNAME EMAIL ROLES USERNAME ACTIVE USER

Strapi	Admin	admin@strapi.com	Super Admin -	Active
--------	-------	------------------	---------------	--------

Entries per page: 10 | Page: 1

EMAIL PLUGIN

SETTINGS PLUGIN

USERS & PERMISSIONS PLUGIN

Roles

Providers

Email templates

Advanced settings

FIRSTNAME	LASTNAME	EMAIL	ROLES	USERNAME	ACTIVE USER	
Strapi	Admin	admin@strapi.com	Super Admin -	Active		

## Create new user



### Details

First name

Last name

Email

### Login settings

User's roles

Super Admin | X



Your user can have one or several roles

Cancel

Create user

## Create new user



<http://localhost:1337/admin/auth/register?registrationToken=9920d54b72...>

Send this link to the user for them to connect.

### Details

First name

Last name

Second

user

Email

superadmin2@packt.com

### Login settings

User's roles

Super Admin

Your user can have one or several roles

[Cancel](#)

[Finish](#)

## Settings

### GLOBAL SETTINGS

- Application
- API Tokens
- Internationalization
- Media Library
- Webhooks

### ADMINISTRATION PANEL

- Roles
- Users

### EMAIL PLUGIN

- Settings

## Roles

List of roles

+ Add new role

NAME	DESCRIPTION	USERS	
Author	Authors can manage the content they have created.	0 user	 
Editor	Editors can manage and publish contents including those of other users.	0 user	 
Super Admin	Super Admins can access and manage all features and settings.	2 users	 

+ Add new role

[← GO BACK](#)

## Edit Second user

 Save



<http://localhost:1337/admin/auth/register?registrationToken=9920d54b72...> 

Send this link to the user for them to connect.

### Details

First name

Second

Last name

user

Email

superadmin2@packt.com

Username

e.g. Kai\_Doe

Password



Confirmation Password

Active

OFF

ON

### Login settings

User's roles

Editor 



Your user can have one or several roles

Strapi Dashboard  
Workplace

**Content Manager**

PLUGINS

Media Library

GENERAL

Settings

SU Second user

?

**Content**

COLLECTION TYPES 0

SINGLE TYPES 0

**Content**



You don't have the permissions to access that content

**Settings**

GLOBAL SETTINGS

- Application
- API Tokens
- Internationalization
- Media Library
- Webhooks

ADMINISTRATION PANEL

- Roles**
- Users

EMAIL PLUGIN

- Settings

USERS & PERMISSIONS PLUGIN

- Roles
- Providers
- Email templates
- Advanced settings

**Edit a role**

← GO BACK

Save

Define the rights given to the role

**Editor**

Editors can manage and publish contents including those of other users.

1 user with this role

Name: Editor

Description: Editors can manage and publish contents including those of other users.

Collection Types	Single Types	Plugins	Settings	
CREATE	READ	UPDATE	DELETE	PUBLISH
<input type="checkbox"/> Classroom	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Tutorial	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> User	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Strapi Dashboard  
Workplace

Content

COLLECTION TYPES 2

- Classroom
- Tutorial

SINGLE TYPES 0

Classroom

1 entry found

+ Add new entry

4 currently selected

ID	NAME	DESCRIPTION	MAXSTUDENTS	STATE
1	Strapi 101	Introduction to Strapi	15	Published

10 Entries per page

This screenshot shows the Strapi Content Manager interface. On the left, there's a sidebar with links for Content Manager, Plugins, Media Library, and Settings. The main area is titled 'Content' and shows 'COLLECTION TYPES' with 'Classroom' and 'Tutorial' listed. Below that is 'SINGLE TYPES' which is currently empty. The main content area is titled 'Classroom' and shows '1 entry found'. A table lists the single entry: ID 1, NAME 'Strapi 101', DESCRIPTION 'Introduction to Strapi', MAXSTUDENTS 15, and STATE 'Published'. There are buttons for editing, deleting, and trash. At the bottom, there's a dropdown for 'Entries per page' set to 10.

Content

COLLECTION TYPES 2

- Classroom
- Tutorial

Classroom

1 entry found

typescript

Filters

This screenshot shows the Strapi Content Manager interface. The sidebar shows 'COLLECTION TYPES' with 'Classroom' and 'Tutorial' listed. The main content area is titled 'Classroom' and shows '1 entry found'. A search bar contains the text 'typescript'. A 'Filters' button is also visible.

Content

COLLECTION TYPES 2

- Classroom
- Tutorial

SINGLE TYPES 0

Classroom

1 entry found

typescript

Filters

ID	NAME
1	Strapi 101

MAXSTUDENTS

is greater than

3

+ Add filter

10 Entries per page

This screenshot shows the Strapi Content Manager interface. The sidebar shows 'COLLECTION TYPES' with 'Classroom' and 'Tutorial' listed. The main content area is titled 'Classroom' and shows '1 entry found'. A search bar contains 'typescript'. A 'Filters' button is visible. A modal window is open, showing a filter for 'MAXSTUDENTS' set to 'is greater than 3'. Other filter options like 'MaxStudents' and 'to Strapi' are also visible. At the bottom, there's a dropdown for 'Entries per page' set to 10.

```

= 't2`.`id` left join `admin_users_roles_links` as `t3` on `t2`.`id` = `t3`.`role_id` left join `admin_users` as `t4` on `t3`.`user_id` = `t4`.`id` where (`t4`.`id` = ?) undefined +2ms
? undefined +8ms
knex:query select `t0`.* , `t0`.`id` from `classrooms` as `t0` where (`t0`.`id` LIKE ? ESCAPE '\\' or `t0`.`name` LIKE ? ESCAPE '\\' or `t0`.`description` LIKE ? ESCAPE '\') order by `t0`.`name` ASC limit
(2021-12-11 12:51:26.287) http://GET /content-manager/collection-types/api:classroom?page=1&pageSize=10&sort=name:ASC&_q=typescript (13 ms) 200
knex:query select count(*) as `count` from `classrooms` as `t0` where (`t0`.`id` LIKE ? ESCAPE '\\' or `t0`.`name` LIKE ? ESCAPE '\\' or `t0`.`description` LIKE ? ESCAPE '\') limit ? undefined +1ms
knex:query select `t0`.* , `t0`.`id` from `admin_users` as `t0` where (`t0`.`id` = ?) limit ? undefined +11s
knex:query select distinct `t0`.* , `t1`.`user_id` from `admin_roles` as `t0` left join `admin_users_roles_links` as `t1` on `t0`.`id` = `t1`.`role_id` where (`t1`.`user_id` in (?)) undefined +4ms
knex:query select distinct `t0`.* from `admin_permissions` as `t0` left join `admin_permissions_role_links` as `t1` on `t0`.`id` = `t1`.`permission_id` left join `admin_roles` as `t2` on `t1`.`role_id` undefined +1ms

```

## Tutorial

2 entries found

<input type="checkbox"/>	ID	TITLE	SLUG	TYPE	STATE
<input type="checkbox"/>	2	Content types in Strapi	conent-types-in-strapi	text	Published
<input type="checkbox"/>	1	Introduction to Strapi	introduction-to-strapi	text	Published

10 Entries per page

4 currently selected 

- Classroom
- Contents
- CreatedAt
- Id
- Slug
- Title

[← GO BACK](#)

# Configure the view - Tutorial

[✓ Save](#)

Define the settings of the list view.

## Settings

Enable search

OFF	ON
-----	----

Enable filters

OFF	ON
-----	----

Enable bulk actions

OFF	ON
-----	----

Entries per page

10

Default sort attribute

title

Default sort order

ASC

Note: You can override this value in the Collection Type settings page.

## View

Id

Title

Slug

Type

+

classroom

contents

createdAt

updatedAt

url



## Edit the model



## Configure the view



## Delete this entry

[← GO BACK](#)

### Configure the view - Classroom

Save

Customize how the edit view will look like.

#### Settings

##### Entry title

name

Set the displayed field of your entry

#### View

##### Displayed Fields

Drag & drop the fields to build the layout

Edit the content type

Name		
MaxStudents		

[+ Insert another field](#)

##### Relational fields

Drag & drop the fields to build the layout

Tutorials		
-----------	--	--

[+ Insert another relational field](#)

### Edit Tutorials

**Label**

Tutorials

**Description**

**Placeholder**

**Editable field**

OFF      ON

**Entry title**

title

Set the displayed field in both the edit and list views

**Cancel**

**Finish**

### Edit Name

**Label**

Name

**Description**

**Placeholder**

**Editable field**

OFF      ON

**Cancel**

**Finish**

### Upload assets

4 assets selected  
Manage the assets before adding them to the Media Library

**Upload new asset**

596103e7-f776-4202-9dcb-e133ce3cb222.png IMAGE PNG

logo-strapi-1.jpg\_595ca392ec.jpeg IMAGE JPEG

Screen Shot 2021-12-11 at 1.08.37 pm.png IMAGE PNG

strapi-cover\_1fabc982ce.png IMAGE PNG

**Cancel** **Upload 4 asset to the library**

### Tutorial

#### Add new Media field

**BASE SETTINGS** **ADVANCED SETTINGS**

**Name**  
coverImage

No space is allowed for the name of the attribute

**Type**

**Multiple media**  
Best for sliders, carousels or multiple files download

**Single media**  
Best for avatar, profile picture or cover

**Cancel** **+ Add another field** **Finish**

Ab Title Text

Tutorial

**Add new Media field**

BASE SETTINGS ADVANCED SETTINGS

Select allowed types of media

Images

All

images (JPEG, PNG, GIF, SVG, TIFF, ICO, DVU)

videos (MPEG, MP4, Quicktime, WMV, AVI, FLV)

files (CSV, ZIP, MP3, PDF, Excel, JSON, ...)

required field  
be able to create an entry if this field is empty

+ Add another field Finish

Content ← BACK

# Introduction to Strapi

API ID : tutorial

Unpublish Save

Title\* Slug\*

Introduction to Strapi introduction-to-strapi

Type Url

text

Contents CoverImage

Introduction to Strapi

strapi

+ ⌂ ⌂ ✎

Editing published version

INFORMATION

Last update yesterday

By Khalid Elshafie

RELATION

Classroom DETAILS

Strapi 101

Edit the model

Configure the view

Delete this entry

GET http://localhost:13... ● + ⚡ Nayal-Local

http://localhost:1337/api/tutorials/1?populate=\*

Save Send ⚡

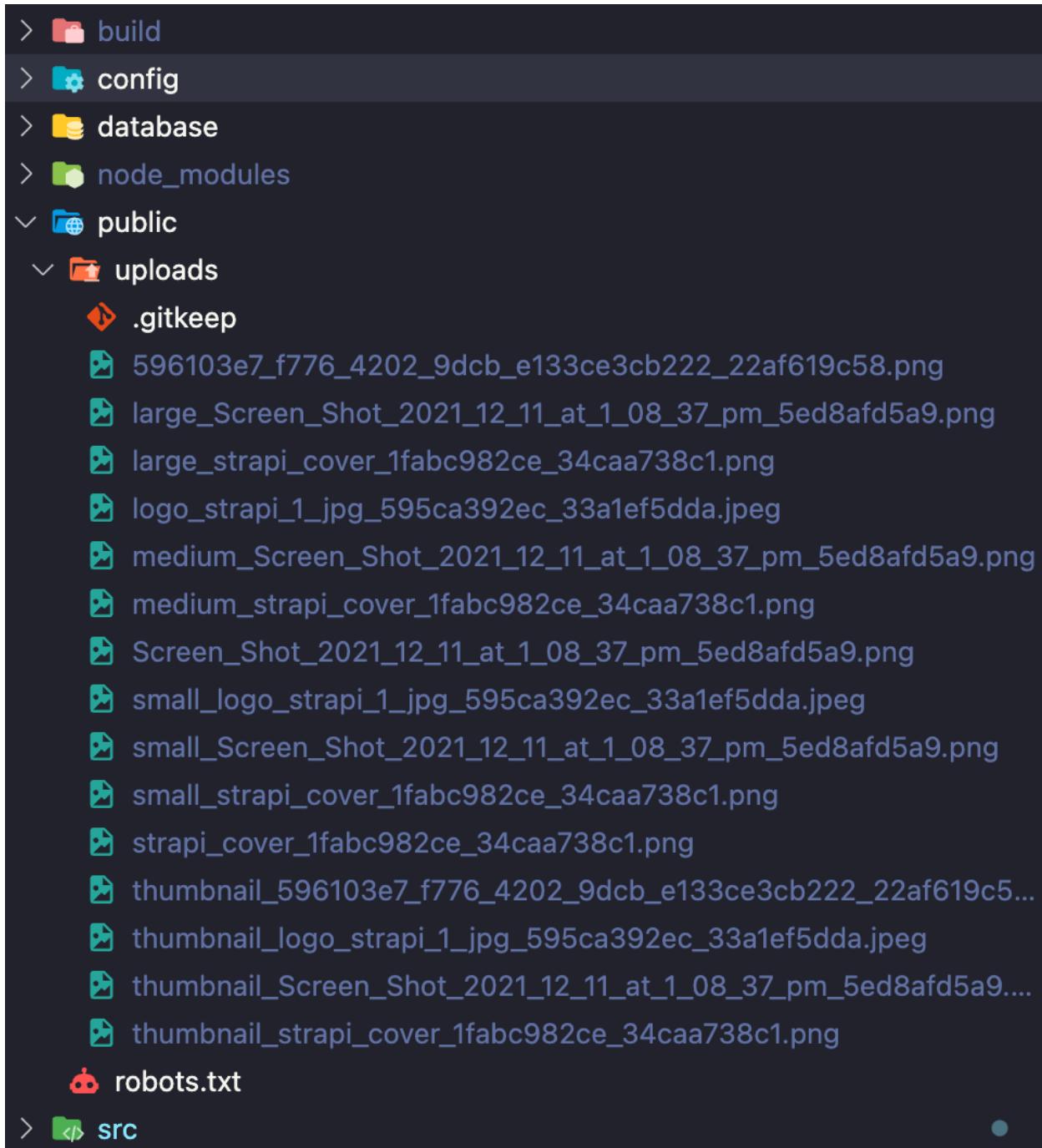
GET http://localhost:1337/api/tutorials/1?populate=\*

Params Authorization Headers (6) Body Pre-request Script Tests Settings Cookies

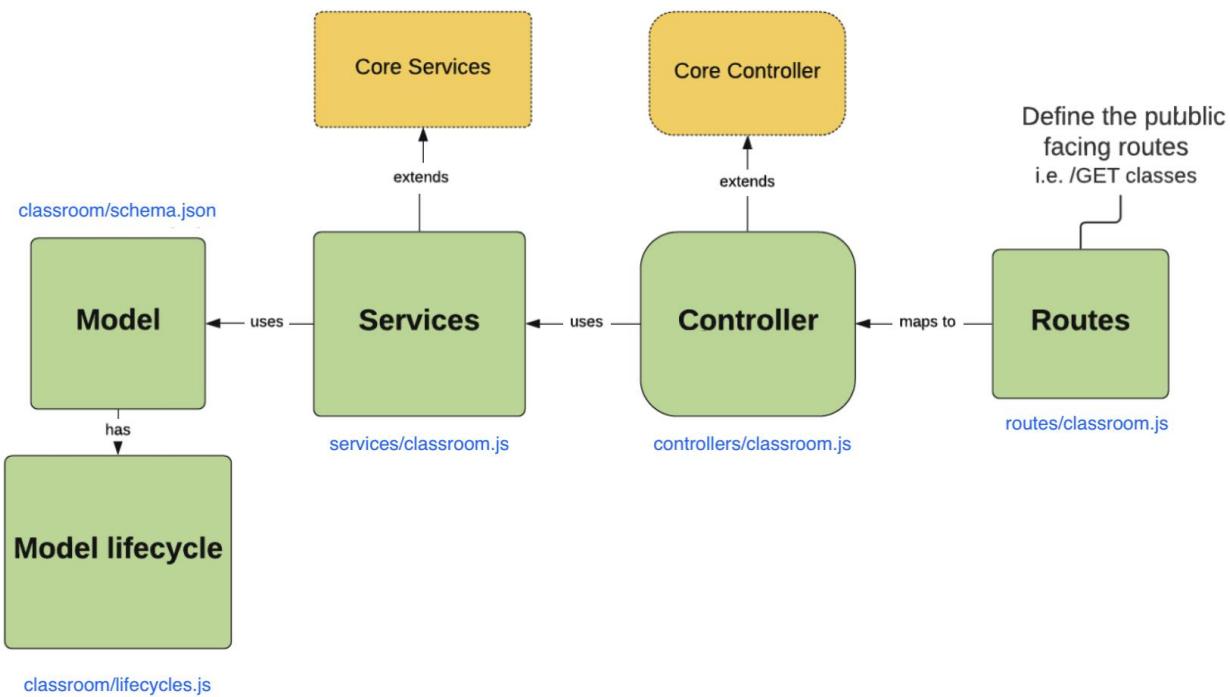
Status: 200 OK Time: 14 ms Size: 2.77 KB Save Response

Pretty Raw Preview Visualize JSON

```
1 {
2   "data": {
3     "id": 1,
4     "attributes": {
5       "title": "Introduction to Strapi",
6       "slug": "introduction-to-strapi",
7       "type": "text",
8       "url": null,
9       "contents": "Introduction to Strapi",
10      "createdAt": "2021-12-09T22:21:47.209Z",
11      "updatedAt": "2021-12-11T02:12:36.860Z",
12      "publishedAt": "2021-12-09T22:21:48.334Z",
13      "classroom": { ...
14        },
15      "coverImage": {
16        "data": {
17          "id": 3,
18          "attributes": {
19            "name": "strapi-cover_1fabc982ce.png",
20            "alternativeText": "strapi-cover_1fabc982ce.png",
21            "caption": "strapi-cover_1fabc982ce.png",
22            "width": 1066,
23            "height": 551,
24            "formats": {
25              "thumbnail": {
26                "name": "thumbnail_strapi-cover_1fabc982ce.png",
27                "hash": "thumbnail_strapi_cover_1fabc982ce_34caa738c1",
28                "ext": ".png",
29                "mime": "image/png",
30                "width": 245,
31                "height": 127,
32                "size": 3.37,
33              }
34            }
35          }
36        }
37      }
38    }
39  }
40 }
```



## Chapter 05: Customizing Our API



HTTP Verb	Path (URI)	Default Handler (Defined in Controllers)	Operation
GET	/api/tutorials	tutorial.find	Gets all tutorials
GET	/api/tutorials/:id	tutorial.findOne	Gets a single tutorial by ID
POST	/api/tutorials	tutorial.create	Creates a new tutorial
PUT	/api/tutorials/:id	tutorial.update	Updates the tutorial that matches the specified ID
DELETE	/api/tutorials/:id	tutorial.delete	Deletes the tutorial that matches the specified ID

GET  Send

Params Authorization Headers (6) Body Pre-request Script Tests Settings Cookies

Body Cookies Headers (16) Test Results Status: 404 Not Found Time: 55 ms Size: 913 B Save Response

Pretty Raw Preview Visualize JSON

```
1 {  
2   "data": null,  
3   "error": [  
4     "status": 404,  
5     "name": "NotFoundError",  
6     "message": "Not Found",  
7     "details": []  
8   ]  
9 }
```

```
module.exports = {  
...  
  routes: [  
    {  
      method: 'GET',  
      path: '/classrooms/:id/tutorials',  
      handler: 'classroom.findTutorials',  
      config: {  
        auth: false,  
      },  
    },  
  ],  
};
```

```
[2021-12-12 12:44:48.295] debug: 🚨 Server wasn't able to start properly.  
[2021-12-12 12:44:48.296] error: Error creating endpoint GET /classroom/:id/tutorials: Handler not found "classroom.findTutorials"  
Error: Error creating endpoint GET /classroom/:id/tutorials: Handler not found "classroom.findTutorials"  
at getAction (/Users/khalid/code/nyala/Building-APIs-with-Strapi/node_modules/@strapi/strapi/lib/services/server/compose-endpoint.js:131:11)
```

The screenshot shows the Postman application interface with two requests to the same endpoint. Both requests are GET methods to `http://localhost:1337/api/classrooms/1/tutorials`.

**Request 1 (Top):**

- Method: GET
- URL: `http://localhost:1337/api/classrooms/1/tutorials`
- Status: 200 OK
- Body:  
1 to be implemented

**Request 2 (Bottom):**

- Method: GET
- URL: `http://localhost:1337/api/classrooms/1/tutorials`
- Status: 501 Not Implemented
- Body:  
1 to be implemented

```
debug: params: {"0":"api/classroom/1/tutorials","id":"1"}  
debug: query: {"publisher":"packt","name":"Strapi"}  
http: GET /api/classroom/1/tutorials?publisher=packt&name=Strapi (13 ms) 501
```

```
debug: findTutorials: classroomId = 1  
http: GET /api/classroom/1/tutorials (12 ms) 200
```

GET <http://localhost:1337/api/classroom/1/tutorials> Send

Params Authorization Headers (6) Body Pre-request Script Tests Settings Cookies

Body Cookies Headers (16) Test Results Status: 200 OK Time: 32 ms Size: 1.34 KB Save Response

Pretty Raw Preview Visualize JSON

```
1 {
2     "id": 1,
3     "title": "Introduction to Strapi",
4     "slug": "introduction-to-strapi",
5     "type": "text",
6     "url": null,
7     "contents": "Introduction to Strapi",
8     "createdAt": "2021-12-09T22:21:47.209Z",
9     "updatedAt": "2021-12-12T09:41:03.464Z",
10    "publishedAt": "2021-12-09T22:21:48.334Z"
11 },
12 }
```

GET <http://localhost:1337/api/classroom/1/tutorials> Send

Params Authorization Headers (6) Body Pre-request Script Tests Settings Cookies

Body Cookies Headers (16) Test Results Status: 200 OK Time: 28 ms Size: 1.39 KB Save Response

Pretty Raw Preview Visualize JSON

```
1 {
2     "data": [
3         {
4             "id": 1,
5             "attributes": {
6                 "title": "Introduction to Strapi",
7                 "slug": "introduction-to-strapi",
8                 "type": "text",
9                 "url": null,
10                "contents": "Introduction to Strapi",
11                "createdAt": "2021-12-09T22:21:47.209Z",
12                "updatedAt": "2021-12-12T09:41:03.464Z",
13                "publishedAt": "2021-12-09T22:21:48.334Z"
14            }
15        }
16    ]
17 }
```

GET <http://localhost:1337/api/classroom/1/tutorials> Send

Params Authorization Headers (6) Body Pre-request Script Tests Settings Cookies

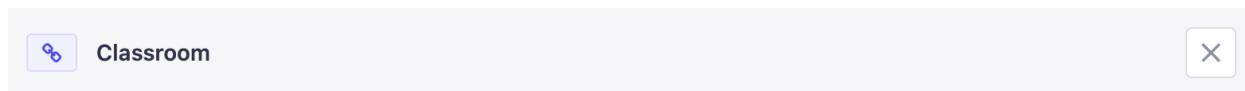
Body Cookies Headers (16) Test Results Status: 200 OK Time: 24 ms Size: 3.27 KB Save Response

Pretty Raw Preview Visualize JSON

```

1 ↴ {
2 ↵   "data": [
3 ↵     {
4 ↵       "id": 1,
5 ↵       "attributes": {
6 ↵         "title": "Introduction to Strapi",
7 ↵         "slug": "introduction-to-strapi",
8 ↵         "type": "text",
9 ↵         "url": null,
10 ↵         "contents": "Introduction to Strapi",
11 ↵         "createdAt": "2021-12-09T22:21:47.209Z",
12 ↵         "updatedAt": "2021-12-12T09:41:03.464Z",
13 ↵         "publishedAt": "2021-12-09T22:21:48.334Z",
14 ↵         "classroom": {
15 ↵           "id": 1,
16 ↵           "name": "Strapi 101",
17 ↵           "description": "Introduction to Strapi",
18 ↵           "maxStudents": 15,
19 ↵           "createdAt": "2021-12-08T10:07:37.178Z",
20 ↵           "updatedAt": "2021-12-09T22:20:48.906Z",
21 ↵           "publishedAt": "2021-12-08T10:07:47.350Z"
}

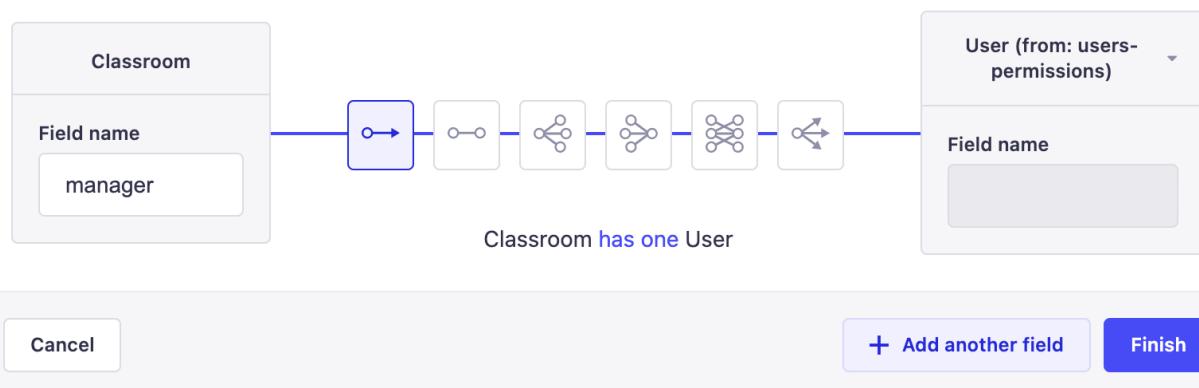
```



### Add new Relation field

[BASE SETTINGS](#)

[ADVANCED SETTINGS](#)



[← BACK](#)

## Create an entry

API ID : user

Save

Username\*

educator1

Email\*

educator1@strapi.com

Password

.....



Confirmed

OFF

ON

Blocked

OFF

ON

### INFORMATION

Last update

in 10 seconds

By



### RELATION

Role

Authenticated



[Edit the model](#)

[Configure the view](#)

## ● INTRODUCTION TO STRAPI



### Manager

Select

educator1

[Configure the view](#)

[Delete this entry](#)

GET http://localhost:1337/api/classroom/1/tutorials

Params Authorization Headers (6) Body Pre-request Script Tests Settings Cookies

Body Cookies Headers (16) Test Results Status: 200 OK Time: 30 ms Size: 3.92 KB Save Response

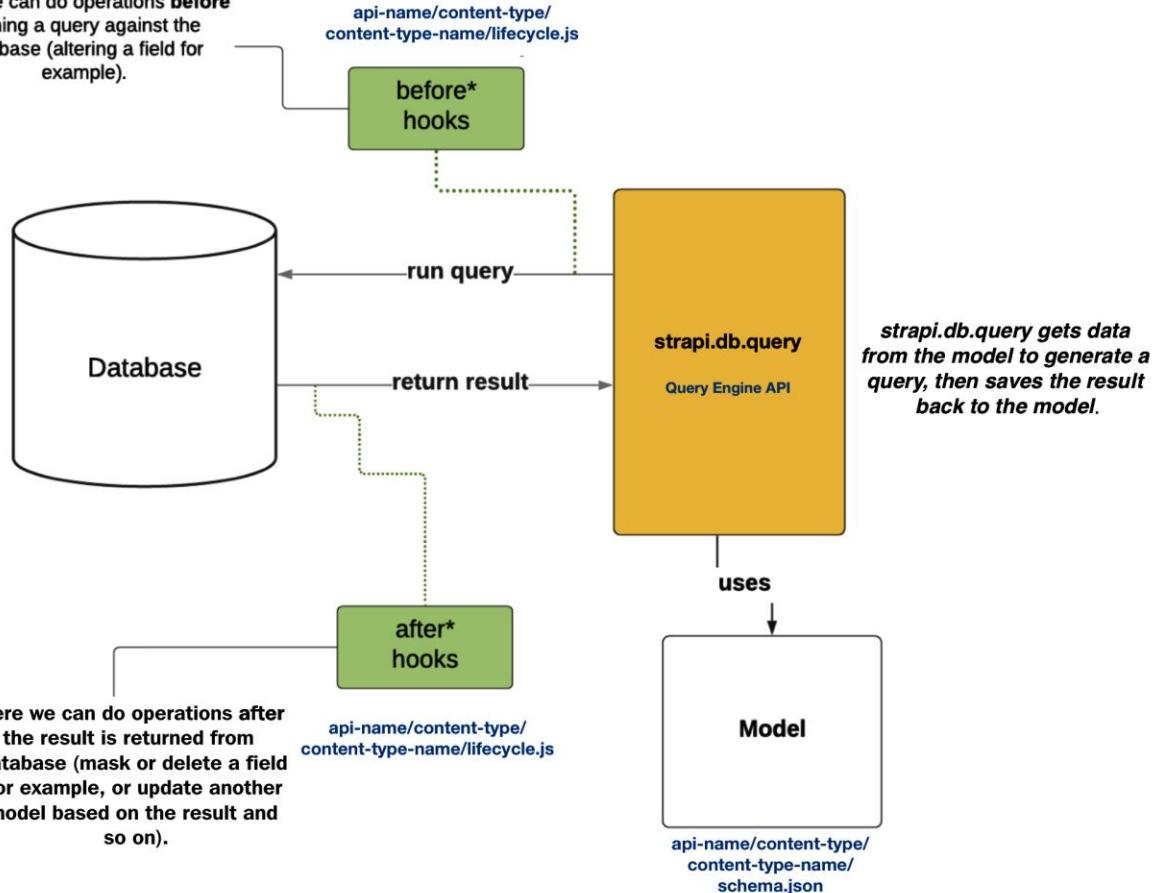
Pretty Raw Preview Visualize JSON

```
10 "contents": "Introduction to Strapi",
11 "createdAt": "2021-12-09T22:21:47.209Z",
12 "updatedAt": "2021-12-12T09:41:03.464Z",
13 "publishedAt": "2021-12-09T22:21:48.334Z",
14 "classroom": {
15     "id": 1,
16     "name": "Strapi 101",
17     "description": "Introduction to Strapi",
18     "maxStudents": 15,
19     "createdAt": "2021-12-08T10:07:37.178Z",
20     "updatedAt": "2021-12-13T10:38:47.223Z",
21     "publishedAt": "2021-12-08T10:07:47.350Z",
22     "manager": {
23         "id": 1,
24         "username": "educator1",
25         "email": "educator1@strapi.com",
26         "provider": "local",
27         "password": "$2a$10$BXXX21ngvDz0S4Lro4g.[REDACTED]"
28         "resetPasswordToken": null,
29         "confirmationToken": null,
30         "confirmed": true,
31     }
32 }
```

Find and Replace Console Bootcamp Runner Trash

```
"manager": {
    "id": 1,
    "username": "educator1",
    "email": "educator1@strapi.com",
    "provider": "local",
    "password": "$2a$10$BXXX21ngvDz0S4Lro4g.[REDACTED]"
    "resetPasswordToken": null,
    "confirmationToken": null,
    "confirmed": true,
    "blocked": false,
    "createdAt": "2021-12-12T07:43:43.832Z",
    "updatedAt": "2021-12-12T07:43:43.832Z"
}
```

Here we can do operations before running a query against the database (altering a field for example).



[← BACK](#)

# LifeCycle Hooks

API ID : tutorial

Title\*

LifeCycle Hooks

Slug\*

Type

text

Url

Contents

A model is a representation of a database entity. An entity in a system has a lifecycle: it gets created, updated, deleted, and retrieved. While the routes are the external interface to the outside world, the database is the most inner level of our system. Strapi communicates with the database

CoverImage

Click to select an asset

Summary

A model is a representation of a database entity. An entity in a system has a lifecycle: it gets created, updated, deleted, and retrieved. While the routes are the external interface to the outside wo

# Chapter 06: Dealing with Content

The screenshot shows two API requests in the Postman application.

**POST Request:**

- URL: `http://localhost:1337/api/classrooms/seed`
- Body:

```
1 {  
2   "message": "Ok"  
3 }
```

**GET Request:**

- URL: `http://localhost:1337/api/classrooms?sort=maxStudents:desc`
- Body:

```
1 {  
2   "data": [  
3     {  
4       "id": 112,  
5       "attributes": {  
6         "name": "classroom_3",  
7         "description": "Description of the classroom classroom_3",  
8         "maxStudents": 30,  
9         "createdAt": "2021-12-14T20:58:01.197Z",  
10        "updatedAt": "2021-12-14T20:58:01.197Z",  
11        "publishedAt": "2021-12-14T20:58:01.158Z"  
12      }  
13    },  
14    {  
15      "id": 110,  
16      "attributes": {  
17        "name": "classroom_1",  
18        "description": "Description of the classroom classroom_1",  
19        "maxStudents": 29,  
20        "createdAt": "2021-12-14T20:58:01.197Z",  
21        "updatedAt": "2021-12-14T20:58:01.197Z",  
22      }  
23  }]
```

GET http://localhost:1337/api/classrooms?sort=createdAt,maxStudents:asc

Params • Authorization Headers (6) Body Pre-request Script Tests Settings

Body Cookies Headers (16) Test Results

Pretty Raw Preview Visualize JSON

```
1 {
2   "data": [
3     {
4       "id": 1,
5       "attributes": {
6         "name": "Strapi 101",
7         "description": "Introduction to Strapi",
8         "maxStudents": 15,
9         "createdAt": "2021-12-08T10:07:37.178Z",
10        "updatedAt": "2021-12-13T10:38:47.223Z",
11        "publishedAt": "2021-12-08T10:07:47.350Z"
12      }
13    },
14    {
15      "id": 128,
16      "attributes": {
17        "name": "classroom_19",
18        "description": "Description of the classroom classroom_19",
19        "maxStudents": 2,
20        "createdAt": "2021-12-14T20:58:01.197Z",
21        "updatedAt": "2021-12-14T20:58:01.197Z",
22      }
23    }
24  ]
25}
```

Find and Replace Console

<b>Filter operator</b>	<b>Description</b>
\$eq	Equal to
\$ne	Not equal
\$containsi	Contains
\$contains	Contains case sensitive
\$ncontainsi	Does not contain
\$ncontains	Does not contain case sensitive
\$lt	Less than
\$lte	Less than or equal to
\$gt	Greater than
\$gte	Greater than or equal to
\$in	Included in an array
\$nin	Not included in an array
\$null	Is null
\$notNull	Is not null
\$between	Value between
\$startsWith	Starts with
\$endsWith	Ends with

GET http://localhost:1337/api/classrooms?filters[name][\$contains]=classroom\_3

Params (1) Authorization Headers (6) Body Pre-request Script Tests Settings

Body Cookies Headers (16) Test Results

Pretty Raw Preview Visualize JSON ↻

```
1  {
2      "data": [
3          {
4              "id": 112,
5                  "attributes": {
6                      "name": "classroom_3",
7                      "description": "Description of the classroom classroom_3",
8                      "maxStudents": 30,
9                      "createdAt": "2021-12-14T20:58:01.197Z",
10                     "updatedAt": "2021-12-14T20:58:01.197Z",
11                     "publishedAt": "2021-12-14T20:58:01.158Z"
12                 }
13             },
14             {
15                 "id": 139,
16                     "attributes": {
17                         "name": "classroom_30",
18                         "description": "Description of the classroom classroom_30",
19                         "maxStudents": 10,
20                         "createdAt": "2021-12-14T20:58:01.198Z",
21                         "updatedAt": "2021-12-14T20:58:01.198Z",
22                     }
23             }
24         ]
25     }
```

Find and Replace Console

```
~/code/nyala/Building-APIs-with-Strapi ✘ main ± ➔ node query_helper.js
filters[$or][0][maxStudents][$lt]=10&filters[$or][1][maxStudents][$gt]=25&filters[name][$contains]=classroom_3

http://localhost:1337/api/classrooms?filters[$or][0][maxStudents][$lt]=10&filters[$or][1][maxStudents][$gt]=25&filters[name][$contains]=classroom_3
```

GET http://localhost:1337/api/classrooms?filters[\$or][0][maxStudents][\$lt]=10&filters[\$or][1][maxStudents][\$gt]=25&filters[name][\$contains]=classroom\_3

Params • Authorization Headers (6) Body Pre-request Script Tests Settings

Body Cookies Headers (16) Test Results Status: 200 OK Time: 23 ms

Pretty Raw Preview Visualize JSON

```
1 {
2   "data": [
3     {
4       "id": 112,
5       "attributes": {
6         "name": "classroom_3",
7         "description": "Description of the classroom classroom_3",
8         "maxStudents": 30,
9         "createdAt": "2021-12-14T20:58:01.197Z",
10        "updatedAt": "2021-12-14T20:58:01.197Z",
11        "publishedAt": "2021-12-14T20:58:01.158Z"
12      }
13    },
14    {
15      "id": 140,
16      "attributes": {
17        "name": "classroom_31",
18        "description": "Description of the classroom classroom_31",
19        "maxStudents": 9,
20        "createdAt": "2021-12-14T20:58:01.198Z",
21        "updatedAt": "2021-12-14T20:58:01.198Z",
22      }
23    }
24  ]
25}
```

Find and Replace Console

GET http://localhost:1337/api/classrooms?pagination[pageSize]=10

Params ● Authorization Headers (6) Body Pre-request Script Tests Settings

Body Cookies Headers (16) Test Results

Pretty Raw Preview Visualize JSON ↻

```
--  
103 |     "id": 118,  
104 |     "attributes": {  
105 |         "name": "classroom_9",  
106 |         "description": "Description of the classroom classroom_9",  
107 |         "maxStudents": 16,  
108 |         "createdAt": "2021-12-14T20:58:01.197Z",  
109 |         "updatedAt": "2021-12-14T20:58:01.197Z",  
110 |         "publishedAt": "2021-12-14T20:58:01.158Z"  
111 |     }  
112 | },  
113 | ],  
114 | "meta": {  
115 |     "pagination": {  
116 |         "page": 1,  
117 |         "pageSize": 10,  
118 |         "pageCount": 6,  
119 |         "total": 51  
120 |     },  
121 |     "totalTutorials": 110  
122 | }  
123 | }
```

Find and Replace Console

GET http://localhost:1337/api/classrooms?pagination[start]=15&pagination[limit]=10

Params ● Authorization Headers (6) Body Pre-request Script Tests Settings

Body Cookies Headers (16) Test Results Status: 200 OK Time

Pretty Raw Preview Visualize JSON

```
102 [
103   {
104     "id": 133,
105     "attributes": {
106       "name": "classroom_24",
107       "description": "Description of the classroom classroom_24",
108       "maxStudents": 18,
109       "createdAt": "2021-12-14T20:58:01.198Z",
110       "updatedAt": "2021-12-14T20:58:01.198Z",
111       "publishedAt": "2021-12-14T20:58:01.159Z"
112     }
113   ],
114   "meta": {
115     "pagination": {
116       "start": 15,
117       "limit": 10,
118       "total": 51
119     },
120     "totalTutorials": 110
121   }
122 ]
```

Find and Replace Console

# Chapter 07: Authentication and Authorization in Strapi

The image shows the Strapi Dashboard Workplace interface. On the left, there's a sidebar with various menu items: Content Manager, Plugins (Content-Type Builder, Media Library), General (Plugins, Marketplace), and Settings. The Settings item is highlighted with a blue background. The main content area is titled "Settings". It contains several sections: "GLOBAL SETTINGS" (Application, API Tokens, Internationalization, Media Library, Webhooks), "ADMINISTRATION PANEL" (Roles, Users, highlighted with a red border), "EMAIL PLUGIN" (Settings), and "USERS & PERMISSIONS PLUGIN" (Roles, Providers, Email templates, Advanced settings).

**Strapi Dashboard**  
Workplace

Content Manager

**PLUGINS**

Content-Type Builder

Media Library

**GENERAL**

Plugins

Marketplace

**Settings**

**Settings**

**GLOBAL SETTINGS**

- Application
- API Tokens
- Internationalization
- Media Library
- Webhooks

**ADMINISTRATION PANEL**

- Roles
- Users

**EMAIL PLUGIN**

- Settings

**USERS & PERMISSIONS PLUGIN**

- Roles
- Providers
- Email templates
- Advanced settings

Strapi Dashboard  
Workplace

Content Manager

PLUGINS

Content-Type Builder

Media Library

GENERAL

Plugins

Marketplace

Settings

Content-Type Builder

COLLECTION TYPES ▾ 3

- Classroom
- Tutorial
- User

+ Create new collection type

SINGLE TYPE ▾ 1

- Info

+ Create new single type

COMPONENT ▾ 1

- Information
- Developer

+ Create new component

← GO BACK

# User

Build the data architecture of your content.

NAME	TYPE
Ab Username	Text
@ Email	Email
Ab Provider	Text
🔒 Password	Password
Ab ResetPasswordToken	Text
Ab ConfirmationToken	Text
-toggle Confirmed	Boolean
toggle Blocked	Boolean
role Role	Relation with <i>Role</i> (from: users-permissions)

+ Add another field to this collection type

POST http://localhost:1337/api/auth/local/register

Params Authorization Headers (8) **Body** Pre-request Script Tests Settings Cookies Beautify

none form-data x-www-form-urlencoded raw binary GraphQL JSON

```
1 {  
2   "username": "educator1",  
3   "email": "educator1@strapi.com",  
4   "password": "password"  
5 }
```

Body Cookies Headers (19) Test Results Status: 200 OK Time: 970 ms Size: 1.21 KB Save Response

Pretty Raw Preview Visualize JSON

```
1 {  
2   "jwt": "eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJpZCI6MiwidWF0IjoxNjM5NjA1NDUyLCJleHAiOjE2NDIxOTc0NTJ9.  
sLubsnKm_377Sd3kc_Pg16mxueGfSw9ZsKrQF2ZLgMY",  
3   "user": {  
4     "id": 2,  
5     "username": "educator1",  
6     "email": "educator1@strapi.com",  
7     "provider": "local",  
8     "confirmed": true,  
9     "blocked": false,  
10    "createdAt": "2021-12-15T21:57:32.202Z",  
11    "updatedAt": "2021-12-15T21:57:32.202Z"  
12  }  
}
```

POST http://localhost:1337/api/auth/local

Params Authorization Headers (8) **Body** Pre-request Script Tests Settings Cookies Beautify

none form-data x-www-form-urlencoded raw binary GraphQL JSON

```
1 {  
2   "identifier": "educator1@strapi.com",  
3   "password": "password"  
4 }
```

Body Cookies Headers (19) Test Results Status: 200 OK Time: 87 ms Size: 1.21 KB Save Response

Pretty Raw Preview Visualize JSON

```
1 {  
2   "jwt": "eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJpZCI6MiwidWF0IjoxNjM5NjA1NTU3LCJleHAiOjE2NDIxOTc1NTd9.  
OBWWM85D-7RWUT-YTP-ldGDhxdHxM74fjFnRE676-18",  
3   "user": {  
4     "id": 2,  
5     "username": "educator1",  
6     "email": "educator1@strapi.com",  
7     "provider": "local",  
8     "confirmed": true,  
9     "blocked": false,  
10    "createdAt": "2021-12-15T21:57:32.202Z",  
11    "updatedAt": "2021-12-15T21:57:32.202Z"  
12  }  
}
```

## Encoded

PASTE A TOKEN HERE

```
eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJpZCI6MiwiaWF0IjoxNjM5NjA1NTU3LCJleHAiOjE2NDIxOTc1NTd9.ObWWWM85D-7RWUT_YTP-1dGDhxdHxM74fjFnRE676-18
```

## Decoded

EDIT THE PAYLOAD AND SECRET

HEADER: ALGORITHM & TOKEN TYPE

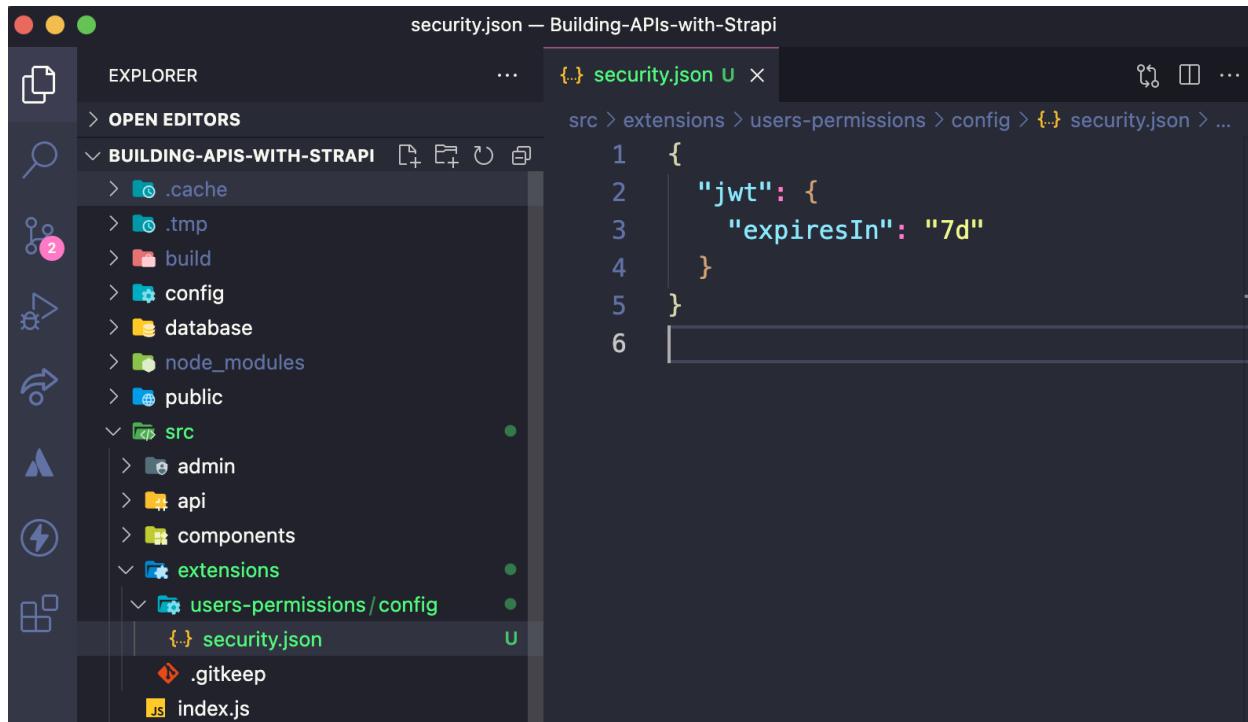
```
{  
  "alg": "HS256",  
  "typ": "JWT"  
}
```

PAYOUT: DATA

```
{  
  "id": 2,  
  "iat": 1639605557,  
  "exp": 1642197557  
}
```

VERIFY SIGNATURE

```
HMACSHA256(  
  base64UrlEncode(header) + "." +  
  base64UrlEncode(payload),  
  your-256-bit-secret  
)  secret base64 encoded
```



The screenshot shows the VS Code interface with the following details:

- File Explorer:** Shows the project structure under "BUILDING-APIS-WITH-STRAPI". The "src" folder contains "admin", "api", "components", "extensions", and "users-permissions/config". Inside "users-permissions/config", there is a file named "security.json".
- Editor:** The "security.json" file is open in the editor. The code content is as follows:

```
1  {  
2   "jwt": {  
3     "expiresIn": "7d"  
4   }  
5 }  
6
```

USERS & PERMISSIONS PLUGIN

- Roles
- Providers
- Email templates
- Advanced settings

Info  
Define all allowed actions for the api::info plugin.

Tutorial  
Define all allowed actions for the api::tutorial plugin.

TUTORIAL  Select all

create  delete

find  findOne

update

POST  http://localhost:1337/api/tutorials

Params Authorization Headers (8) Body  Pre-request Script Tests Settings Cookies

none  form-data  x-www-form-urlencoded  raw  binary  GraphQL  JSON  Beautify

```
1 {
2   "data": []
3     "title": "Authentication in Strapi",
4     "description": "How to protect and secure API endpoints in Strapi",
5     "slug": "authentication-in-strapi",
6     "type": "text",
7     "contents": "It is easy to secure API endpoints in Strapi",
8     "classroom": "1"
9   }
10 }
```

Body Cookies Headers (16) Test Results  Status: 403 Forbidden Time: 9 ms Size: 914 B

Pretty Raw Preview Visualize JSON

```
1 {
2   "data": null,
3   "error": {
4     "status": 403,
5     "name": "ForbiddenError",
6     "message": "Forbidden",
7     "details": {}
8   }
9 }
```

[GO BACK](#)

# Authenticated

✓ Save

Default role given to authenticated user.

## Role details

### Name

Authenticated

### Description

Default role given to authenticated user.

## Permissions

Only actions bound by a route are listed below.

Bound route to api::tutorial.tutorial

POST /api/tutorials

### Classroom

Define all allowed actions for the api::classroom plugin.

### Info

Define all allowed actions for the api::info plugin.

### Tutorial

Define all allowed actions for the api::tutorial plugin.

#### TUTORIAL

Select all

create



delete

findOne

update

http://localhost:1337/api/tutorials

POST http://localhost:1337/api/tutorials Send

Params Authorization Headers (9) Body Pre-request Script Tests Settings Cookies

Type Bearer Token Token eyJhbGciOiJIUzI1NilsInR5cCl6IkpXVCJ9eyJ...

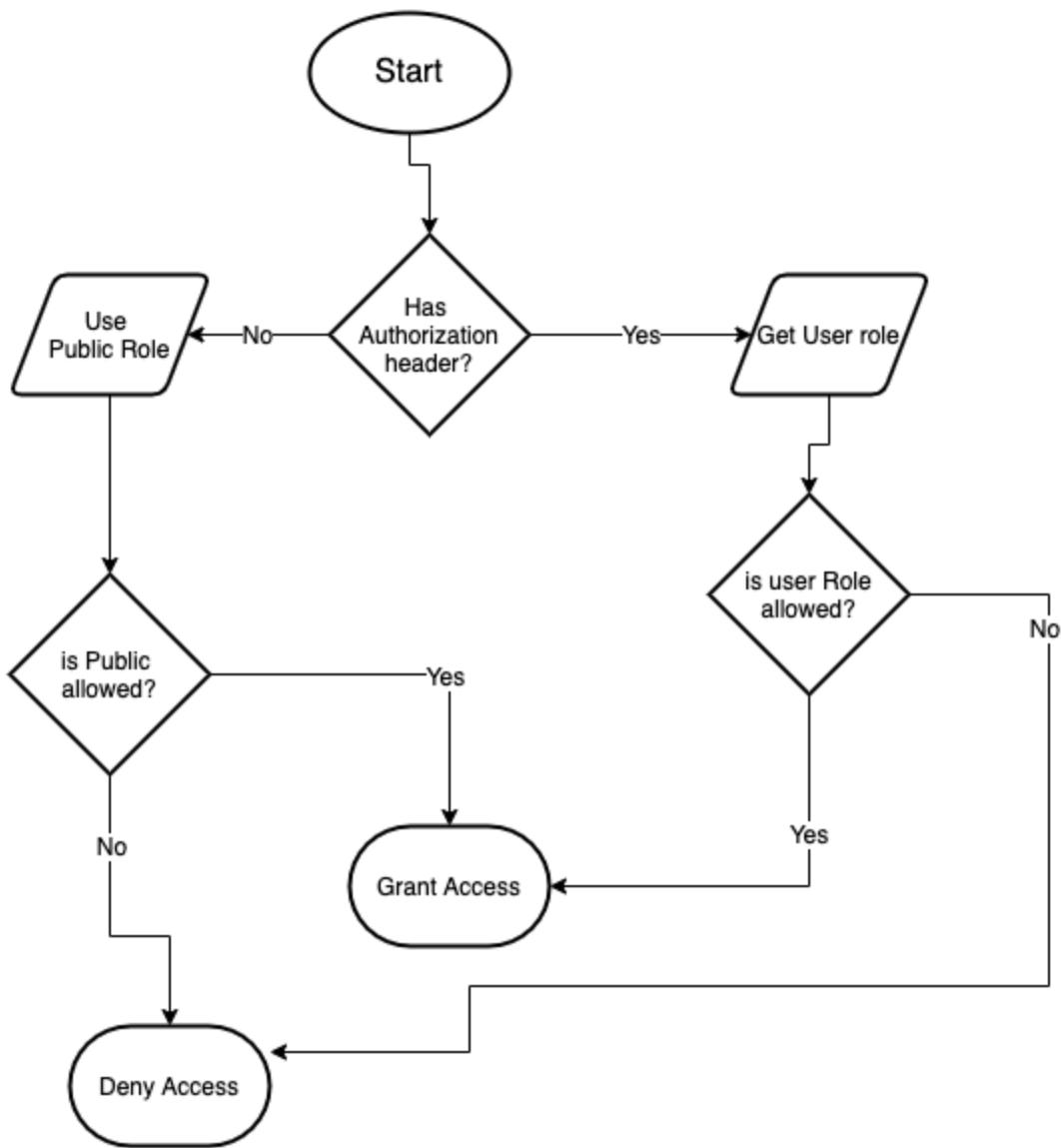
The authorization header will be automatically generated when you send the request.  
[Learn more about authorization ↗](#)

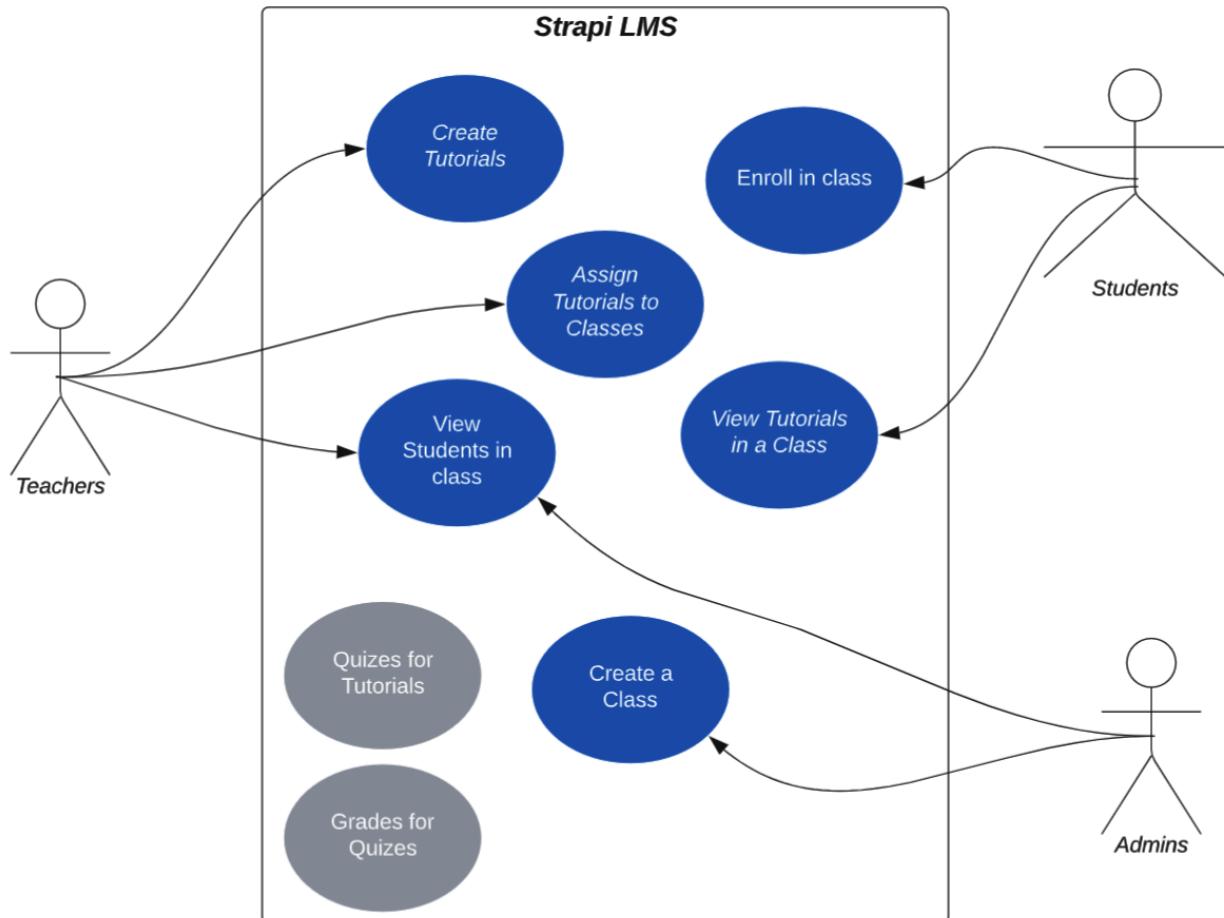
Body Cookies Headers (16) Test Results Status: 200 OK Time: 30 ms Size: 1.16 KB Save Response

Pretty Raw Preview Visualize JSON

```
1 {  
2   "data": {  
3     "id": 8,  
4     "attributes": {  
5       "title": "Authentication in Strapi",  
6       "slug": "authentication-in-strapi",  
7       "type": "text",  
8       "url": null,  
9       "contents": "It is easy to secure API endpoints in Strapi",  
10      "createdAt": "2021-12-15T22:22:40.505Z",  
11      "updatedAt": "2021-12-15T22:22:40.505Z",  
12      "publishedAt": "2021-12-15T22:22:40.501Z",  
13    }  
14  }  
15}  
16
```

Find and Replace Console Bootcamp Runner Trash





Actor (Role)	Classroom Permissions	Tutorial Permissions
Students	find findOne findTutorial	findOne
Teachers	find findOne findTutorial	findOne create
Admins	All	All

# Create a role

✓ Save

Define the rights given to the role

## Role details

### Name

Student

### Description

Student role permissions

## Permissions

Only actions bound by a route are listed below.

### Classroom

Define all allowed actions for the api::classroom plugin.

CLASSROOM

Select all

create

delete

find

findOne

findTutorials

update

Bound route to api::tutorial.tutorial

GET /api/tutorials/:id

### Info

Define all allowed actions for the api::info plugin.

### Tutorial

Define all allowed actions for the api::tutorial plugin.

# Create a role

✓ Save

Define the rights given to the role

## Role details

### Name

Teacher

### Description

Teacher Role

## Permissions

Only actions bound by a route are listed below.

### Classroom

Define all allowed actions for the api::classroom plugin.

### Info

Define all allowed actions for the api::info plugin.

### Tutorial

Define all allowed actions for the api::tutorial plugin.

#### TUTORIAL

Select all

create

delete

findOne



update

## Bound route to api::tutorial.tutorial

GET /api/tutorials/:id

## Content types builder

# Create a role

✓ Save

Define the rights given to the role

## Role details

Name

Admin

Description

Admin user

## Permissions

Only actions bound by a route are listed below.

### Classroom

Define all allowed actions for the api::classroom plugin.

CLASSROOM

Select all

create

delete

find

findOne

findTutorials

update

## Advanced settings

Select the application's actions or the plugin's actions and click on the cog icon to display the bound route

### Info

Define all allowed actions for the api::info plugin.

# Roles

+ Add new role

List of roles



NAME	DESCRIPTION	USERS	
Admin	Admin user	0 users	
Authenticated	Default role given to authenticated user.	2 users	
Public	Default role given to unauthenticated user.	0 users	
Student	Student role permissions	0 users	
Teacher	Teacher Role	0 users	

trapi.com

ON

Last update

38 minutes ago

By

RELATION

Role

Teacher

X ▾

Public

Student

Admin

Authenticated

The screenshot shows the Strapi admin interface for a user profile. On the left, there's a form field for 'Email\*' containing 'student1@strapi.com'. Below it is a 'Confirmed' section with a switch button set to 'ON'. On the right, there's an 'INFORMATION' panel showing 'Last update 5 seconds ago' and a 'By' section. A red box highlights the 'RELATION' section, which contains a 'Role' dropdown set to 'Student' with an 'Edit the model' button next to it. Below this are three buttons: 'Configure the view', 'Edit the model' (which is also highlighted by a red box), and 'Delete this entry'.

```
~/code/nyala/Building-APIs-with-Strapi ➜ chapter_7 ± yarn strapi generate policy
yarn run v1.22.17
$ strapi generate policy
? Policy name is-manager
? Where do you want to add this policy? Add policy to an existing API
? Which API is this for? tutorial
✓  ++ /api/tutorial/policies/is-manager.js
✨ Done in 7.82s.
```

You, a minute ago | 1 author (You)

```
'use strict';

/* You, a week ago • Chapter 3
 * tutorial router.
 */

const { createCoreRouter } = require('@strapi/strapi').factories;

module.exports = createCoreRouter('api::tutorial.tutorial', {
  except: ['find'],
  config: {
    update: {
      policies: ['is-manager'],
    },
    delete: {
      policies: ['is-manager'],
    },
  },
});
```

To access the server ⚡, go to:  
<http://localhost:1337>

```
[2021-12-21 08:30:47.895] info: In is-manager policy.
[2021-12-21 08:30:47.899] http: DELETE /api/tutorials/1000 (21 ms) 404
```

**DELETE** http://localhost:1337/api/tutorials/1 **Send**

Params Authorization **Bearer Token** Headers (9) Body **Pre-request Script** Tests Settings Cookies

Type Bearer Token Token eyJhbGciOiJIUzI1NilsInR5cCI6IkpXVCJ9.ey...

The authorization header will be automatically generated when you send the request.  
[Learn more about authorization ↗](#)

Body Cookies Headers (15) Test Results Status: 403 Forbidden Time: 12 ms Size: 888 B Save Response

Pretty Raw Preview Visualize JSON

```
1 {  
2   "data": null,  
3   "error": {  
4     "status": 403,  
5     "name": "ForbiddenError",  
6     "message": "Policies failed.",  
7     "details": {}  
8   }  
9 }
```

- LIFECYCLE HOOKS
- INTRODUCTION TO STRAPI

Manager DETAILS

educator1 X ▾

>Edit the model

Configure the view

Delete this entry



Content Manager

PLUGINS

Content-Type Builder

Media Library

GENERAL

Plugins

Marketplace

Settings

## Settings

### GLOBAL SETTINGS

- Application
- API Tokens
- Internationalization
- Media Library
- Webhooks

### ADMINISTRATION PANEL

- Roles
- Users

### EMAIL PLUGIN

- Settings

### USERS & PERMISSIONS PLUGIN

- Roles
- Providers
- Email templates
- Advanced settings

## Providers

NAME	STATUS	
auth0	Disabled	
cas	Disabled	
aws cognito	Disabled	
discord	Disabled	
email	Enabled	
facebook	Disabled	
github	Disabled	
google	Disabled	
instagram	Disabled	
linkedin	Disabled	
microsoft	Disabled	
reddit	Disabled	
twitch	Disabled	



# Chapter 08: Using and Building Plugins

The screenshot shows the Strapi Dashboard interface. On the left, there's a sidebar with various links: Content Manager, Content-Type Builder, Media Library, and Settings. The 'Plugins' link is highlighted with a purple background. The main content area is titled 'Plugins' and contains a table listing installed plugins:

NAME	DESCRIPTION
Content Manager	Quick way to see, edit and delete the data in your database.
Content Type Builder	Modelize the data structure of your API. Create new fields and relations in just a minute. The files are automatically created and updated in your project.
Email	Configure your application to send emails.
Media Library	Media file management.
Internationalization	This plugin enables to create, to read and to update content in different languages, both from the Admin Panel and from the API.
Roles & Permissions	Protect your API with a full authentication process based on JWT. This plugin comes also with an ACL strategy that allows you to manage the permissions between the groups of users.

The screenshot shows the Strapi Marketplace - Plugins page. The sidebar includes Collection Types (Classrooms, Tutorials, Users), Single Types (Info), and Plugins (Content-Type Builder, Media Library). The main content area is titled 'Marketplace - Plugins' and displays several available plugins:

<b>GRAPHQL</b> Adds GraphQL endpoint with default API method  ✓ Compatible with your app <a href="#">Download</a>	<b>EMAIL</b> Send emails.  Already installed	<b>DOCUMENTATION</b> Create an OpenAPI Document and visualize your API with SWAGGER UI.  ✓ Compatible with your app <a href="#">Download</a>	<b>CONTENT TYPE BUILDER</b> Modelize the data structure of your API. Create new fields and relations in just a minute. The files are automatically created and updated in your project.  Already installed
<b>ROLES &amp; PERMISSIONS</b> Protect your API with a full authentication process based on JWT. This plugin comes also with an ACL strategy that allows you to manage the permissions between the groups of users.  Already installed	<b>CONTENT MANAGER</b> Quick way to see, edit and delete the data in your database.  Already installed	<b>MEDIA LIBRARY</b> Media file management.  Already installed	<b>INTERNATIONALIZATION</b> This plugin enables to create, to read and to update content in different languages, both from the Admin Panel and from the API.  Already installed

```
x strapi-lms main + yarn strapi install documentation
yarn run v1.16.0
$ strapi install documentation
✓ Installing dependencies
✓ Rebuilding admin UI
✨ Done in 91.39s.
```

The screenshot shows the Strapi Dashboard interface. On the left, there's a sidebar with various links: Strapi Dashboard (Workplace), Content Manager, PLUGINS (Content-Type Builder, Media Library), Documentation (selected), and GENERAL (Plugins, Marketplace, Settings). The main content area is titled "Documentation" and sub-titled "Configure the documentation plugin". It shows a table with one row:

VERSION	LAST GENERATED	Actions
1.0.0	2021-12-24T08:49:10.839Z	<a href="#">View</a> <a href="#">Edit</a>

On the far right of the dashboard header, there's a blue button labeled "Open documentation".



Swagger  
Supported by SMARTBEAR

Explore

# DOCUMENTATION

1.0.0

OAS3

[Terms of service](#)

[TEAM - Website](#)

[Send email to TEAM](#)

[Apache 2.0](#)

[Find out more](#)

Servers

[http://localhost:1337/api - Development server](#) ▾

Authorize

## Classroom

GET

/classrooms



POST

/classrooms



GET

/classrooms/{id}



PUT

/classrooms/{id}



DELETE

/classrooms/{id}



## Info

GET

/info



PUT

/info



DELETE

/info



tutorials x +

PRETTIFY HISTORY http://localhost:1337/graphql COPY CURL

```
1 ▼ query{  
2   ▼ tutorials{  
3     ▼ data{  
4       id  
5       ▼ attributes{  
6         title  
7         type  
8         classroom{  
9           ▼ data{  
10          attributes{  
11            name  
12          }  
13        }  
14      }  
15    }  
16  }  
17 }  
18 }
```

▼ {  
 ▼ "data": {  
 ▼ "tutorials": {  
 ▼ "data": [  
 {  
 "id": "3",  
 "attributes": {  
 "title": "Content types in Strapi",  
 "type": "text",  
 "classroom": {  
 "data": {  
 "attributes": {  
 "name": "Strapi 101"  
 }  
 }  
 }  
 }  
 },  
 {  
 "id": "8",  
 "attributes": {  
 "title": "Authentication in Strapi",  
 "type": "text",  
 "classroom": {  
 "data": {  
 "attributes": {  
 "name": "Strapi 101"  
 }  
 }  
 }  
 }  
 }  
 ]  
 }  
 }  
}

▶

QUERY VARIABLES HTTP HEADERS TRACING QUERY PLA

The screenshot shows a GraphQL API documentation interface. On the left, there's a sidebar with buttons for 'DOCS' (highlighted in green) and 'SCHEMA'. The main area has a search bar at the top with the query 'createTutorial'. Below the search bar, a mutation is listed: `Mutation.createTutorial(data: TutorialInput!): TutorialEntityResponse`. To the right of this mutation, there are two sections: 'TYPE DETAILS' and 'ARGUMENTS', each with a corresponding code snippet. A large button labeled '▶' is positioned between the mutation and the 'TYPE DETAILS' section.

createTutorial(  
  data: TutorialInput!  
): TutorialEntityResponse

Mutation.createTutorial(  
  data: TutorialInput!  
): TutorialEntityResponse

▶

TYPE DETAILS

type TutorialEntityResponse {  
  data: TutorialEntity  
}

▶

ARGUMENTS

data: TutorialInput!

▶

```
1 # Write your query or mutation here
2 ▶ mutation createTutorial {
3   createTutorial(data:{ title: "GraphQL in Strapi", slug:"graphql-strapi", type:"text", classroom:1}){
4     data{
5       id
6       attributes{
7         title
8       }
9     }
10   }
11 }
```

QUERY VARIABLES | HTTP HEADERS (1)

```
1 { "Authorization": "Bearer eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJzdWIiOiIxMjM0NTY3ODkwIiwibmFtZSI6Ik
```

## Settings

### GLOBAL SETTINGS

- Overview
- API Tokens
- Documentation
- Internationalization
- Media Library
- Webhooks

### ADMINISTRATION PANEL

- Roles
- Users

### EMAIL PLUGIN

- Configuration

### USERS & PERMISSIONS PLUGIN

- Roles
- Providers
- Email templates
- Advanced settings

# Configuration

Test the settings for the Email plugin

## Configuration

The plugin is configured through the `./config/plugins.js` file, checkout this [link](#) for the documentation.

Default sender email

Strapi <no-reply@strapi.io>

Default response email

ex: Strapi <example@example.com>

Email provider

sendmail

## Test email delivery

Recipient email

ex: developer@example.com

 Send test email



strapi-provider-email-

Search

Sign Up

Sign In

89 packages found

1 2 3 ... 5 »

Sort Packages

Optimal

**@strapi/provider-email-mailgun**

Mailgun provider for strapi email plugin

email strapi mailgun

p -  
q -  
m -

Popularity

 alexandrebodyn published 4.0.2 • 2 days ago

Quality

**strapi-provider-email-sendmail**

Sendmail provider for strapi email

email strapi

p -  
q -  
m -

 alexandrebodyn published 3.6.8 • 4 months ago

Maintenance

**@strapi/provider-email-sendmail**

Sendmail provider for strapi email

email strapi

p -  
q -  
m -

 alexandrebodyn published 4.0.2 • 2 days ago

**strapi-provider-email-sendgrid**

Sendgrid provider for strapi email

email strapi sendgrid

p -  
q -  
m -

 alexandrebodyn published 3.6.8 • 4 months ago



## Strapi Dashboard

Workplace



Content Manager

### PLUGINS



Content-Type Builder



Media Library



Lms



Documentation

### GENERAL



Plugins

# Welcome

We hope  
your fee

[SEE MORE](#)



```
1 ↴ {  
2   "name": "lms",  
3   "version": "0.0.0",  
4   "description": "A strapi plugin to help manage the LMS system",  
5   "strapi": {  
6     "name": "LMS Dashboard",  
7     "description": "Dashboard for the LMS system",  
8     "kind": "plugin"  
9   },  
10  "dependencies": {}},
```

 **Strapi Dashboard**  
Workplace

 Content Manager

**PLUGINS**

 Content-Type Builder

 Media Library

 LMS Dashboard

 Documentation

**GENERAL**

 Plugins

```
∨ plugins/lms
  > admin
  > server
    package.json
    README.md
    strapi-admin.js
    strapi-server.js
```



## Strapi Dashboard

Workplace

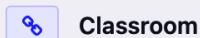
LMS Dashboard  
Dashboard for the LMS system  
This is where our plugin will live...



### PLUGINS



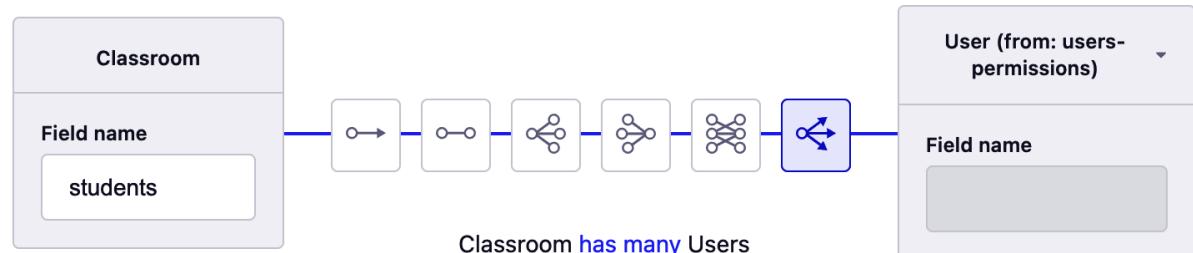
### GENERAL



### Add new Relation field

BASE SETTINGS

ADVANCED SETTINGS



Cancel

+ Add another field

Finish

● AUTHENTICATION IN STRAPI

Manager DETAILS

test X

Students (2)

Select

STUDENT1 -

STUDENT2 -

This screenshot shows the Strapi Manager interface. At the top, there's a header with the title 'AUTHENTICATION IN STRAPI'. Below it, a 'Manager' section shows a user named 'test'. To the right, a 'DETAILS' button is visible. The main content area displays a list titled 'Students (2)'. Inside this list, there's a dropdown menu labeled 'Select'. Below the dropdown, two student entries are listed: 'STUDENT1' and 'STUDENT2', each accompanied by a delete icon ('-'). A red box highlights the 'Students (2)' section.

Settings ◀ BACK ✓ Save

GLOBAL SETTINGS

- Overview
- **API Tokens**
- Documentation
- Internationalization
- Media Library
- Webhooks

ADMINISTRATION PANEL

- Roles
- Users

EMAIL PLUGIN

Create API Token

Details

Name: lms token

Description: LMS Plugin token

Token type: Read-only

This screenshot shows the 'Create API Token' form within the Strapi Settings panel. On the left, a sidebar lists various settings categories like Global Settings, Administration Panel, and Email Plugin. The 'API Tokens' option is currently selected. The main form has a title 'Create API Token' with a 'Save' button. It contains a 'Details' section with fields for 'Name' (set to 'lms token') and 'Description' (set to 'LMS Plugin token'). Below that is a 'Token type' dropdown set to 'Read-only'.



Strapi Dashboard  
Workplace



Content Manager

PLUGINS



Content-Type Builder



Media Library



LMS Dashboard



Documentation

GENERAL



Plugins



Marketplace



Settings

List of classes with enrollments

Strapi 101

Introduction to Strapi

```
# name email
1student1student1@strapi.com
2student2student2@strapi.com
```

classroom\_1

Description of the classroom classroom\_1

```
#nameemail
```

classroom\_2

Description of the classroom classroom\_2

```
#nameemail
```

classroom\_3

Description of the classroom classroom\_3

```
#nameemail
```

classroom\_4

Description of the classroom classroom\_4

```
#nameemail
```

classroom\_5

Description of the classroom classroom\_5

```
#nameemail
```

classroom\_6

Description of the classroom classroom\_6



Content Manager

PLUGINS

Content-Type Builder

Media Library

LMS Dashboard

Documentation

GENERAL

Plugins

Marketplace

Settings

## List of classes with enrollments

### Strapi 101

Introduction to Strapi

#	Name	Email
1	student1	student1@strapi.com
2	student2	student2@strapi.com

### classroom\_1

Description of the classroom classroom\_1

#	Name	Email

### classroom\_2

Description of the classroom classroom\_2

#	Name	Email

## Chapter 09: Production-Ready Application

```
[2021-10-24T21:28:24.848Z] info The server is restarting  
[2021-10-24T21:28:26.862Z] info Hello World
```

Project information	
Time	Mon Oct 25 2021 08:28:27 GMT+1100

```
x ~/code/nyala/Building-APIs-with-Strapi ✘ main ± yarn develop  
yarn run v1.22.10  
$ strapi develop  
[2021-10-24T22:01:28.114Z] debug Created role Admin
```

Project information	
Time	Mon Oct 25 2021 09:01:28 GMT+1100 (Australian E...

[← BACK](#)

# Admin

App admin role

## Role details

Name

Admin

Description

App admin rol

## Permissions

Only actions bound by a route are listed below.

### Classroom

Define all allowed actions for the api::classroom plugin.

CLASSROOM

Select all

create

delete

find

findOne

findTutorials

update

### Info

Define all allowed actions for the api::info plugin.

AWS Services ▾ Search for services, features, marketplace

## General configuration

Bucket name

Bucket name must be unique and must not contain spaces or uppercase letters. [See rules for bucket naming](#)

AWS Region

**Copy settings from existing bucket - optional**

Only the bucket settings in the following configuration are copied.

[Choose bucket](#)

## Block Public Access settings for this bucket

Public access is granted to buckets and objects through access control lists (ACLs), bucket policies, access point policies, or all. In order to ensure that public access to this bucket and its objects is blocked, turn on Block all public access. These settings apply only to this bucket and its access points. AWS recommends that you turn on Block all public access, but before applying any of these settings, ensure that your applications will work correctly without public access. If you require some level of public access to this bucket or objects within, you can customize the individual settings below to suit your specific storage use cases. [Learn more](#)

**Block all public access**

Turning this setting on is the same as turning on all four settings below. Each of the following settings are independent of one another.

**Block public access to buckets and objects granted through new access control lists (ACLs)**

S3 will block public access permissions applied to newly added buckets or objects, and prevent the creation of new public access ACLs for existing buckets and objects. This setting doesn't change any existing permissions that allow public access to S3 resources using ACLs.

**Block public access to buckets and objects granted through any access control lists (ACLs)**

S3 will ignore all ACLs that grant public access to buckets and objects.

**Block public access to buckets and objects granted through new public bucket or access point policies**

S3 will block new bucket and access point policies that grant public access to buckets and objects. This setting doesn't change any existing policies that allow public access to S3 resources.

**Block public and cross-account access to buckets and objects through any public bucket or access point policies**

S3 will ignore public and cross-account access for buckets or access points with policies that grant public access to buckets and

Amazon S3 > building-api-with-strapi-data

## building-api-with-strapi-data Info

**Objects** | Properties | Permissions | Metrics | Management | Access Points

**Objects (5)**

Objects are the fundamental entities stored in Amazon S3. You can use [Amazon S3 inventory](#) to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. [Learn more](#)

<input type="checkbox"/>	Name	Type	Last modified	Size	Storage class
<input type="checkbox"/>	Book_Time_line_d2147943b6.png	png	October 26, 2021, 09:22:55 (UTC+11:00)	427.5 KB	Standard
<input type="checkbox"/>	large_Book_Time_line_d2147943b6.png	png	October 26, 2021, 09:22:55 (UTC+11:00)	175.3 KB	Standard
<input type="checkbox"/>	medium_Book_Time_line_d2147943b6.png	png	October 26, 2021, 09:22:56 (UTC+11:00)	115.0 KB	Standard
<input type="checkbox"/>	small_Book_Time_line_d2147943b6.png	png	October 26, 2021, 09:22:56 (UTC+11:00)	62.5 KB	Standard
<input type="checkbox"/>	thumbnail_Book_Time_line_d2147943b6.png	png	October 26, 2021, 09:22:55 (UTC+11:00)	10.3 KB	Standard

Key	Description	Sample Value
client	The name of the client to use. Possible values are <code>postgres</code> , <code>mysql</code> , or <code>sqlite</code> .	<code>postgres</code>
- port - database - user - password	Database connection string values.	The values depend on the database configuration
ssl	A flag to indicate whether to use <b>Secure Sockets Layer (SSL)</b> when connecting to the database.	<code>False</code>

## Chapter 10: Deploying Strapi

```
~/code/nyala/Building-APIs-with-Strapi ➜ main ➔ heroku login  
heroku: Press any key to open up the browser to login or q to exit:  
Opening browser to https://cli-auth.herokuapp.com/auth/cli/browser/  
  
Logging in... done  
Logged in as com
```

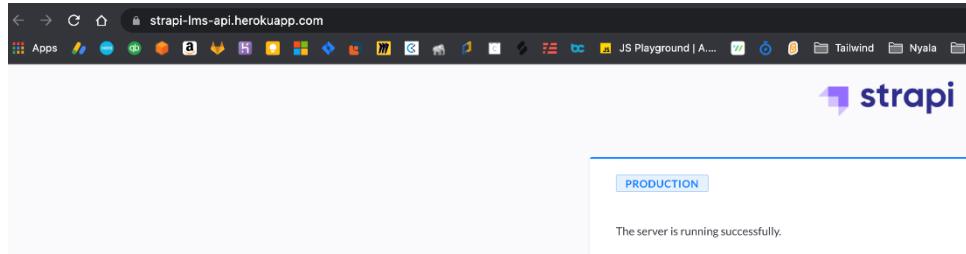
```
x ➜ ~/code/nyala/Building-APIs-with-Strapi ➜ main ➔ heroku create strapi-lms-api --region eu  
Creating strapi-lms-api... done, region is eu  
https://strapi-lms-api.herokuapp.com/ | https://git.heroku.com/strapi-lms-api.git
```

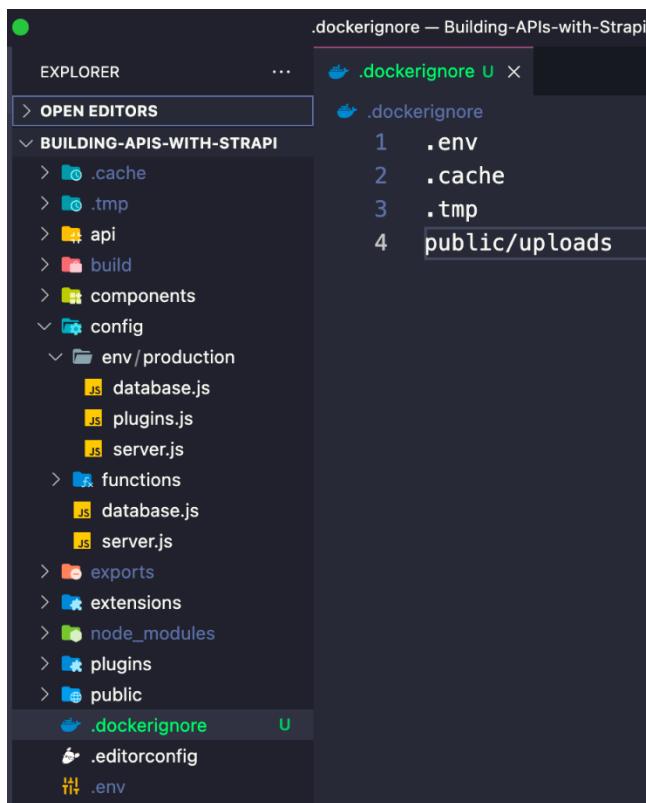
```
~/code/nyala/Building-APIs-with-Strapi ➜ main ➔ heroku addons:create heroku-postgresql:hobby-dev  
Creating heroku-postgresql:hobby-dev on strapi-lms-api... free  
Database has been created and is available  
! This database is empty. If upgrading, you can transfer  
! data from another database with pg:copy  
Created postgresql-aerodynamic-76170 as DATABASE_URL  
Use heroku addons:docs heroku-postgresql to view documentation
```

```
~/code/nyala/Building-APIs-with-Strapi ➜ main ➔ heroku config:set API_HEROKU_URL=https://strapi-lms-api.herokuapp.com/  
Setting API_HEROKU_URL and restarting strapi-lms-api... done, v6  
API_HEROKU_URL: https://strapi-lms-api.herokuapp.com/
```

```
~/code/nyala/Building-APIs-with-Strapi ➜ main ➔ heroku config  
==== strapi-lms-api Config Vars  
API_HEROKU_URL: https://strapi-lms-api.herokuapp.com/  
AWS_ACCESS_KEY_ID:  
AWS_ACCESS_SECRET:  
AWS_BUCKET: building-api-with-strapi-data  
AWS_REGION: ap-southeast-2  
DATABASE_URL:  
MAILGUN_API_KEY:  
MAILGUN_DOMAIN:  
NODE_ENV: production
```

```
remote:      warning Ignored scripts due to flag.
remote:      Done in 13.75s.
remote:
remote: -----> Caching build
remote:      - yarn cache
remote:
remote: -----> Build succeeded!
remote: !   Unmet dependencies don't fail yarn install but may cause runtime issues
remote:     https://github.com/npm/npm/issues/7494
remote:
remote: -----> Discovering process types
remote:     Procfile declares types      -> (none)
remote:     Default types for buildpack -> web
remote:
remote: -----> Compressing...
remote:      Done: 157.4M
remote: -----> Launching...
remote:      Released v19
remote:      https://strapi-lms-api.herokuapp.com/ deployed to Heroku
remote:
remote: Verifying deploy... done.
To https://git.heroku.com/strapi-lms-api.git
 + 3cfcce6...d861f38 main -> main (forced update)
~/code/nyala/Building-APIs-with-Strapi ➜ main ➔ █
```





```
~/code/nyala/Building-APIs-with-Strapi ⚡ main ± docker build -t strapi-lms .
[+] Building 3.9s (19/19) FINISHED
=> [internal] load build definition from Dockerfile
=> => transferring dockerfile: 37B
=> [internal] load .dockerignore
=> => transferring context: 348
=> [internal] load metadata for docker.io/strapi/base:14
=> [auth] strapi/base:pull token for registry-1.docker.io
=> [ 1/13] FROM docker.io/strapi/base:14@sha256:ef1726dfb73a31f0de01082fefc8d430a6a2a571187d95841bf0a3e3254c81b8
=> [internal] load build context
=> => transferring context: 7.60kB
=> CACHED [ 2/13] WORKDIR /app
=> CACHED [ 3/13] COPY package.json .
=> CACHED [ 4/13] COPY yarn.lock .
=> CACHED [ 5/13] COPY favicon.ico .
=> CACHED [ 6/13] COPY api/ api/
=> CACHED [ 7/13] COPY components/ components/
=> CACHED [ 8/13] COPY config/ config/
=> CACHED [ 9/13] COPY extensions/ extensions/
=> CACHED [10/13] COPY plugins/ plugins/
=> CACHED [11/13] COPY public/robots.txt public/
=> CACHED [12/13] RUN yarn --production --frozen-lockfile
=> CACHED [13/13] RUN yarn build
=> exporting to image
=> => exporting layers
=> => writing image sha256:3203eb5725f7fa4836d494771620745968121d0284449633d809e47e94c0edac
=> => naming to docker.io/library/strapi-lms

Use 'docker scan' to run Snyk tests against images to find vulnerabilities and learn how to fix them
```



Amazon ECR > Repositories > Create repository

## Create repository

### General settings

#### Visibility settings Info

Choose the visibility setting for the repository.

**Private**

Access is managed by IAM and repository policy permissions.

**Public**

Publicly visible and accessible for image pulls.

#### Repository name

Provide a concise name. A developer should be able to identify the repository contents by the name.

3            5.dkr.ecr.ap-southeast-  
2.amazonaws.com/

strapi-lms

10 out of 256 characters maximum (2 minimum). The name must start with a letter and can only contain lowercase letters, numbers, hyphens, underscores, and forward slashes.

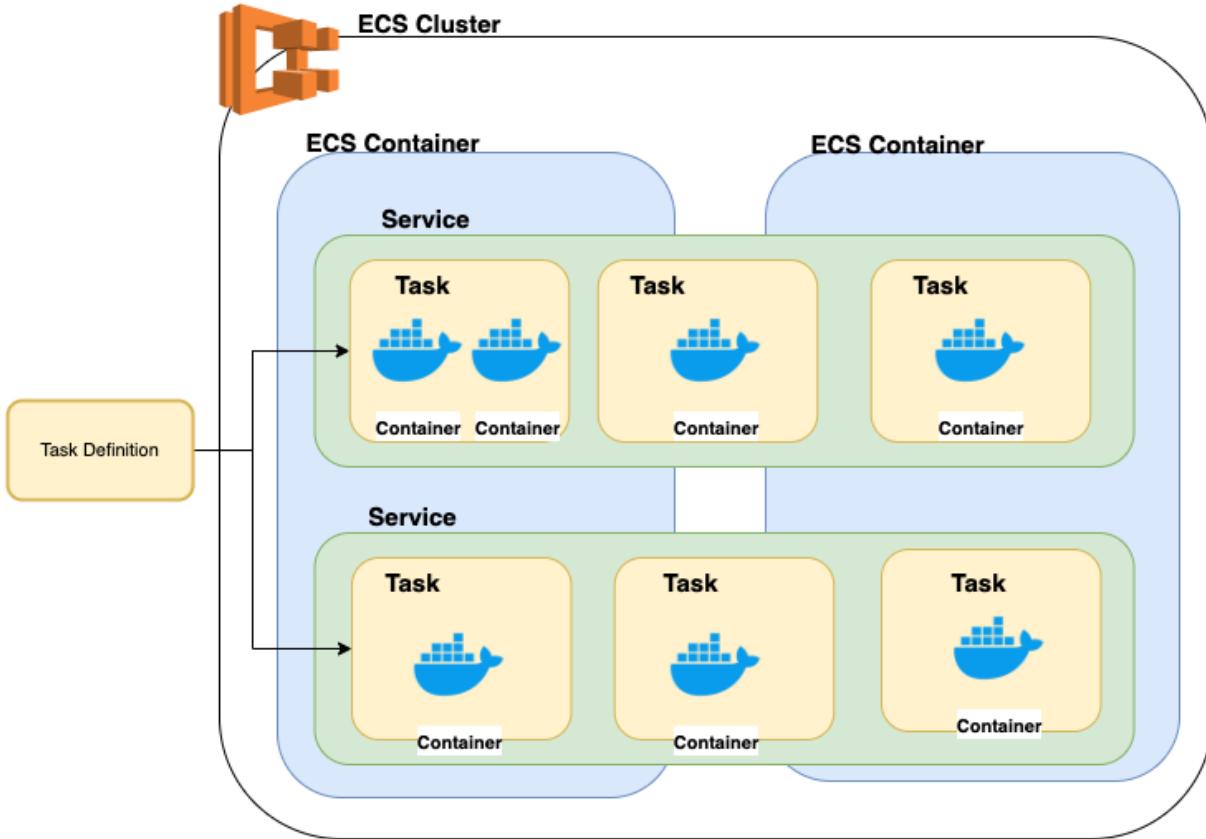
#### Tag immutability Info

Enable tag immutability to prevent image tags from being overwritten by subsequent image pushes using the same tag. Disable tag immutability to allow image tags to be overwritten.

**Disabled**

```
khalid@Khalids-iMac:~/code/nyala/Building-APIs-with-Strapi
~/code/nyala/Building-APIs-with-Strapi ✘ main ± ➔ aws ecr get-login-password --region ap-southeast-2 | docker login --username AWS --password-stdin 3'           5.dkr.ecr.ap-southeast-2.amazonaws.com/strapi-lms
Login Succeeded
```

```
x ✘ ~/code/nyala/Building-APIs-with-Strapi ✘ main ± ➔ docker tag strapi-lms:latest 3           5.dkr.ecr.ap-southeast-2.amazonaws.com/strapi-lms:latest
~/code/nyala/Building-APIs-with-Strapi ✘ main ± ➔ docker push 3           5.dkr.ecr.ap-southeast-2.amazonaws.com/strapi-lms:latest
The push refers to repository [3           5.dkr.ecr.ap-southeast-2.amazonaws.com/strapi-lms]
ca8127bd835c: Pushed
672bf9e15278: Pushed
e47b622ee557: Pushed
38c5f2ffe0a5: Pushed
d181570fea5b: Pushed
bb9e16fb5863: Pushed
8dd06926952d: Pushed
b4b0971e42a6: Pushed
9dfc294d343: Pushed
722fd1e35a45: Pushed
100db43c90f1: Pushed
ffeece9978e9: Pushed
d44b6d1925f6: Pushed
f6d99686b622: Pushed
429965006bfe: Pushed
9b88fe065b35: Pushed
4ca605ea46de: Pushed
601f04850201: Pushed
846bd2f3b216: Pushed
2b3e667f5e92: Pushed
e891be0c59b2: Pushed
latest: digest: sha256:837b895ee47b0f37594302720bb8e26cb47fe8f9415a323c5ca68ce083f4d2ed size: 4719
```



## Create Cluster

[Step 1: Select cluster template](#)

**Step 2: Configure cluster**

### Configure cluster

Cluster name\*  ⓘ

### Networking

Create a new VPC for your cluster to use. A VPC is an isolated portion of the AWS Cloud populated by AWS objects, such as Fargate tasks.

Create a new VPC for this cluster

### Tags

Key	Value
<input type="text" value="Add key"/>	<input type="text" value="Add value"/>

### CloudWatch Container Insights

CloudWatch Container Insights is a monitoring and troubleshooting solution for containerized applications and microservices. It collects, aggregates, and summarizes compute utilization such as CPU, memory, disk, and network; and diagnostic information such as container restart failures to help you isolate issues with your clusters and resolve them quickly. [Learn more](#)

Enable Container Insights

\*Required

[Cancel](#)

[Previous](#)

[Create](#)

A task definition specifies which containers are included in your task and how they interact with each other. You can also specify data volumes for your containers to use. [Learn more](#)

**Task definition name\*** strapi-lms-task-def i

**Requires compatibilities\*** FARGATE

**Task role** None i ↻  
Optional IAM role that tasks can use to make API requests to authorized AWS services. Create an Amazon Elastic Container Service Task Role in the [IAM Console](#) ↗

**Network mode** awsvpc i  
If you choose <default>, ECS will start your container using Docker's default networking mode, which is Bridge on Linux and NAT on Windows. Windows tasks support the <default> and awsvpc network modes.

**Operating system family** Select an operating system... ▼ i

#### Task execution IAM role

---

This role is required by tasks to pull container images and publish container logs to Amazon CloudWatch on your behalf. If you do not have the `ecsTaskExecutionRole` already, we can create one for you.

**Task execution role** Create new role i

## Add container

### ▼ Standard

**Container name\*** strapi-lms-api i

**Image\*** .dkr.ecr.ap-southeast-2.amazonaws.com/strapi-lms:latest i



**Private repository authentication\***  i

**Memory Limits (MiB)** Soft limit ▼ 128 i

**+ Add Hard limit**

Define hard and/or soft memory limits in MiB for your container. Hard and soft limits correspond to the 'memory' and 'memoryReservation' parameters, respectively, in task definitions.

ECS recommends 300-500 MiB as a starting point for web applications.

**Port mappings** Container port Protocol i

1337

tcp ▼



**+ Add port mapping**

### Environment variables

You may also designate AWS Systems Manager Parameter Store keys or ARNs using the 'valueFrom' field. ECS will inject the value into containers at run-time.

Key

MAILGUN_API_KEY	Value	↳ f	×
MAILGUN_DOMAIN	Value	↳ f	×
AWS_REGION	Value	↳ ap-southeast-2	×
AWS_BUCKET	Value	↳ building-api-with-strapi-data	×
DATABASE_URL	Value	↳ postgres://c	×
Add key	Value	Add value	×
Add key	Value	Add value	

### CONTAINER TIMEOUTS

Start timeout i

\* Required

Cancel Add

## Configure service

A service lets you specify how many copies of your task definition to run and maintain in a cluster. You can optionally use an Elastic Load Balancing load balancer to distribute incoming traffic to containers in your service. Amazon ECS maintains that number of tasks and coordinates task scheduling with the load balancer. You can also optionally use Service Auto Scaling to adjust the number of tasks in your service.

**Launch type**  FARGATE [i](#)  
 EC2  
 EXTERNAL  
  
[Switch to capacity provider strategy](#) [i](#)

**Operating system family** Linux [i](#)

**Task Definition** Family strapi-lms-task-def [Enter a value](#)  
Revision 1 (latest) [▼](#)

**Platform version** LATEST [i](#)

**Cluster** strapi-lms [i](#)

**Service name** strapi-lms-service [i](#)

**Service type\*** REPLICA [i](#)

**Number of tasks** 1 [i](#)

**Configure security groups**

A security group is a set of firewall rules that control the traffic for your task. On this page, you can add rules to allow specific traffic to reach your task, or you can choose to use an existing security group. [Learn more](#).

**Assigned security groups**  Create new security group  
 Select existing security group

Security group name\* strapi-lms-sg [i](#)

Description Strapi LMS security group [i](#)

**Inbound rules for security group**

Type	Protocol	Port range	Source
Custom TCP	TCP	1337	Anywhere
0.0.0.0/0, ::/0 <span style="float: right;">×</span>			

[+ Add rule](#)

Details	Tasks	Events	Auto Scaling	Deployments	Metrics	Tags	Logs
Last updated on November 5, 2021 2:57:18 PM (0m ago) <span style="font-size: small;">↻ ⓘ</span>							
Task status: <span style="border: 1px solid #0070C0; padding: 2px;">Running</span> Stopped							
<span style="float: left; border: 1px solid #ccc; padding: 2px 10px; margin-right: 10px;">Filter in this page</span> <span style="float: right;">&lt; 1-1 &gt; Page size <span style="border: 1px solid #ccc; padding: 0 2px;">50</span> ▾</span>							
Task	Task Definition	Last status	Desired status	Group	Launch type	Platform version	
898838e1222146f6921e2bcf72...	strapi-lms-task-def:1	RUNNING	RUNNING	service:strapi-lms-service	FARGATE	1.4.0	

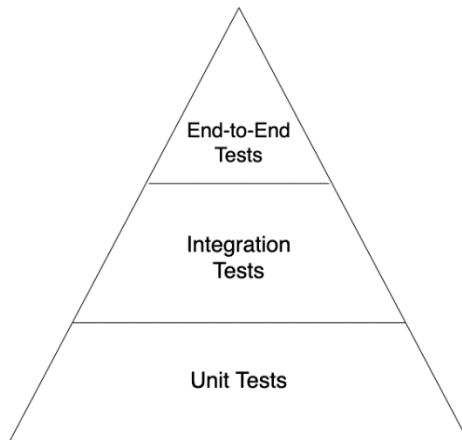
CloudWatch > Log groups > /ecs/strapi-lms-task-def > ecs/strapi-lms-api/898838e1222146f6921e2bcf72e3b3

### Log events

You can use the filter bar below to search for and match terms, phrases, or values in your log events. [Learn more about log events](#)

▶	Timestamp	Message
		No older events at this moment. <a href="#">Retry</a>
▶	2021-11-05T14:57:11.003+11:00	yarn run v1.22.5
▶	2021-11-05T14:57:11.114+11:00	\$ strapi start
▶	2021-11-05T14:58:31.621+11:00	Project information
▶	2021-11-05T14:58:31.635+11:00	Time   Fri Nov 05 2021 03:58:31 GMT+0000 (Coordinated ...
▶	2021-11-05T14:58:31.635+11:00	Launched in   77511 ms
▶	2021-11-05T14:58:31.635+11:00	Environment   production
▶	2021-11-05T14:58:31.635+11:00	Process PID   29
▶	2021-11-05T14:58:31.635+11:00	Version   3.6.1 (node v14.16.0)
▶	2021-11-05T14:58:31.635+11:00	Edition   Community

# Chapter 11: Testing the Strapi API



The screenshot shows a code editor interface with a dark theme. On the left is the Explorer sidebar showing project files like .cache, .tmp, build, config, env/production, database/migrations, node\_modules, public, src, and tests. The tests folder contains an app.test.js file. The main editor area shows the following code:

```
test('Setup is working', () => {
  console.log('Hello from test file');
});
```

Below the editor is a terminal window showing the output of a Jest test run:

```
~/.code/nyala/Building-APIs-with-Strapi$ yarn test
yarn run v1.22.17
$ jest --detectOpenHandles
console.log
  Hello from test file

  at Object.<anonymous> (tests/app.test.js:2:11)

PASS  tests/app.test.js
  ✓ Setup is working (17 ms)

Test Suites: 1 passed, 1 total
Tests:    1 passed, 1 total
Snapshots: 0 total
Time:    0.409 s
Ran all test suites.
+ Done in 1.78s.
```

The screenshot shows a development environment in VS Code with the following details:

- EXPLORER** pane on the left displays the project structure:
  - BUILDING-APIS-WITH-STRAPI** folder contains .cache, .tmp (with data.db and test.db), build, config, env (production), test (with database.js, admin.js, api.js, middlewares.js, plugins.js, server.js), database/migrations, node\_modules, public, and src (with admin, api, components, extensions, documentation, email, upload, users-permissions, .gitkeep, plugins, index.js).
  - tests** folder contains app.test.js.
- EDITOR** pane shows the content of **app.test.js**:

```
const { setupStrapi } = require('./helpers/strapi');

/** this code is called once before any test is called */
beforeAll(async () => {
  await setupStrapi();
});

test('strapi is defined', () => {
  expect(strapi).toBeDefined();
});
```
- TERMINAL** pane at the bottom shows the command line output:

```
~/code/nyala/Building-APIs-with-Strapi $ main ± yarn test
yarn run v1.22.17
$ jest --forceExit --detectOpenHandles
PASS  tests/app.test.js
  ✓ strapi is defined (2 ms)

Test Suites: 1 passed, 1 total
Tests:       1 passed, 1 total
Snapshots:  0 total
Time:        3.927 s, estimated 5 s
Ran all test suites.
± Done in 6.96s.
```

```
~/code/nyala/Building-APIs-with-Strapi ➜ main ± yarn test
yarn run v1.22.17
$ jest --forceExit --detectOpenHandles
PASS  tests/classroom.test.js
● Console

  console.log
    [2021-12-28 08:34:20.495] debug: Created role Student

    at Console.log (node_modules/winston/lib/winston/transports/console.js:79:23)

  console.log
    [2021-12-28 08:34:20.504] debug: Created role Teacher

    at Console.log (node_modules/winston/lib/winston/transports/console.js:79:23)

  console.log
    [2021-12-28 08:34:20.511] debug: Created role Admin

    at Console.log (node_modules/winston/lib/winston/transports/console.js:79:23)

PASS  tests/app.test.js

Test Suites: 2 passed, 2 total
Tests:       2 passed, 2 total
Snapshots:   0 total
Time:        6.103 s
Ran all test suites.
✨ Done in 9.27s.
```

```
● classroom controller test > should create new classroom

expected 200 "OK", got 403 "Forbidden"

48 |     .set('Content-Type', 'application/json')
49 |     .send(payload)
> 50 |     .expect(200)
|     ^
51 |     .then(response => {
52 |       const { body } = response;
53 |       expect(body.id).toBeDefined();

at Object.<anonymous> (tests/classroom.test.js:50:8)
-----
at Test.Object.<anonymous>.Test._assertStatus (node_modules/supertest/lib/test.js:304:12)
at node_modules/supertest/lib/test.js:80:15
at Test.Object.<anonymous>.Test._assertFunction (node_modules/supertest/lib/test.js:338:11)
at Test.Object.<anonymous>.Test.assert (node_modules/supertest/lib/test.js:209:21)
at Server.localAssert (node_modules/supertest/lib/test.js:167:12)

PASS  tests/app.test.js

Test Suites: 1 failed, 1 passed, 2 total
Tests:       1 failed, 2 passed, 3 total
Snapshots:   0 total
Time:        7.606 s
Ran all test suites.
error Command failed with exit code 1.
info Visit https://yarnpkg.com/en/docs/cli/run for documentation about this command.
```

# Chapter 12: Appendix - Connecting a React App to Strapi

Strapi LMS

LOGOUT

**Introduction to Strapi**  
An Introduction to Strapi

Tutorials: 4  
Remaining Spots: 3  
Total Spots: 6

**Setup Strapi**  
How to setup and install strapi

A screenshot of a YouTube video player. The video title is "Introduction to Strapi - Headless CMS [مقدمة عن strapi Headless CMS]". Below the title, the Strapi logo is displayed with the text "strapi Headless CMS". A "Watch later" button and a "Share" button are visible in the top right corner. A "Watch on YouTube" button is at the bottom left.

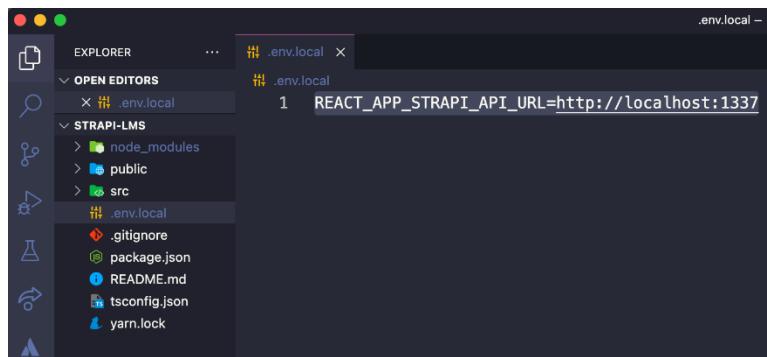
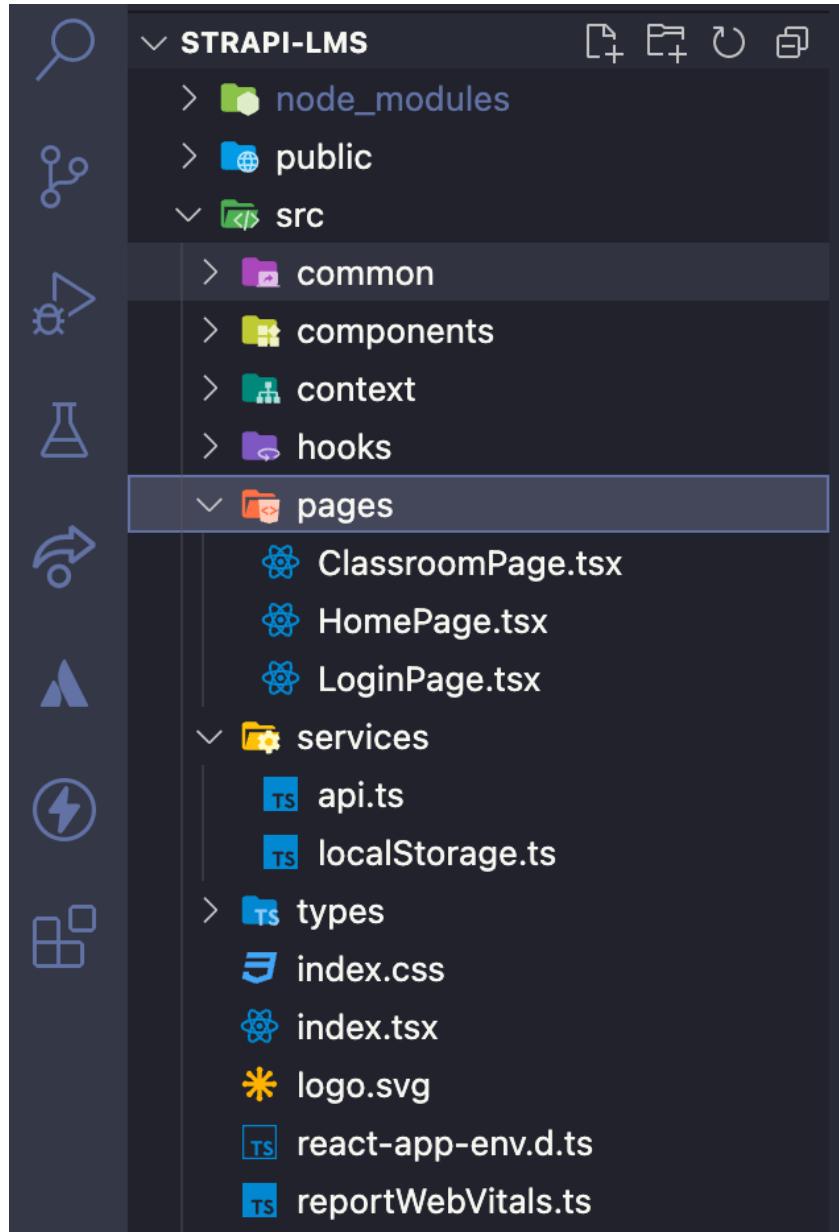
**A What is Strapi**  
Introduction to Strapi. Lorem Ipsum is simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer

**■ Setup Strapi**  
How to setup and install strapi

**■ Strapi Content types**

**A Hands-on**

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