


# Rapport

DEPARTEMENT MATHÉMATIQUE ET INFORMATIQUE

## « Examen TP Frameworks »

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Encadré par :

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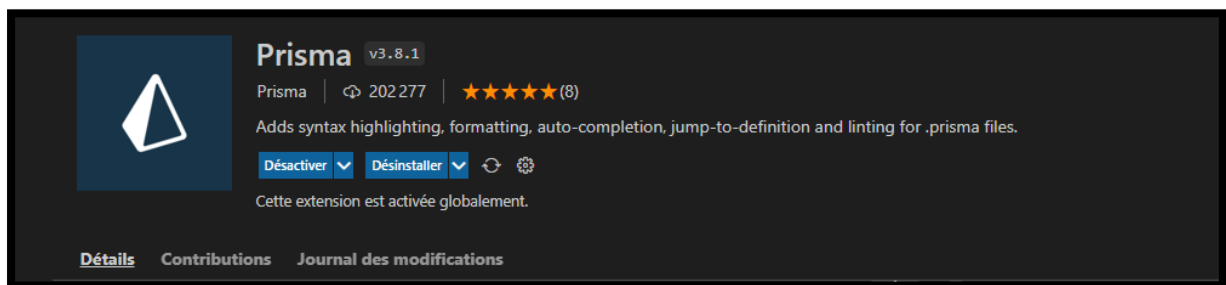
## Création nouveau projet node :

```
PS C:\Users\ELYOUSFI\Desktop\movies> npm init
This utility will walk you through creating a package.json file.
It only covers the most common items, and tries to guess sensible defaults.

See `npm help init` for definitive documentation on these fields
and exactly what they do.

Use `npm install <pkg>` afterwards to install a package and
save it as a dependency in the package.json file.
```

## L'ajout de l'extension prisma :



## Installation de express-generator :

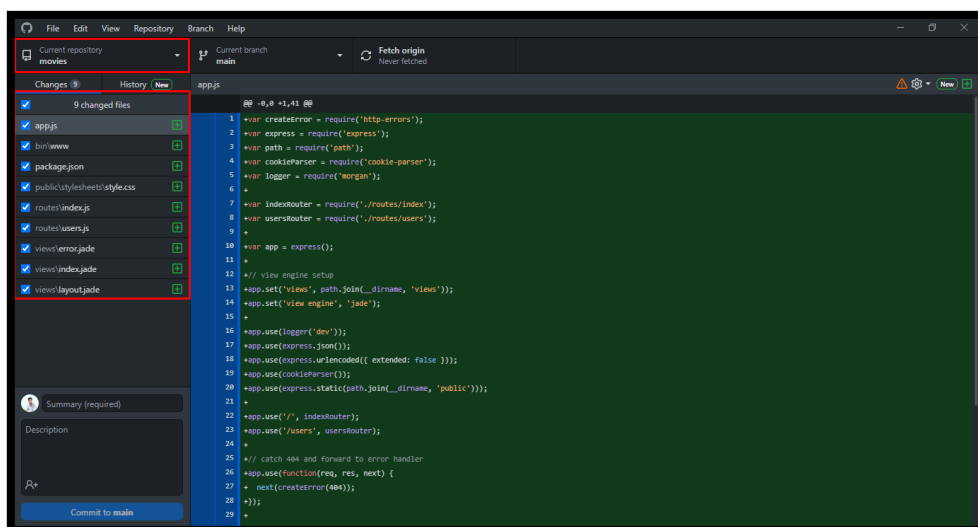
```
Is this OK? (yes)
PS C:\Users\ELYOUSFI\Desktop\movies> npx express-generator .
npx : 10 installé(s) en 3.759s

warning: the default view engine will not be jade in future releases
warning: use '--view=jade' or '--help' for additional options

destination is not empty, continue? [y/N] y

create : public\
create : public\javascripts\
create : public\images\
create : public\stylesheets\
create : public\stylesheets\style.css
create : routes\
```

## Repository dans github :



Mongo db :

```
PS C:\Users\ELYOUSFI> mongo
MongoDB shell version v5.0.5
connecting to: mongodb://127.0.0.1:27017/?compressors=disabled&gssapiServiceName=mongodb
Implicit session: session { "id" : UUID("add33087-a65a-4a79-bc12-f990e5dc059a") }
MongoDB server version: 5.0.5
=====
Warning: the "mongo" shell has been superseded by "mongosh",
which delivers improved usability and compatibility. The "mongo" shell has been deprecated and will be removed in
an upcoming release.
For installation instructions, see
https://docs.mongodb.com/mongodb-shell/install/
=====
---
The server generated these startup warnings when booting:
  2022-01-18T15:59:09.809+01:00: Access control is not enabled for the database. Read and write access to data and configuration is unrestricted
---
```

## A - PROJET EXPRESS (BACKEND)

### 1- Initiation d'un projet Express :

```
PS C:\Users\ELYOUSFI\Desktop\movies> express .

warning: the default view engine will not be jade in future releases
warning: use '--view=jade' or '--help' for additional options

destination is not empty, continue? [y/N] y

create : public\
create : public\javascripts\
create : public\images\
create : public\stylesheets\
create : public\stylesheets\style.css
create : routes\
create : routes\index.js
create : routes\users.js
create : views\
create : views\error.jade
```

### 2- Installation des dependances du projet :

```
PS C:\Users\ELYOUSFI\Desktop\movies> npm i
audited 101 packages in 1.322s
found 4 vulnerabilities (1 low, 1 high, 2 critical)
  run `npm audit fix` to fix them, or `npm audit` for details
```

```
PS C:\Users\ELYOUSFI\Desktop\movies> npm audit fix
up to date in 0.397s
fixed 0 of 4 vulnerabilities in 101 scanned packages
  4 vulnerabilities required manual review and could not be updated
```

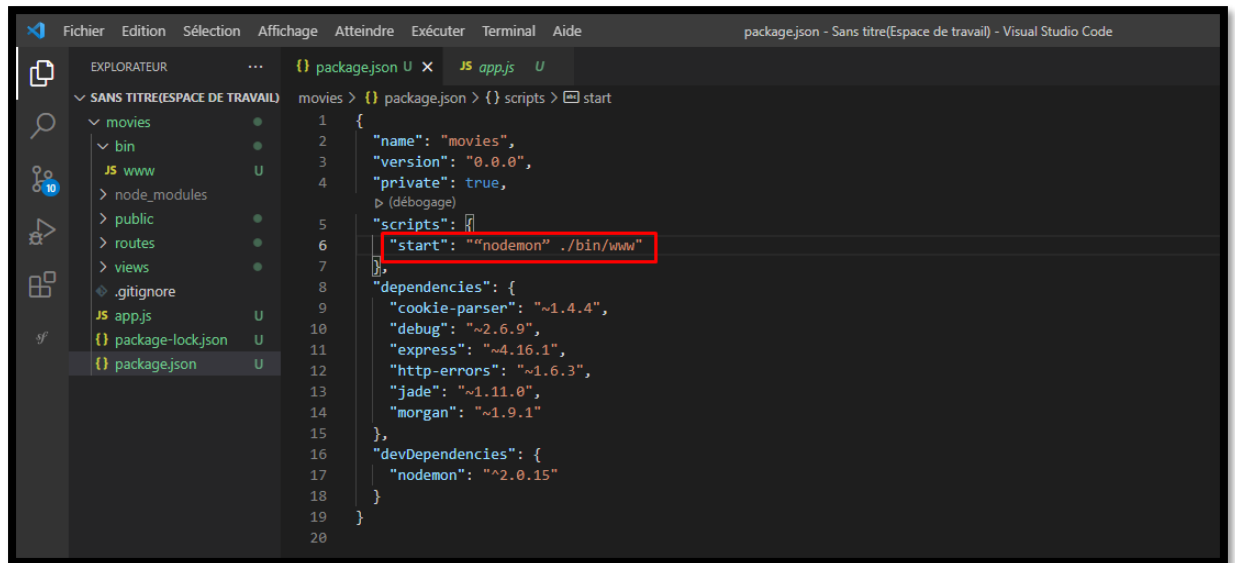
### 3- Installation du package "nodemon" en dépendance de développement :

```
PS C:\Users\ELYOUSFI\Desktop\movies> npm i --save-dev nodemon

> nodemon@2.0.15 postinstall C:\Users\ELYOUSFI\Desktop\movies\node_modules\nodemon
> node bin/postinstall || exit 0

Love nodemon? You can now support the project via the open collective:
> https://opencollective.com/nodemon/donate
```

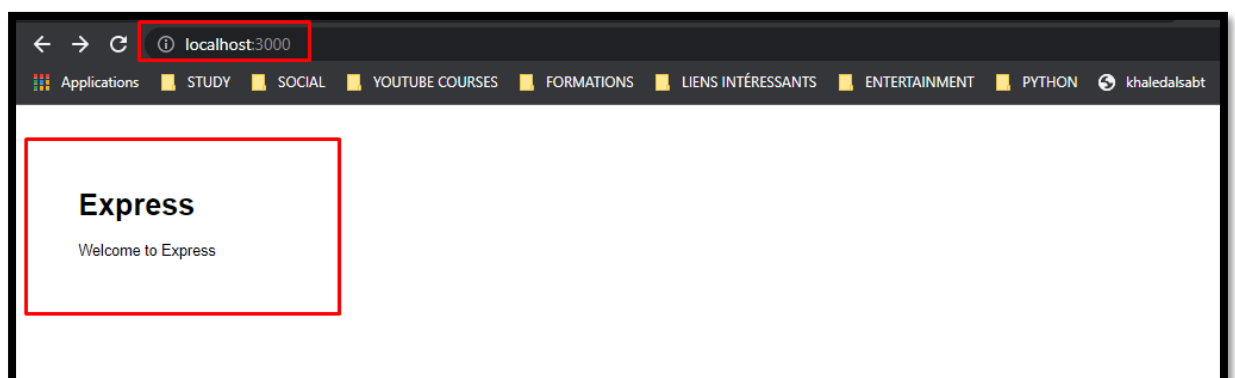
- 4- Modification du script qui permet de démarrer l'application dans "package.json" de façon à utiliser "nodemon" au lieu de "node" :



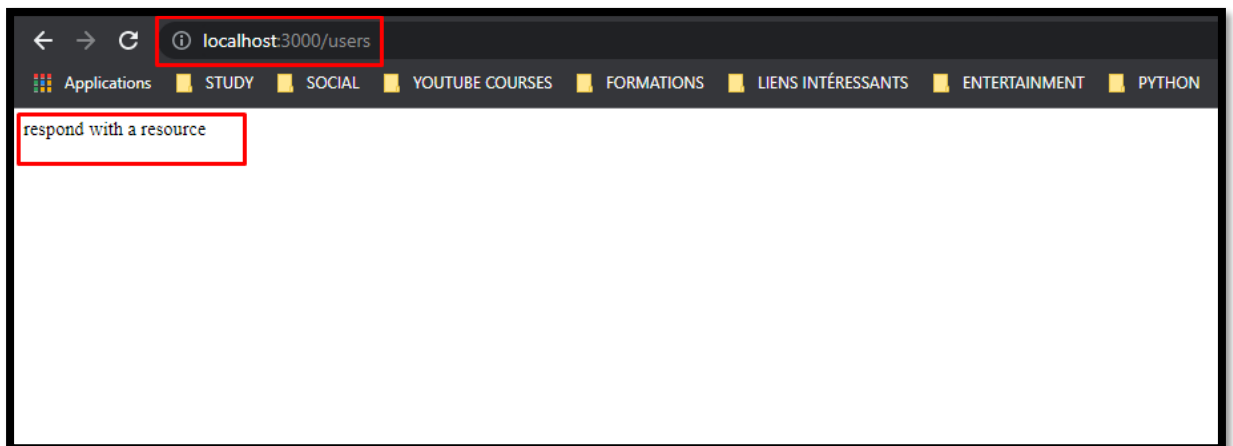
- 5- Démarrage de l'application et vérification d'accès aux deux routes définies dans le dossier "routes" :



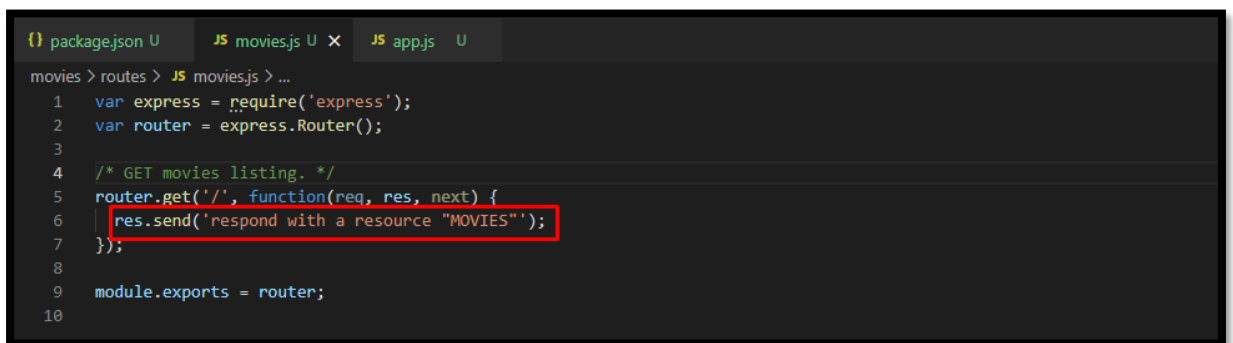
Route "/" :



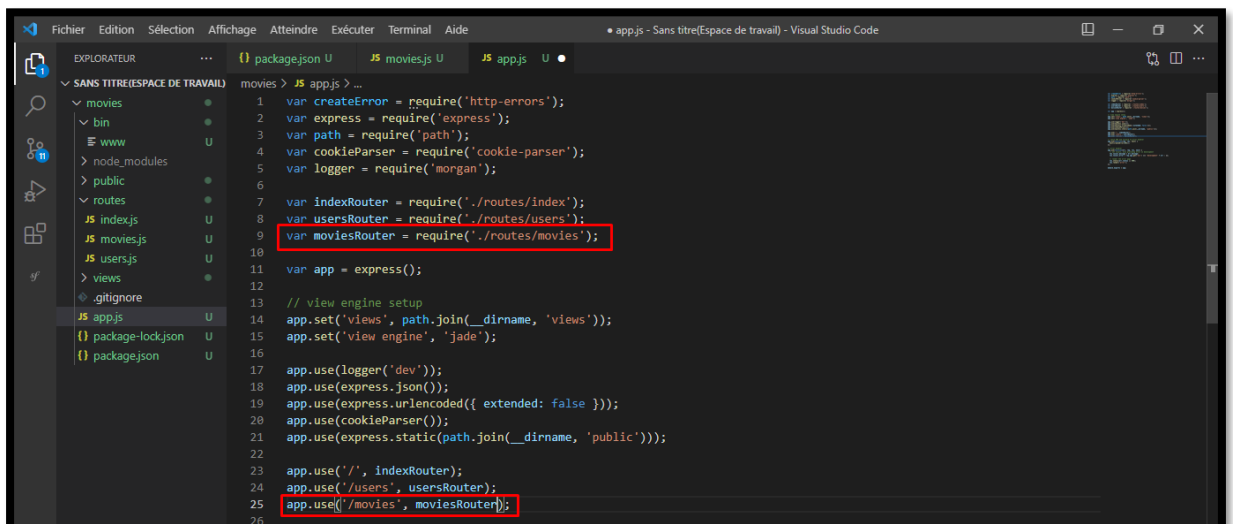
Route “/users” :



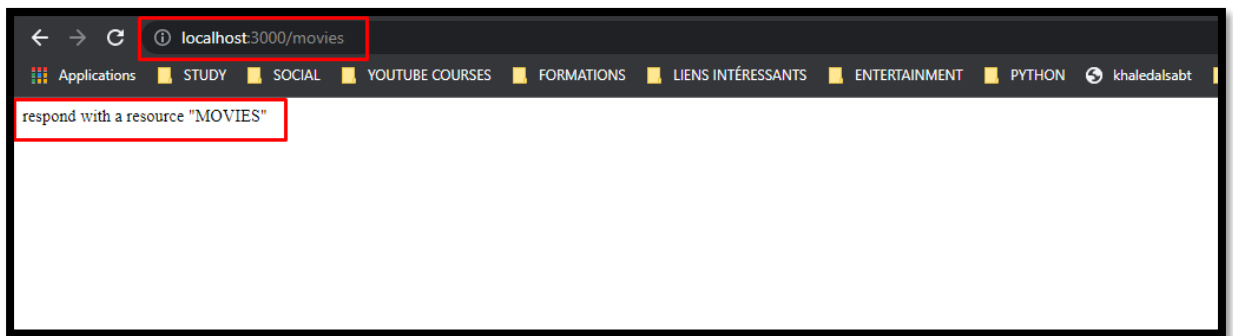
- 6- L'Ajoute de la route dans “./routes/movies.js” qui permet de répondre aux requêtes GET sur le chemin “/movies” :



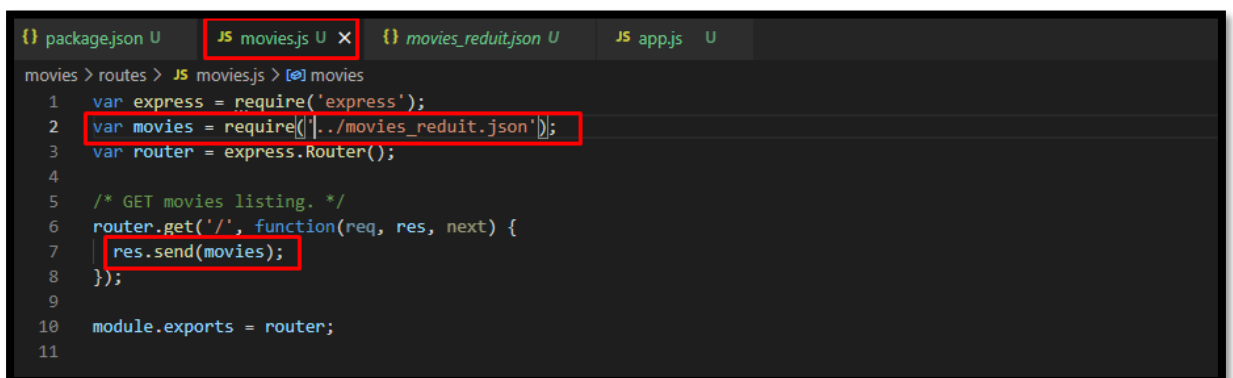
Importation dans app.js :



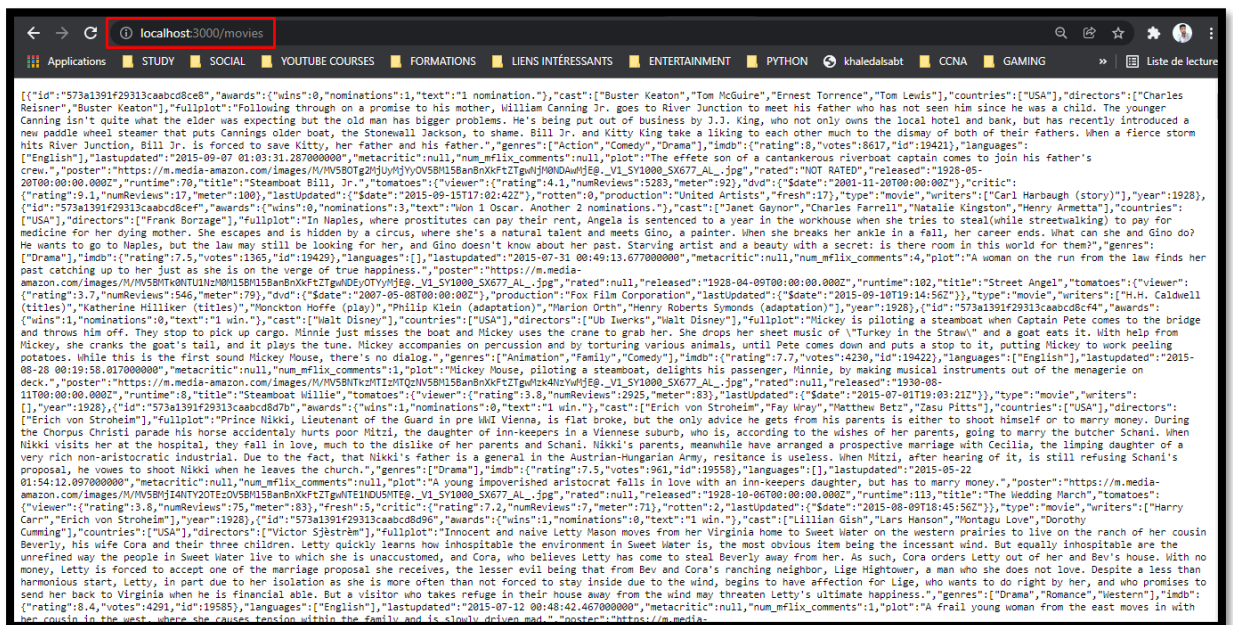
## Teste de la requete dans la route “/movies” :



## 7- Le code qui permet de récupérer tous les films à partir du fichier “movies\_reduit.json” :



## Résultat :

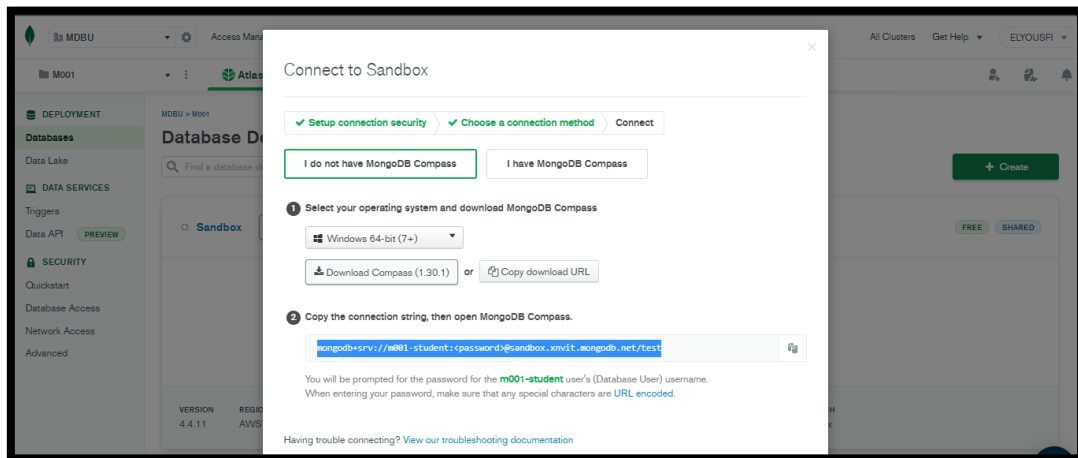


## Magnifique :D

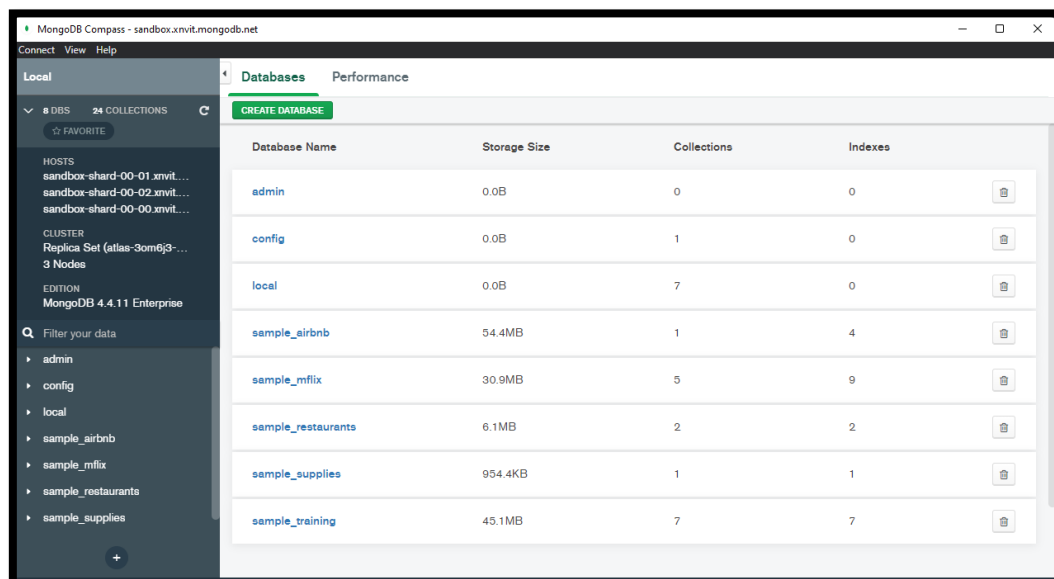
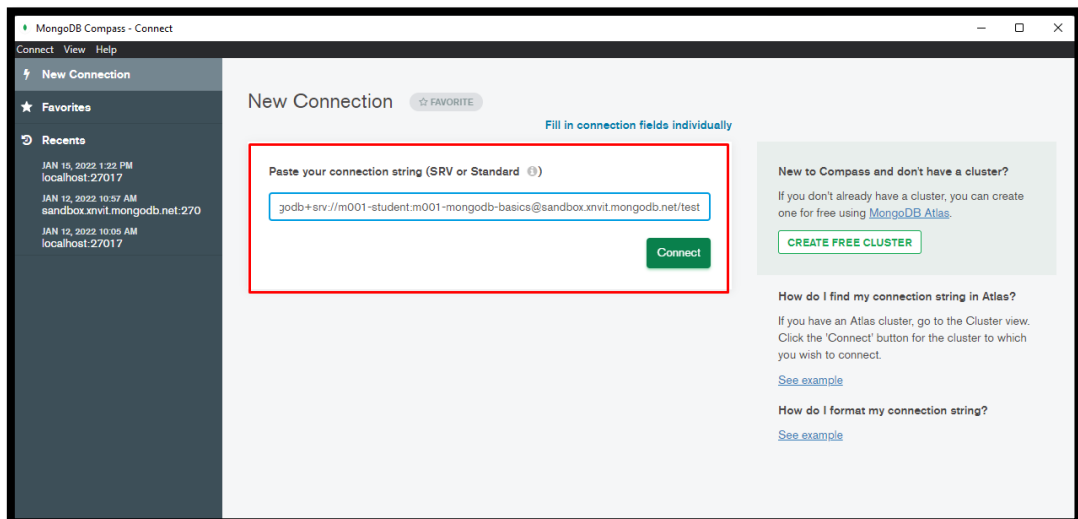
## B - MISE EN PLACE DE MONGODB

1- Utilisation de MongoCompass pour s'y connecter au atlas cluster :

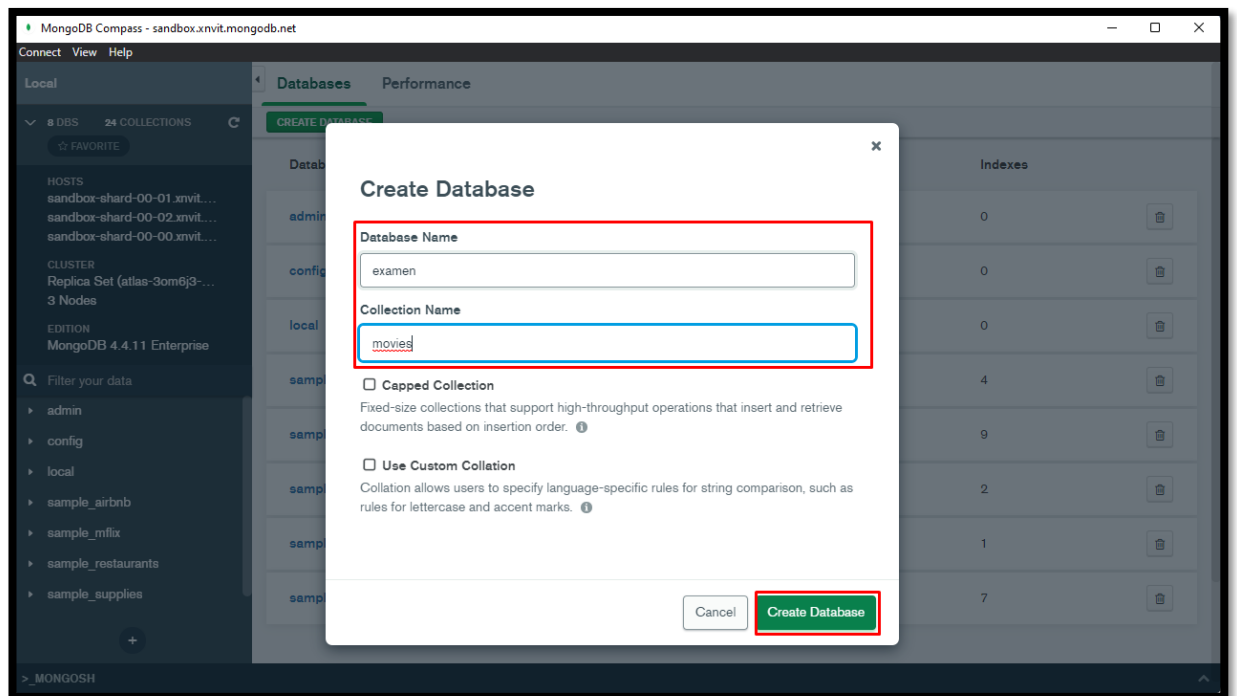
Récupération du lien de connexion :



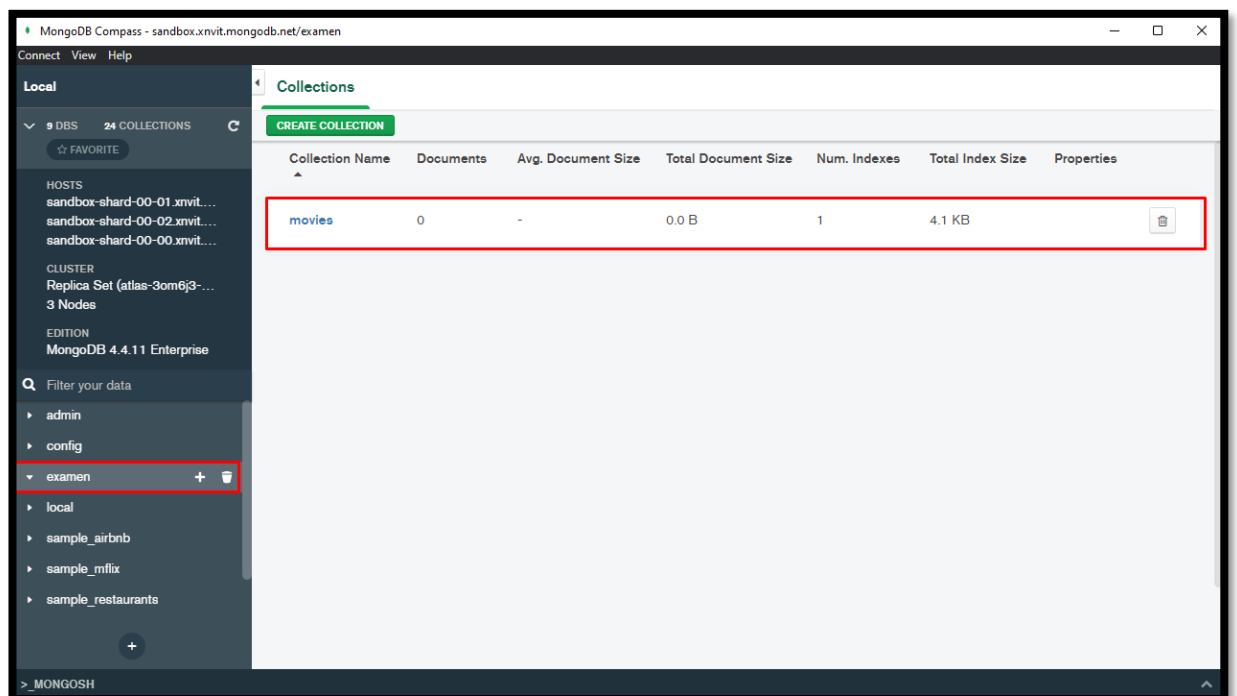
Connexion dans MongoDB :



## 2- Création de la base de données “examen” et la collection “movies” :

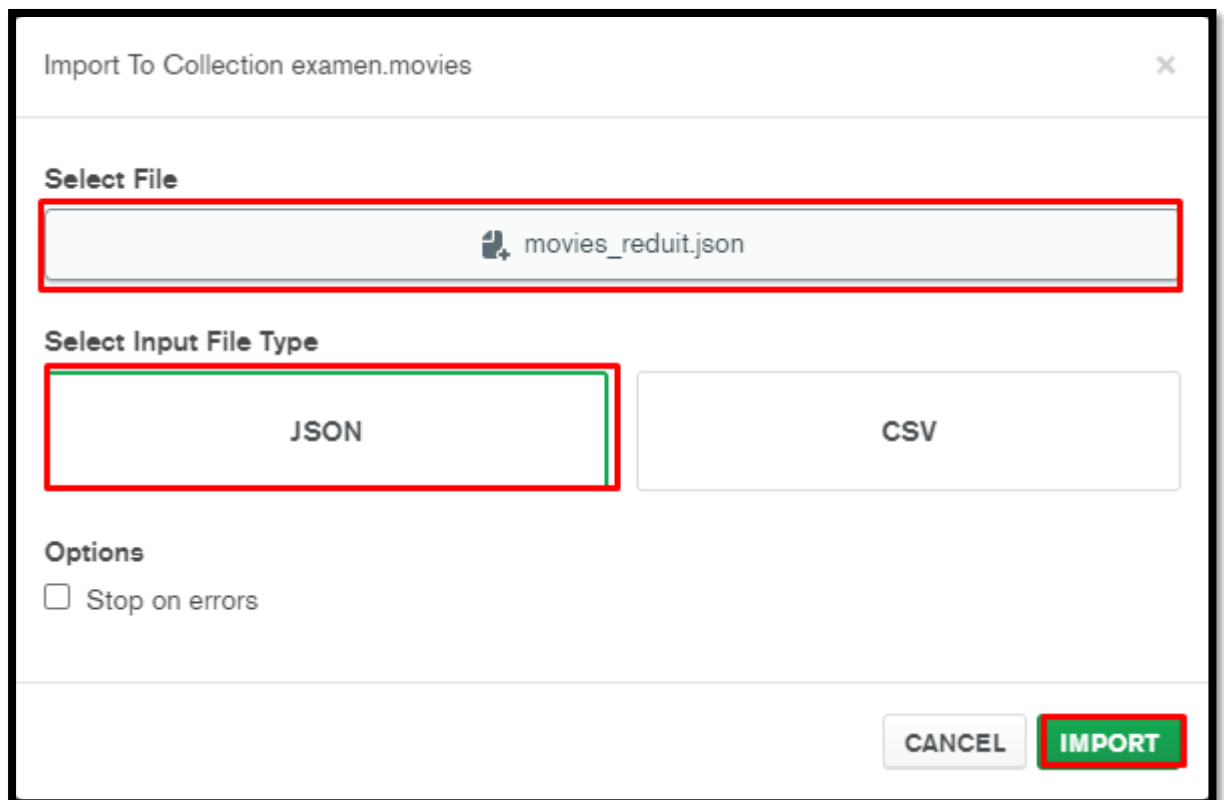
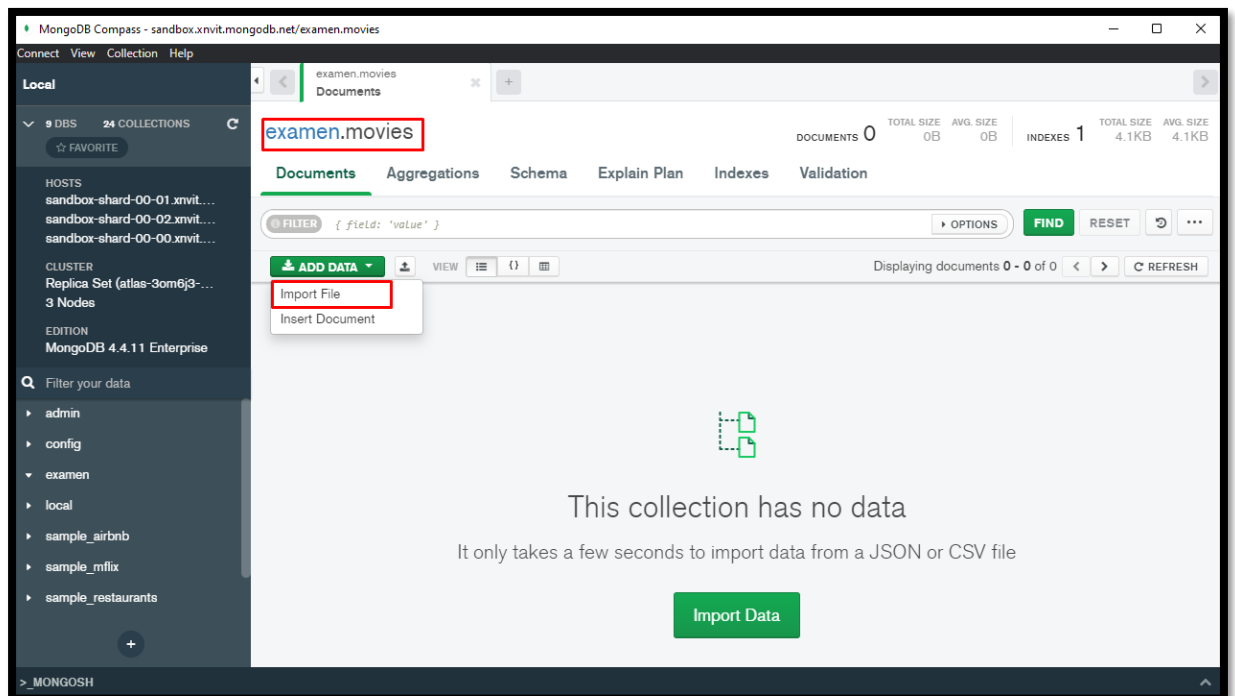


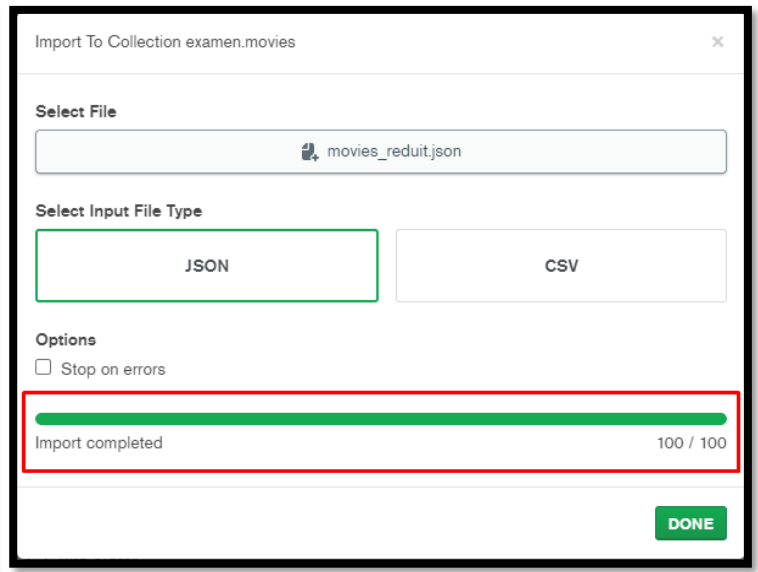
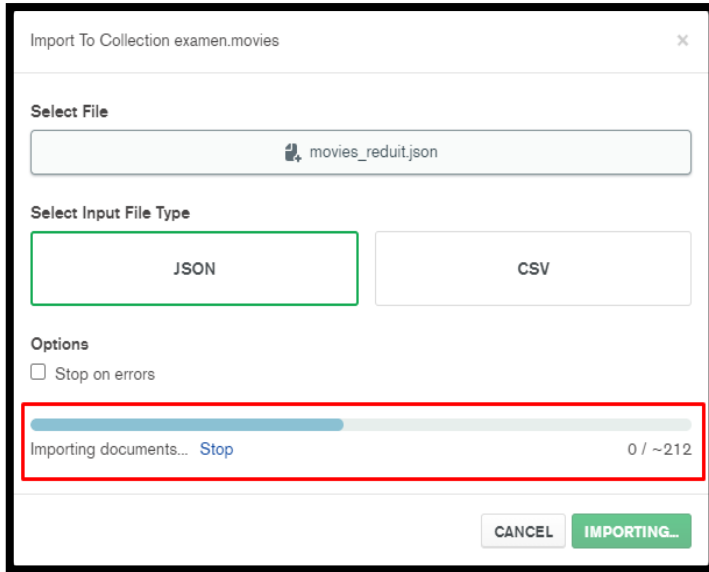
## Résultat :



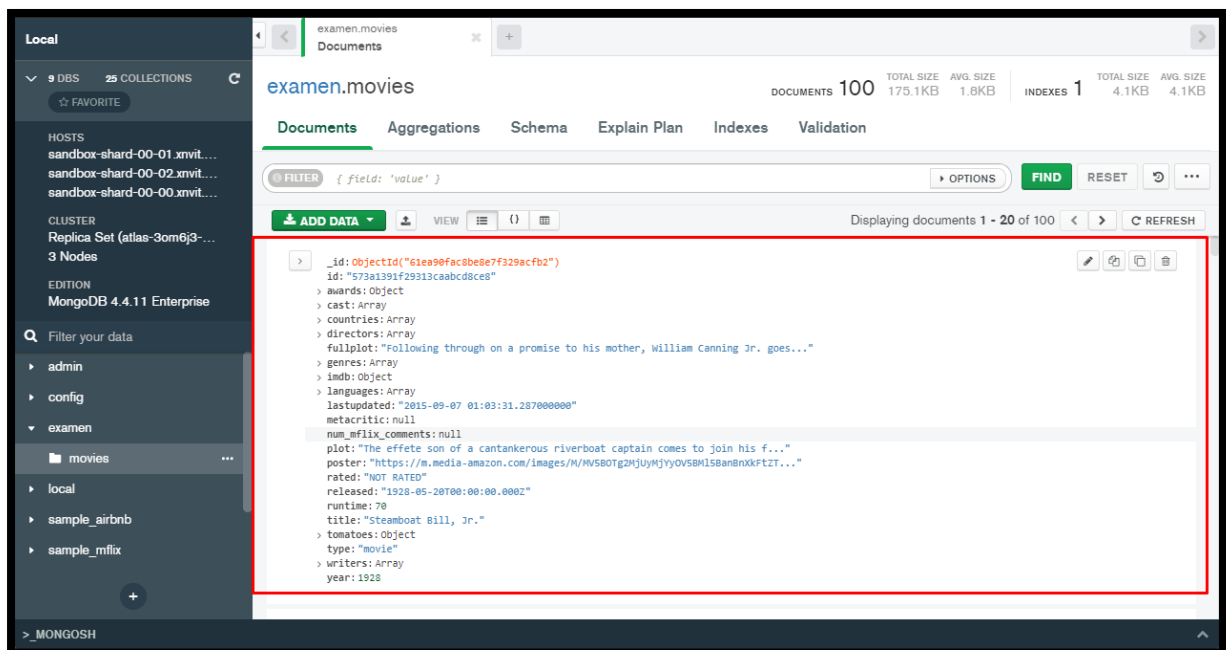


### 3- Importation du contenu de movies.json dans la collection movies :





Résultat :



## C - ORM/ODM PRISMA

### 1- Installation du “prisma cli” :

```
PS C:\Users\ELYOUSFI\Desktop\movies> npm i -D prisma

> prisma@3.8.1 preinstall C:\Users\ELYOUSFI\Desktop\movies\node_modules\prisma
> node scripts/preinstall-entry.js

> prisma@3.8.1 install C:\Users\ELYOUSFI\Desktop\movies\node_modules\prisma
> node scripts/install-entry.js

> @prisma/engines@3.8.0-43.34df67547cf5598f5a6cd3eb45f14ee70c3fb86f postinstall C:\Users\ELYOUSFI\Desktop\movies\node_modules\@prisma\engines
> node download/index.js

> Downloading Prisma engines for Node-API for windows [===== ] 91%
```

### 2- Installation du “client prisma” qui nous permettra d’accéder aux modèles qui seront définis :

```
PS C:\Users\ELYOUSFI\Desktop\movies> npm i @prisma/client

> @prisma/client@3.8.1 postinstall C:\Users\ELYOUSFI\Desktop\movies\node_modules\@prisma\client
> node scripts/postinstall.js

prisma:warn The postinstall script automatically ran `prisma generate` and did not find your `prisma/schema.prisma`.
If you have a Prisma schema file in a custom path, you will need to run
`prisma generate --schema=../path/to/your/schema.prisma` to generate Prisma Client.
If you do not have a Prisma schema file yet, you can ignore this message.

npm WARN optional SKIPPING OPTIONAL DEPENDENCY: fsevents@2.3.2 (node_modules\fsevents):
npm WARN notsup SKIPPING OPTIONAL DEPENDENCY: Unsupported platform for fsevents@2.3.2: wanted {"os":"darwin","arch":"any"} (current: {"os":"win32","arch":"x64"})

+ @prisma/client@3.8.1
added 2 packages from 1 contributor and audited 221 packages in 13.555s
```

### 3- Dans notre projet Express, nous allons initialiser un projet “prisma” :

```
PS C:\Users\ELYOUSFI\Desktop\movies> npx prisma init

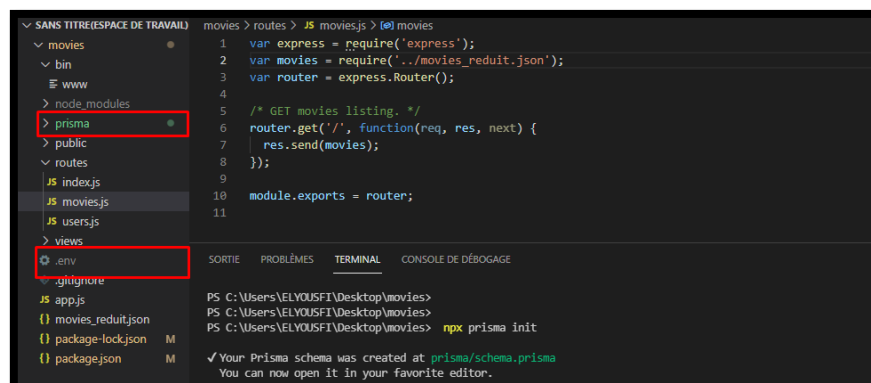
✓ Your Prisma schema was created at prisma/schema.prisma
You can now open it in your favorite editor.

warn You already have a .gitignore. Don't forget to exclude .env to not commit any secret.

Next steps:
1. Set the DATABASE_URL in the .env file to point to your existing database. If your database has no tables yet, read https://pris.ly/d/getting-started
2. Set the provider of the datasource block in schema.prisma to match your database: postgresql, mysql, sqlite, sqlserver or mongodb (Preview).
3. Run prisma db pull to turn your database schema into a Prisma schema.
4. Run prisma generate to generate the Prisma Client. You can then start querying your database.

More information in our documentation:
https://pris.ly/d/getting-started
```

Le dossier “prisma” et le fichier “.env” seront créés automatiquement :

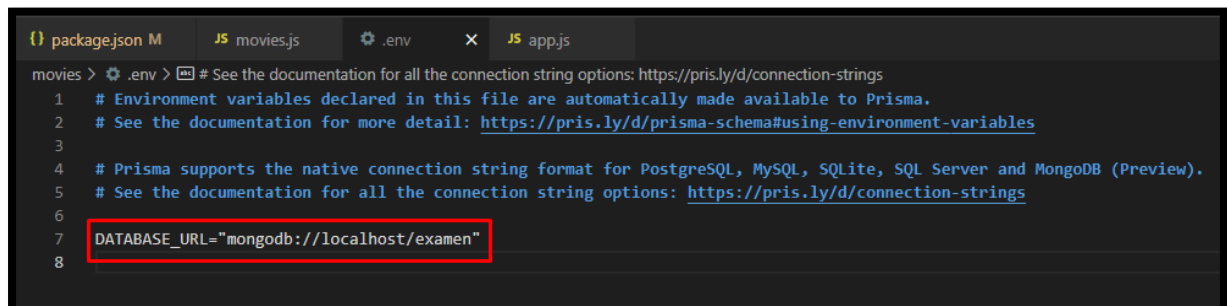


4- - Modification dans ".env" la ligne :

```
DATABASE_URL="postgresql://joh:pass@localhost:5432/mydb?schema=public"
```

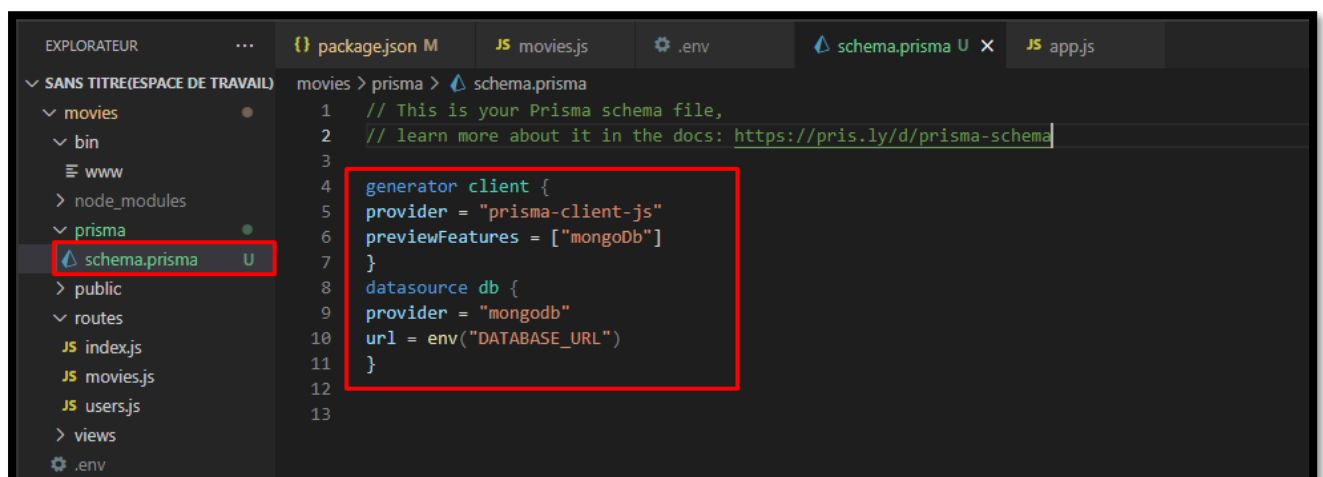
par :

```
DATABASE_URL="mongodb://localhost/examen"
```



```
package.json M JS movies.js .env X JS app.js
movies > .env > # See the documentation for all the connection string options: https://pris.ly/d/connection-strings
1 # Environment variables declared in this file are automatically made available to Prisma.
2 # See the documentation for more detail: https://pris.ly/d/prisma-schema#using-environment-variables
3
4 # Prisma supports the native connection string format for PostgreSQL, MySQL, SQLite, SQL Server and MongoDB (Preview).
5 # See the documentation for all the connection string options: https://pris.ly/d/connection-strings
6
7 DATABASE_URL="mongodb://localhost/examen"
8
```

5- modifier du fichier **schema.prisma** pour utiliser les fonctionnalité de l'ODM mongoDB :



```
EXPLORATEUR ... package.json M JS movies.js .env schema.prisma U X JS app.js
SANS TITRE(ESPACE DE TRAVAIL)
  movies
  bin
  www
  node_modules
  prisma
    schema.prisma U
  public
  routes
  JS index.js
  JS movies.js
  JS users.js
  views
  .env
movies > prisma > schema.prisma
1 // This is your Prisma schema file,
2 // learn more about it in the docs: https://pris.ly/d/prisma-schema
3
4 generator client {
5   provider = "prisma-client-js"
6   previewFeatures = ["mongoDb"]
7 }
8 datasource db {
9   provider = "mongodb"
10  url = env("DATABASE_URL")
11 }
12
13
```

6- Introspection de la base de données et création du schéma :

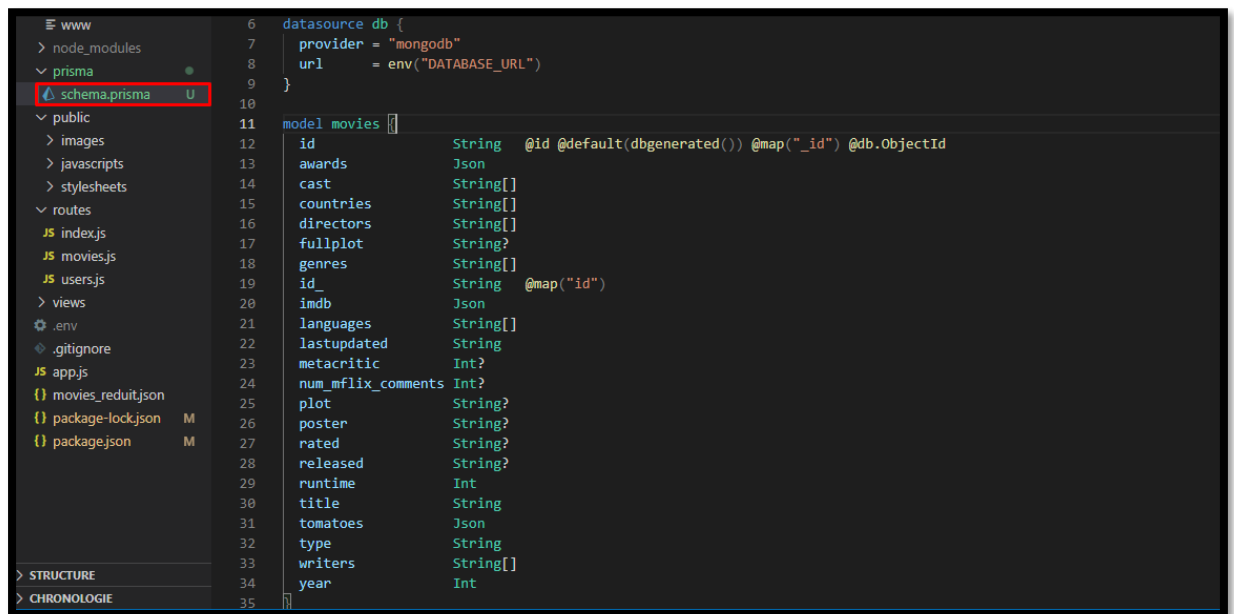
```
PS C:\Users\ELYOUSFI\Desktop\movies> npx prisma db pull
Environment variables loaded from .env
Prisma schema loaded from prisma\schema.prisma
Datasource "db"

Introspecting based on datasource defined in prisma\schema.prisma ...

✓ Introspected 1 model and wrote it into prisma\schema.prisma in 1.88s

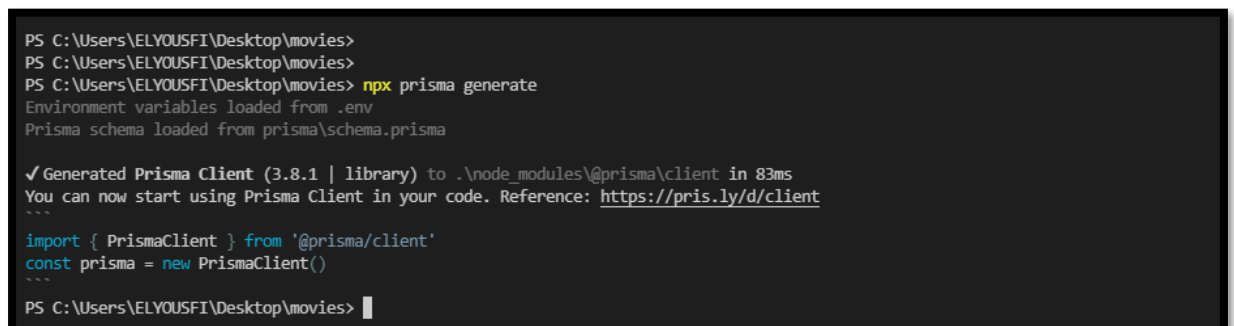
Run prisma generate to generate Prisma Client.
```

fichier “./prisma/schema.prisma”



```
6 datasource db {
7   provider = "mongodb"
8   url      = env("DATABASE_URL")
9 }
10
11 model movies {
12   id          String      @id @default(dbgenerated()) @map("_id") @db.ObjectId
13   awards      Json
14   cast        String[]
15   countries   String[]
16   directors   String[]
17   fullplot    String?
18   genres      String[]
19   id_         String      @map("id")
20   imdb        Json
21   languages   String[]
22   lastupdated  String
23   metacritic  Int?
24   num_mflix_comments Int?
25   plot        String?
26   poster      String?
27   rated       String?
28   released    String?
29   runtime     Int
30   title       String
31   tomatoes    Json
32   type        String
33   writers     String[]
34   year        Int
35 }
```

7- Générer le client Prisma pour prendre en considération le nouveau modèle en exécutant :



```
PS C:\Users\ELYOUSFI\Desktop\movies>
PS C:\Users\ELYOUSFI\Desktop\movies>
PS C:\Users\ELYOUSFI\Desktop\movies> npx prisma generate
Environment variables loaded from .env
Prisma schema loaded from prisma/schema.prisma

✓ Generated Prisma Client (3.8.1 | library) to .\node_modules\@prisma\client in 83ms
You can now start using Prisma Client in your code. Reference: https://pris.ly/d/client
...
import { PrismaClient } from '@prisma/client'
const prisma = new PrismaClient()
...
PS C:\Users\ELYOUSFI\Desktop\movies> 
```

## D - ACCES AUX DONNEES

1 - Nous allons modifier le fichier “./routes/movies.js” en y mettant :



```
package.json JS movies.js M .env schema.prisma JS app.js
movies > routes > JS movies.js > ...
1 const express = require('express');
2 const router = express.Router();
3 const {PrismaClient} = require('@prisma/client')
4 const prisma = new PrismaClient()
5 router.get('/', async function(req, res, next) {
6   const movies = await prisma.movies.findMany({take: 10})
7   res.send(movies);
8 });
9 module.exports = router;
10
```

## Résultat :

```
[{"id":"61ea90fac8be7f329acfb2","awards":{"wins":0,"nominations":1,"text":"1 nomination."},"cast":{"Buster Keaton","Tom McGuire","Ernest Torrence","Tom Lewis"},"countries":["USA"],"directors":["Charles Reisner","Buster Keaton"],"fullplot":"Following through on a promise to his mother, William Canning Jr. goes to River Junction to meet his father who has not seen him since he was a child. The younger Canning isn't quite what the elder was expecting but the old man has bigger problems. He's being put out of business by J.J. King, who not only owns the local hotel and bank, but has recently introduced a new paddle wheel steamer that puts Cannings older boat, the Stonewall Jackson, to shame. Bill Jr. and Kitty King take a liking to each other much to the dismay of both of their fathers. When a fierce storm hits River Junction, Bill Jr. is forced to save Kitty, her father and his father..","genres":["Action","Comedy","Drama"],"id":"573a1391f29313caabdc8ce8","imdb":{"rating":8,"votes":8617,"id":19421},"languages":["English"],"lastupdated":"2015-09-07 01:03:31.287000000","metacritic":null,"num_mflix_comments":null,"plot":"The effete son of a cantankerous riverboat captain comes to join his father's crew..","poster":"https://m.media-amazon.com/images/M/M580TgJyVjYjOV58N1S58aBnXKfZTgWj0W0DAuHjEg_VL_SV1000_SX677_AL_.jpg","rated":"NOT RATED","released":"1928-05-20T00:00:00.000Z","runtime":79,"title":"Steamboat Bill, Jr."},"tomatoes":{"viewer":{"rating":4.1,"numReviews":5383,"meter":92},"dvd":{"$date":"2001-11-20T00:00:00Z"},"critic":{"rating":9.1,"numReviews":17,"meter":100},"lastupdated":{"$date":"2015-09-15T17:02:42Z"},"rotten":0},"production":"United Artists","fresh":17,"type":"movie","writers":["Carl Harbaugh (story)","year":1928},"id":"61ea90fac8be7f329acfb3","awards":{"wins":0,"nominations":3,"text":"Won 1 Oscar. Another 2 nominations."},"cast":{"Janet Gaynor","Charles Farrell","Natalie Kingston","Henry Armetta"},"countries":["USA"],"directors":["Frank Borzage"],"fullplot":"In Naples, where prostitutes can pay their rent, Angela is sentenced to a year in the workhouse when she tries to steal (while streetwalking) to pay for medicine for her dying mother. She escapes and is hidden by a circus, where she's a natural talent and meets Gino, a painter. When she breaks her ankle in a fall, her career ends. What can she and Gino do? He wants to go to Naples, but the law may still be looking for her, and Gino doesn't know about her past. Starving artist and a beauty with a secret: is there room in this world for them?","genres":["Drama"],"id":"573a1391f29313caabdc8cf","imdb":{"rating":7.5,"votes":1365,"id":19429},"languages":[""],"lastupdated":"2015-07-31 00:49:13.677000000","metacritic":null,"num_mflix_comments":4,"plot":"A woman on the run from the law finds her past catching up to her just as she is on the verge of true happiness..","poster":"https://m.media-amazon.com/images/M/M580TgJyVjYjOV58N1S58aBnXKfZTgWj0W0DAuHjEg_VL_SV1000_SX677_AL_.jpg","rated":null,"released":"1928-04-09T00:00:00.000Z","runtime":182,"title":"Street Angel","tomatoes":{"viewer":{"rating":3.7,"numReviews":546,"meter":79},"dvd":{"$date":"2007-05-08T00:00:00Z"},"production":"Fox Film Corporation","lastupdated":{"$date":"2015-09-10T19:14:56Z"},"type":"movie","writers":["H.M. Caldwell (titles)","Katherine Hilliker (titles)","Wonkon Hoffe (play)","Philip Klein (adaptation)","Marion Orth","Henry Roberts Symonds (adaptation)","year":1928},"id":"61ea90fac8be7f329acfb4","awards":{"wins":1,"nominations":0,"text":"1 win."},"cast":{"Walt Disney"},"countries":["USA"],"directors":["Walt Disney"],"fullplot":"Mickey is piloting a steamboat when Captain Pete comes to the bridge and throws him off. They stop to pick up cargo. Minnie just misses the boat and Mickey uses the crane to grab her. She drops her sheet music of 'Turkey in the Straw' and a goat eats it. With help from Mickey, she cracks the goat's tail, and it plays the tune. Mickey accompanies on percussion and by torturing various animals, until Pete comes down and puts a stop to it, putting Mickey to work peeling potatoes. While this is the first sound Mickey Mouse, there's no dialog..","genres":["Animation","Family","Comedy"],"id":"573a1391f29313caabdc8cf4","imdb":{"rating":7.7,"votes":4230,"id":19422},"languages":["English"],"lastupdated":"2015-08-28 00:19:58.017000000","metacritic":null,"num_mflix_comments":1,"plot":"Mickey Mouse, piloting a steamboat, delights his passenger, Minnie, by making musical instruments out of the menagerie on deck..","poster":"https://m.media-amazon.com/images/M/M580TgJyVjYjOV58N1S58aBnXKfZTgWj0W0DAuHjEg_VL_SV1000_SX677_AL_.jpg","rated":null,"released":"1930-08-11T00:00:00.000Z","runtime":8,"title":"Steamboat Willie","tomatoes":{"viewer":{"rating":13.6,"numReviews":2925,"meter":83},"lastupdated":{"$date":"2015-07-01T19:03:21Z"},"type":"movie","writers":[""],"year":1928},"id":"61ea90fac8be7f329acfb5","awards":{"wins":1,"nominations":0,"text":"1 win."},"cast":{"Erich von Stroheim","Ray Wray","Matthew Betz","Zasu Pitts"},"countries":["USA"],"directors":{"Erich von Stroheim"},"fullplot":"Prince Nikki, Lieutenant of the Guard in pre WWI Vienna, is flat broke, but the only advice he gets from his parents is either to shoot himself or to marry money. During the Chorus Christi parade his horse accidentally hurts poor Nitzi, the daughter of inn-keepers in a Viennese suburb, who is, according to the wishes of her parents, going to marry the butcher Schani. When Nikki visits her at the hospital, they fall in love, much to the dislike of her parents and Schani. Nikki's parents, meanwhile have arranged a prospective marriage with Cecilia, the limping daughter of a very rich non-aristocratic industrial. Due to the fact, that Nikki's father is a general in the Austrian-Hungarian Army, resistance is useless. When Nitzi, after hearing of it, is still refusing Schani's proposal, he vows to shoot Nikki when he leaves the church..","genres":["Drama"],"id":"573a1391f29313caabdc8d7b","imdb":{"rating":7.5,"votes":961,"id":19558},"languages":[""],"lastupdated":"2015-05-22 01:54:12.097000000","metacritic":null,"num_mflix_comments":null,"plot":"A young impoverished aristocrat falls in love with an inn-keepers daughter, but has to marry money..","poster":"https://m.media-amazon.com/images/M/M580TgJyVjYjOV58N1S58aBnXKfZTgWj0W0DAuHjEg_VL_SV1000_SX677_AL_.jpg","rated":null,"released":"1928-10-06T00:00:00.000Z","runtime":113,"title":"The Wedding March","tomatoes":{"viewer":{"rating":3.8,"numReviews":75,"meter":83},"fresh":5,"critic":{"rating":7.2,"numReviews":2,"meter":74},"rotten":2,"lastupdated":{"$date":"2015-08-09T18:45:56Z"},"type":"movie","writers":["Harry Carr","Erich von Stroheim"],"year":1928},"id":"61ea90fac8be7f329acfb6","awards":{"wins":1,"nominations":0,"text":"1 win."},"cast":{"Lillian Gish","Helen Hanson","Montagu Lover","Dorothy Cumming"},"countries":["USA"],"directors":["Victor Sjostrom"],"fullplot":"Innocent and naive Letty Mason moves from her Virginia home to Sweet Water on the western prairies to live on the ranch of her cousin Beverly, his wife Cora and their three children. Letty quickly learns how inhospitable the environment in Sweet Water is, the most obvious item being the incessant wind. But equally inhospitable are the unfriendly way the people in Sweet Water live to which she is unaccustomed, and Cora, who believes Letty has come to steal Beverly away from her. As such, Cora orders Letty out of her and Bev's house. With no money, Letty is forced to accept one of the marriage proposal she receives, the lesser evil being that from Bev and Cora's ranching neighbor, Lige Hightower, a man who she does not love. Despite a less than harmonious start, Letty, in part due to her isolation as she is more often than not forced to stay inside due to the wind, begins to have affection for Lige, who wants to do right by her, and who promises to send her back to Virginia when he is financial able. But a visitor who takes refuge in their house away from the wind may threaten Letty's ultimate happiness..","genres":["Drama","Romance","Western"],"id":"573a1391f29313caabdc8d96","imdb":{"rating":8.4,"votes":4291,"id":19585},"languages":["English"],"lastupdated":"2015-07-12 00:48:42.467000000","metacritic":null,"num_mflix_comments":1,"plot":"A frell young woman from the east moves in with her cousin in the west, where she causes tension within the family and is slowly driven
```

## 2- la pagination pour que la requête puisse envoyer les données à partir d'une position donnée :

```
movies > routes > JS moviesjs > router.get('/:take?/:skip?') callback > pagination > count
const { PrismaClient } = require('prisma/client');
const prisma = new PrismaClient();

router.get('/:take?/:skip?', async function (req, res, next) {
  const limit = Number.parseInt(req.query.take) || 10;
  const offset = Number.parseInt(req.query.skip) || 0;
  const movies = await prisma.movies.findMany({
    take: limit,
    skip: offset,
  });
  res.send({
    data: movies,
    pagination: {
      count: await prisma.movies.count(),
      take: limit,
      skip: offset,
    },
  });
});
```

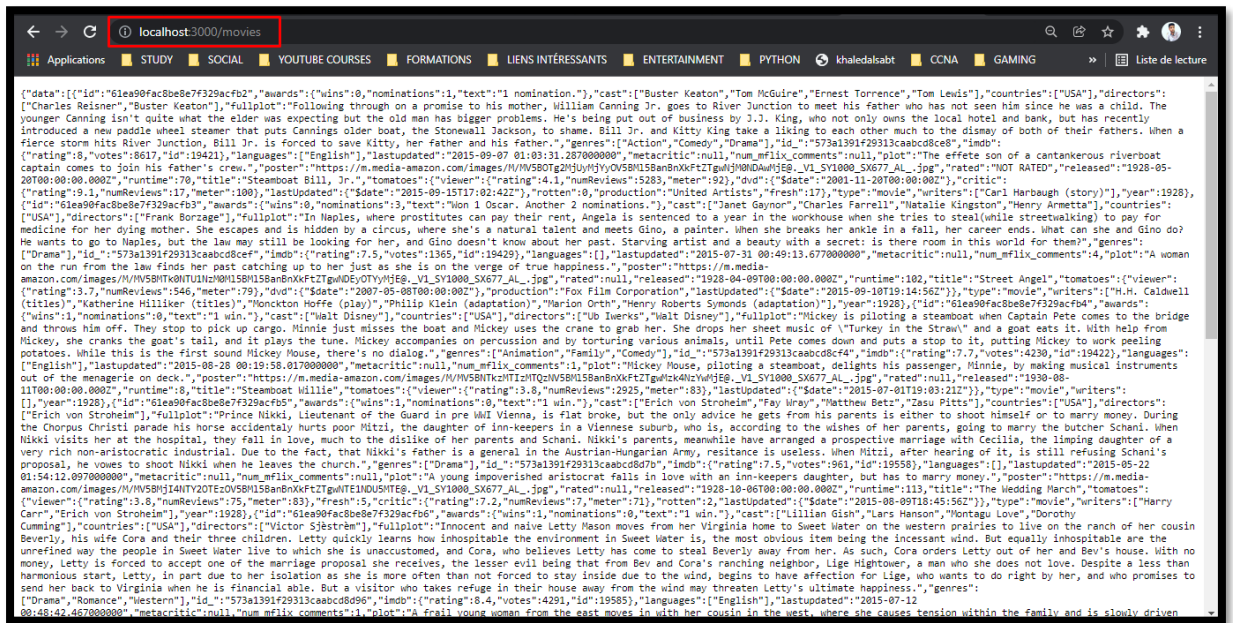
localhost:3000/movies?take=1&skip=50

```
{
  "data": [
    {
      "id": "61ea90fac8be7f329acfb4",
      "awards": {
        "wins": 4,
        "nominations": 0,
        "text": "Nominated for 1 Oscar. Another 3 wins."
      },
      "cast": [
        "Henri Marchand",
        "Raymond Cordy",
        "Rolla France",
        "Paul Ollivier"
      ],
      "countries": [
        "France"
      ],
      "directors": [
        "René Clair"
      ],
      "fullplot": "A famous left-wing satirical comedy about two ex-convicts, one of whom escaped jail and then worked his way up from salesman to factory owner, where he oversees a highly mechanized operation where the workers are reduced to mere automatons. Fearful of being exposed over his past, at first by his friend and later by another gangster, the owner chooses to give his factory to the workers, then escapes with his friend to the freedom of the open road. The production company for 'À Nous la Liberté' was for more than a decade embroiled in a lawsuit claiming that Charles Chaplin had seen their film and plagiarized many ideas from it as he developed 'Modern Times.'",
      "genres": [
        "Comedy",
        "Musical"
      ],
      "id": "573a1391f29313caabdc9599",
      "imdb": {
        "rating": 7.7,
        "votes": 12000,
        "id": 122599,
        "languages": [
          "French"
        ],
        "lastupdated": "2015-08-21 00:02:36.330000000",
        "metacritic": null,
        "num_mflix_comments": 2,
        "plot": "A famous left-wing satirical comedy about two ex-convicts, one of whom escaped jail and then worked his way up from salesman to factory owner, where he oversees a highly mechanized ...",
        "poster": "https://m.media-amazon.com/images/M/M580Dg000aH12H2M4C00NGYxLH12VhHtH2FiW1zYVhUzJ1XkYxKfZTgWj0W0DAuHjEg_VL_SV1000_SX677_AL_.jpg",
        "rated": "APPROVED",
        "released": "1931-12-31T00:00:00.000Z",
        "runtime": 97,
        "title": "À Nous la Liberté",
        "tomatoes": {
          "viewer": {
            "rating": 3.8,
            "numReviews": 2373,
            "meter": 80,
            "dvd": {
              "$date": "2002-08-20T00:00:00Z"
            },
            "critic": {
              "rating": 8.3,
              "numReviews": 17,
              "meter": 100,
              "lastupdated": {
                "$date": "2015-08-21T19:29:36Z"
              },
              "rotten": 0,
              "production": "Harold Auten",
              "fresh": 17,
              "type": "movie",
              "writers": [
                "René Clair (story)"
              ],
              "year": 1931,
              "pagination": {
                "count": 1,
                "take": 1,
                "skip": 50
              }
            }
          }
        }
      }
    ]
  },
  "pagination": {
    "count": 1,
    "take": 1,
    "skip": 50
  }
}
```

localhost:3000/movies?take=1&skip=15

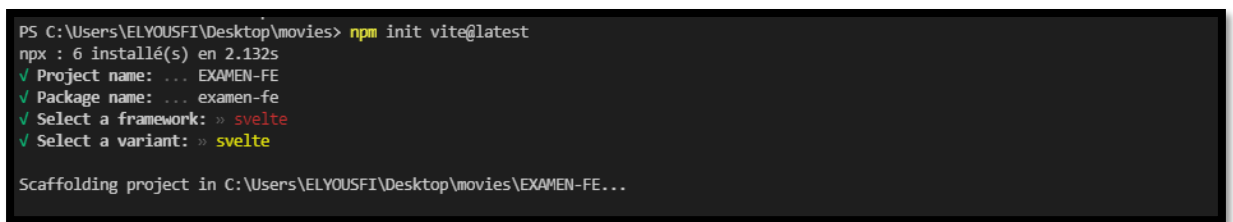
```
{
  "data": [
    {
      "id": "61ea90fac8be7f329acfb1",
      "awards": {
        "wins": 0,
        "nominations": 4,
        "text": "Won 2 Oscars. Another 2 nominations."
      },
      "cast": [
        "Chester Morris",
        "Wallace Beery",
        "Lewis Stone",
        "Robert Montgomery"
      ],
      "countries": [
        "USA"
      ],
      "directors": [
        "George H. Hill",
        "Ward Wing"
      ],
      "fullplot": "After a manslaughter conviction from drunk driving, nice but foolish Kent is sent to a prison over-crowded and unable to properly deal with it's inmates. There he meets veteran criminals like Morgan and his hardened pal Butch. And the system punishes them all, turning them against each other and bringing out the worst.",
      "genres": [
        "Drama",
        "Romance",
        "Thriller"
      ],
      "id": "573a1391f29313caabdc91d7",
      "imdb": {
        "rating": 7.2,
        "votes": 1161,
        "id": 208686,
        "languages": [
          "English",
          "Russian"
        ],
        "lastupdated": "2015-07-20 00:26:02.200000000",
        "metacritic": null,
        "num_mflix_comments": 4,
        "plot": "A convict falls in love with his new cellmate's sister, only to become embroiled in a planned break-out which is certain to have lethal consequences..",
        "poster": "https://m.media-amazon.com/images/M/M580Dg000aH12H2M4C00NGYxLH12VhHtH2FiW1zYVhUzJ1XkYxKfZTgWj0W0DAuHjEg_VL_SV1000_SX677_AL_.jpg",
        "rated": "PASSED",
        "released": "1930-06-14T00:00:00.000Z",
        "runtime": 87,
        "title": "The Big House",
        "tomatoes": {
          "viewer": {
            "rating": 3.6,
            "numReviews": 296,
            "meter": 77,
            "dvd": {
              "$date": "1994-06-22T00:00:00Z"
            },
            "critic": {
              "rating": 7.2,
              "numReviews": 6,
              "meter": 83,
              "lastupdated": {
                "$date": "2015-08-20T18:53:19Z"
              },
              "rotten": 1,
              "production": "Warner Bros.",
              "fresh": 5,
              "type": "movie",
              "writers": [
                "Frances Marion (story)",
                "Joseph Farnham (additional dialogue)",
                "Martin Flavin (additional dialogue)"
              ],
              "year": 1930,
              "pagination": {
                "count": 1,
                "take": 1,
                "skip": 15
              }
            }
          }
        }
      }
    ]
  },
  "pagination": {
    "count": 1,
    "take": 1,
    "skip": 15
  }
}
```

## Les valeurs par défaut de take (10) et de skip (0) :

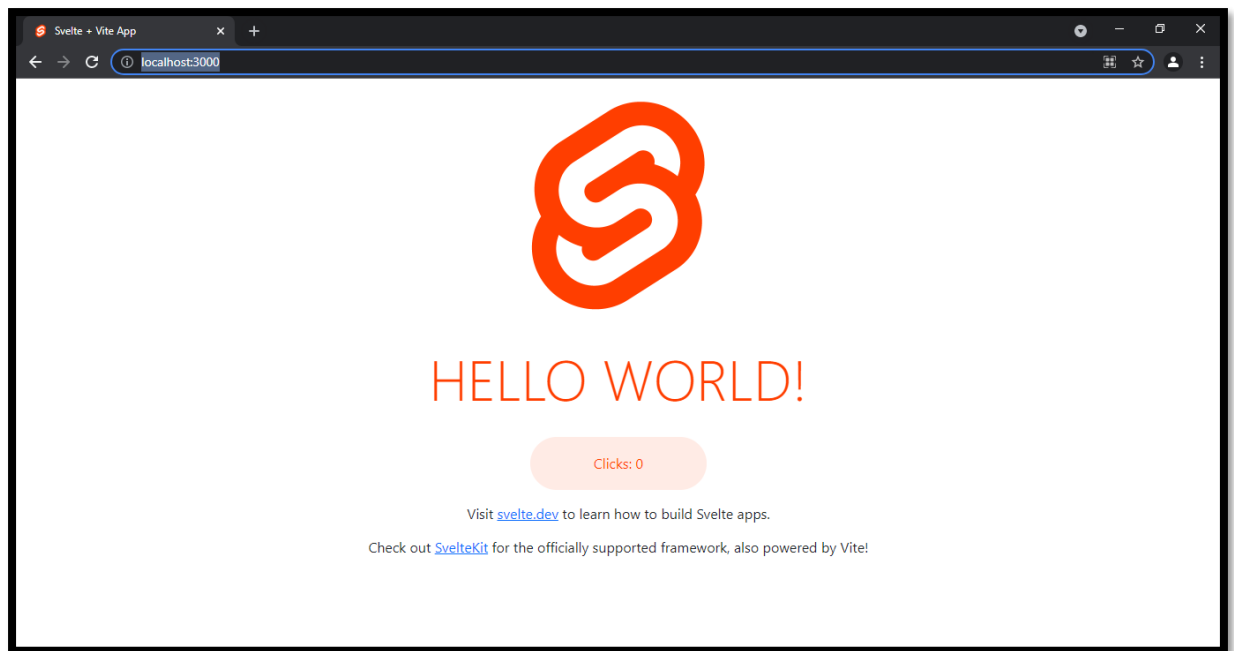


## E - FRONTEND SVELTE

### 1- Initiation d'un projet SVELTE :







## 2- L'ajout de Bootstrap :

```
PS C:\Users\ELYOUSFI\Desktop\movies\EXAMEN-FE> npx svelte-add@latest bootstrap
npx : 66 installé(s) en 54.671s
+ Svelte Add (Version 2022.01.19.00)
The project directory you're giving to this command cannot be determined to be guaranteed fresh – maybe it is, maybe it isn't. If any issues arise after running this command, please try again, making sure you've run it on a freshly initialized SvelteKit or Vite-Svelte app template.

SCSS
✅ successfully set up!
Create or find an existing issue at https://github.com/svelte-add/svelte-add/issues if this is wrong.

Bootstrap
✅ successfully set up!
Create or find an existing issue at https://github.com/svelte-add/svelte-add/issues if this is wrong.
```

```

v movies
> bin
v EXAMEN-FE
> .vscode
> node_modules
> public
v src
  > assets
  > lib
  app.scss U
  App.svelte U
  main.js U
  variables.scss U
  vite-env.d.ts U
.gitignore U
index.html U
jsconfig.json U
package-lock.json U
package.json U
README.md U
svelte.config.js U
1 /* Write your global styles here, in SCSS syntax. Variables and mixins from the src/variables.scss file are available
2 @import "bootstrap/scss/root";
3 @import "bootstrap/scss/reboot";
4 @import "bootstrap/scss/type";
5 @import "bootstrap/scss/accordion";
6 @import "bootstrap/scss/alert";
7 @import "bootstrap/scss/badge";
8 @import "bootstrap/scss/breadcrumb";
9 @import "bootstrap/scss/buttons";
10 @import "bootstrap/scss/button-group";
11 @import "bootstrap/scss/carousel";
12 @import "bootstrap/scss/close";
13 @import "bootstrap/scss/containers";
14 @import "bootstrap/scss/dropdown";
15 @import "bootstrap/scss/forms";
16 @import "bootstrap/scss/grid";
17 @import "bootstrap/scss/images";
18 @import "bootstrap/scss/list-group";
19 @import "bootstrap/scss/modal";
20 @import "bootstrap/scss/nav";
21 @import "bootstrap/scss/navbar";
22 @import "bootstrap/scss/offcanvas";
23 @import "bootstrap/scss/pagination";
24

```



### 3- Récupération des éléments :

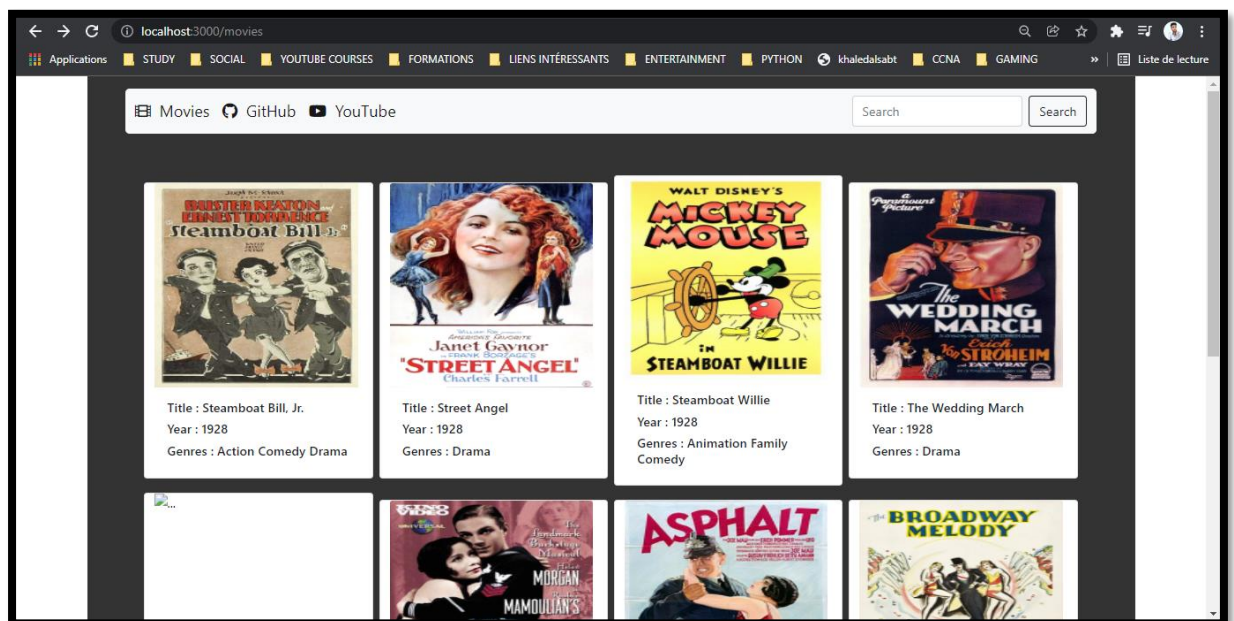
```
<script>
import logo from "../assets/svelte.png";
import Counter from "../lib/Counter.svelte";
import { onMount } from "svelte";

let movies = [];
let pagination = {};

async function getMovies() {
  await fetch("http://localhost:4000/movies")
    .then((r) => r.json())
    .then((data) => {
      movies = data.data;
      pagination = data.pagination;
      console.log(movies);
    });
}

onMount(async () => {
  getMovies();
});
</script>
```

### 4- Affichage des champs :



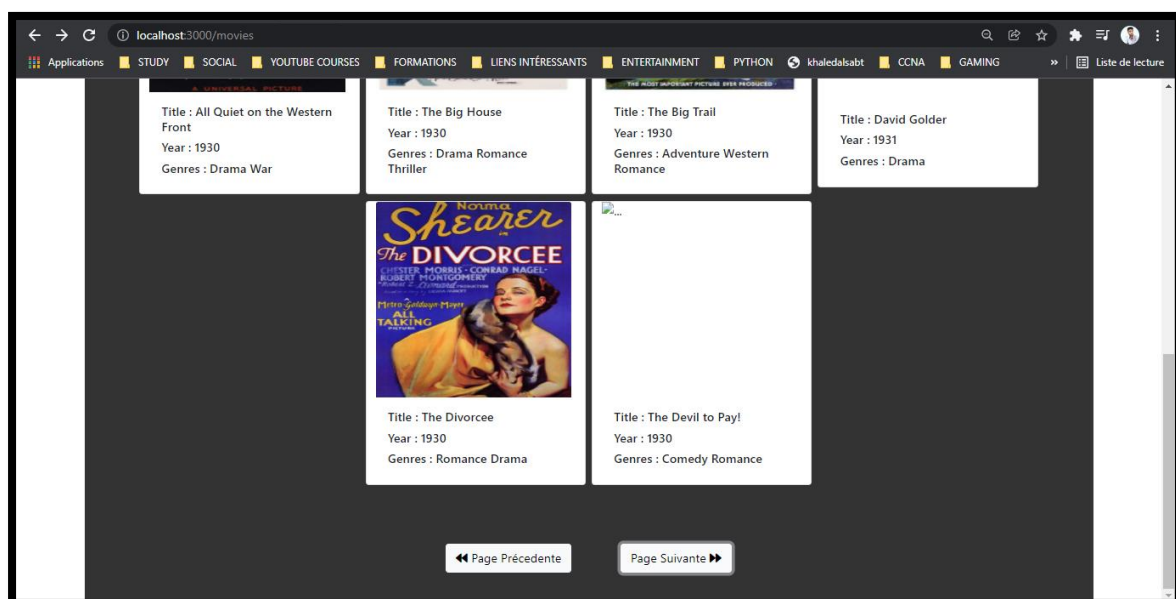
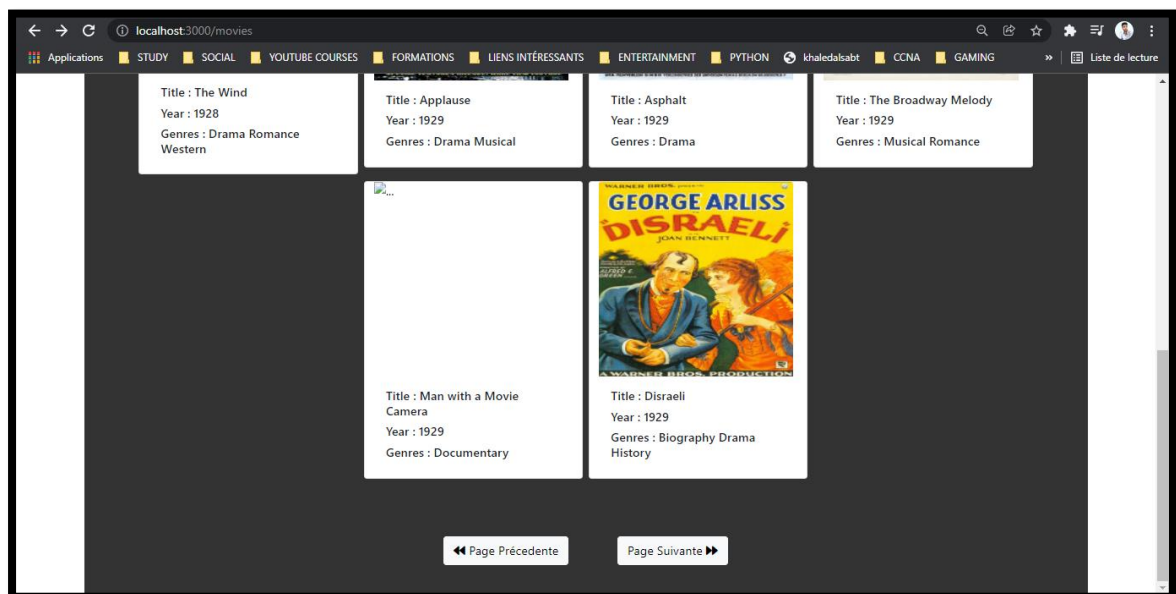
### 5- Autorisation du CORS (Cross-origin resource sharing) dans l'application Express :

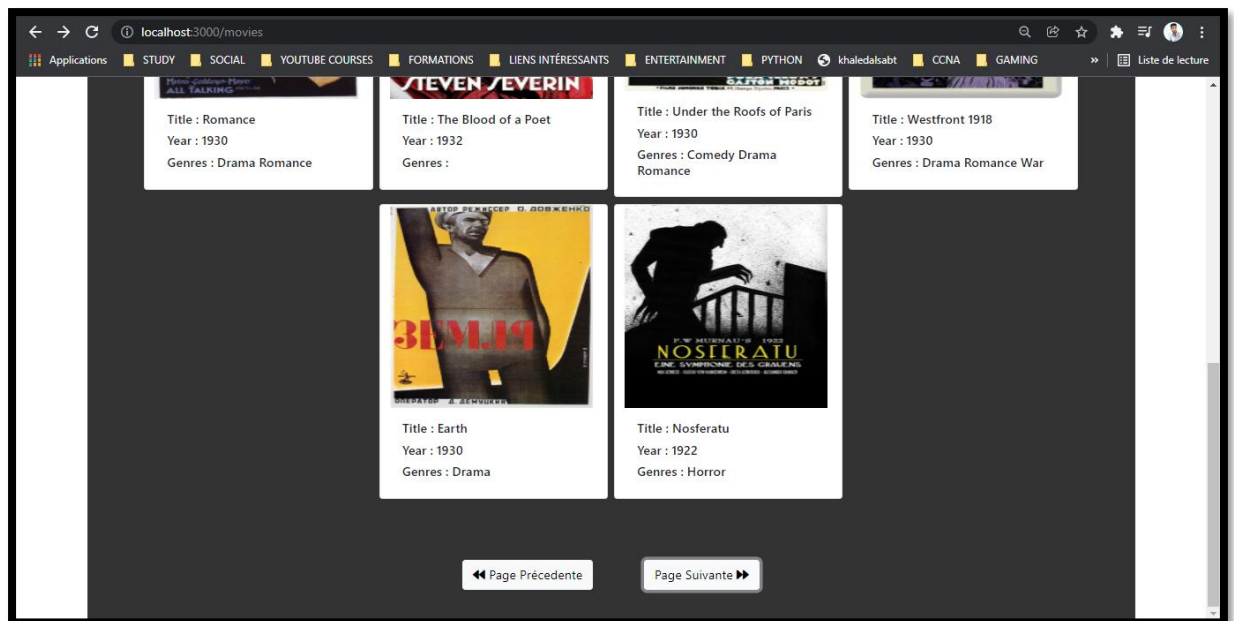
```
PS C:\Users\ELYOUSFI\Desktop\movies> npm install cors
npm WARN optional SKIPPING OPTIONAL DEPENDENCY: fsevents@2.3.2 (node_modules\fsevents):
npm WARN notsup SKIPPING OPTIONAL DEPENDENCY: Unsupported platform for fsevents@2.3.2: wanted {"os":"darwin","arch":"any"} (current: {"os":"win32","arch":"x64"})

+ cors@2.8.5
added 2 packages from 2 contributors and audited 223 packages in 5.35s
```

```
movies > JS app.js > ...
14 app.set('views', path.join(__dirname, 'views'));
15 app.set('view engine', 'jade');
16
17 app.use(logger('dev'));
18 app.use(express.json());
19 app.use(express.urlencoded({ extended: false }));
20 app.use(cookieParser());
21 app.use(express.static(path.join(__dirname, 'public')));
22
23 app.use(cors());
24
25 app.use('/', indexRouter);
26 app.use('/users', usersRouter);
27 app.use('/movies', moviesRouter);
28
```

## 6- Pagination :





Démarche :

```

async function getElements_S() {
  skip += 10
  await fetch("http://localhost:4000/movies?take=10&skip="+skip)
    .then((r) => r.json())
    .then((data) => {
      movies = data.data;
      pagination = data.pagination;
    });
}

async function getElements_P() {
  skip -= 10
  await fetch("http://localhost:4000/movies?take=10&skip="+skip)
    .then((r) => r.json())
    .then((data) => {
      movies = data.data;
      pagination = data.pagination;
    });
}

<div class="container text-center">
  <button type="button" class="btn btn-light" id="btn-p" on:click={getElements_P}><i class="fas fa-backward"></i>
  <button type="button" class="btn btn-light" id="btn-s" on:click={getElements_S}>Page Suivante <i class="fas fa-forward"></i>
</div>

```

Code Dans github : <https://github.com/ElyousfiMohamed/movies>