

**Graduation in INFORMATICS ENGINEERING**

**GESImoveis - FTKode**  
**Project IV**

Orientation:

24585–Alexandre Pereira dos Santos;

26780–António Manuel Leal da Silva Gomes;

• Professor Doctor Ricardo Freitas - IPVC;

• Engineer Miguel Guerra – FTKode;

## ■ Summary

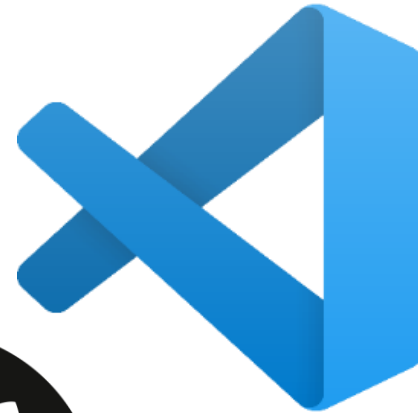
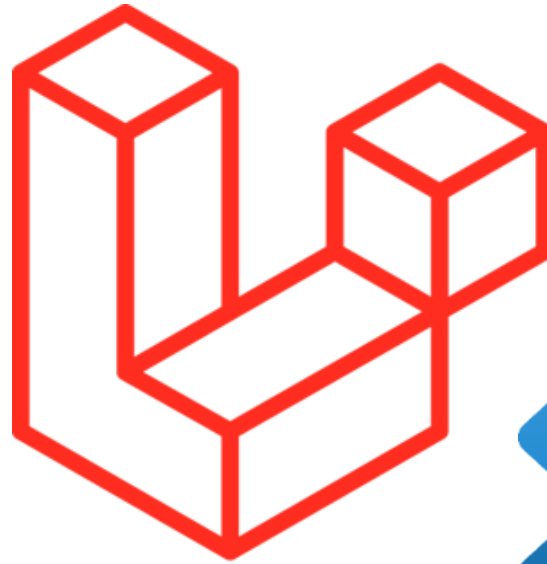
1. Introduction and Objectives
2. Technologies, tools, libraries, methodology and project management
  - 2.1 Development Environment
  - 2.2 Methodology
3. Use Cases, ER Diagram
  - 3.1 Use Cases
  - 3.2 ER Diagram
4. Developed features
5. Practical Case/Project Developed
6. Difficulties
7. Conclusion
8. Bibliography and Web References

# ■ 1. Introduction and Objectives

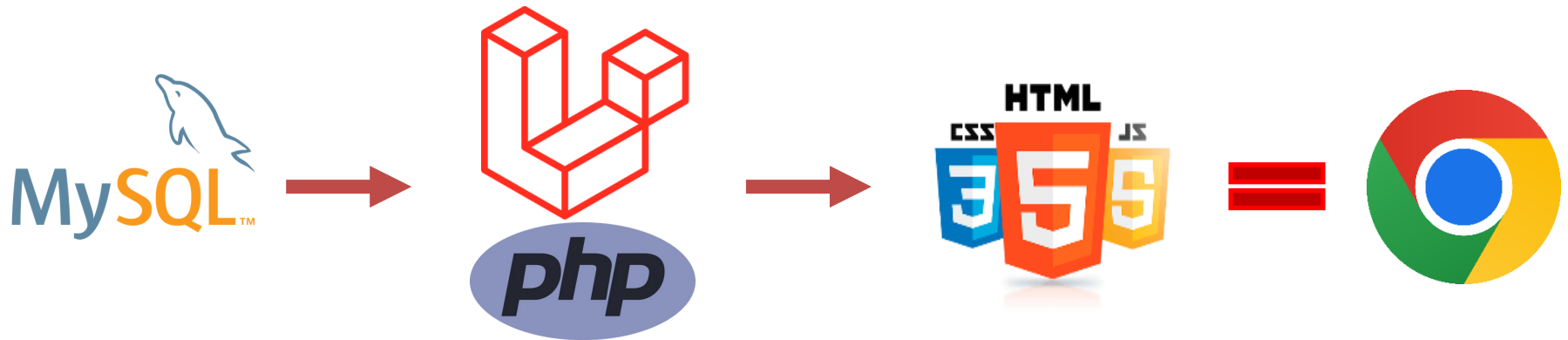


- In the Project IV course at the Polytechnic Institute of Viana do Castelo, we embarked on developing a web-based platform called "**GESImoveis**" using the Laravel framework. This initiative was in collaboration with FTKode and our academic mentors. The project aims to deliver a comprehensive property management system that integrates seamlessly with GESFaturacao API, enhancing the efficiency and effectiveness of real estate management.
- The GESImoveis project aims to create a robust and user-friendly web platform for managing real estate properties and rental contracts. Key objectives include:
  - **User Management:** Facilitate registration and management of users.
  - **Property Management:** Enable detailed tracking of various property types, including apartments and houses, with attributes such as area, address, construction year, and financial details.
  - **Expense Management:** Provide tools for recording and managing property-related expenses.
  - **Tenant Management:** Support the registration and management of tenant information.
  - **Rental Contracts:** Offer functionalities to manage rental contracts, including start and end dates, payment schedules, and contract specifics.
  - **Integration with GESFaturacao:** Leverage the GESFaturacao API to streamline the invoicing process for rent payments directly from the platform.

## ■ 2. Technologies, tools and libraries



## ■ 2.1. Development Environment



Database  
Service



Laravel  
Framework

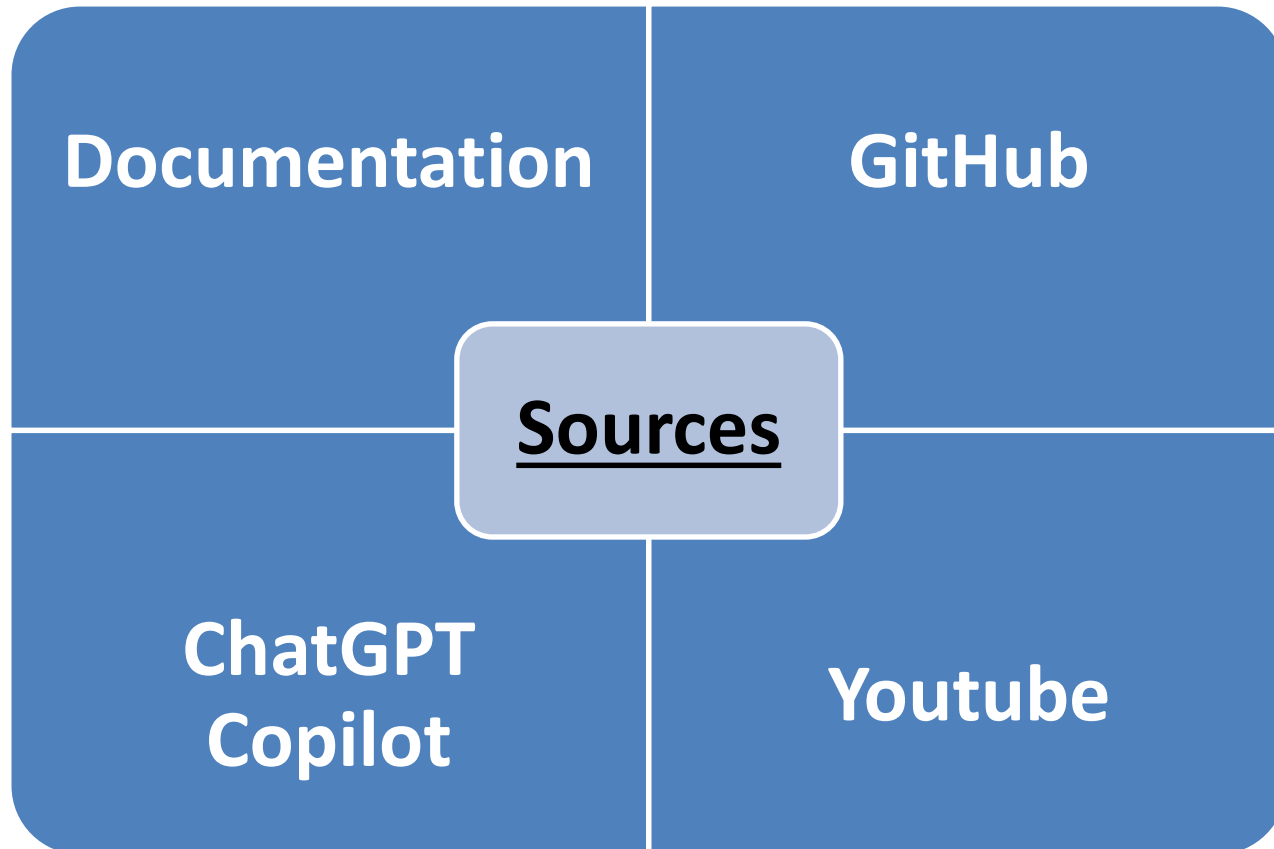


Web page  
Structure



Browser  
Presentation

## ■ 2.2 Sources Used

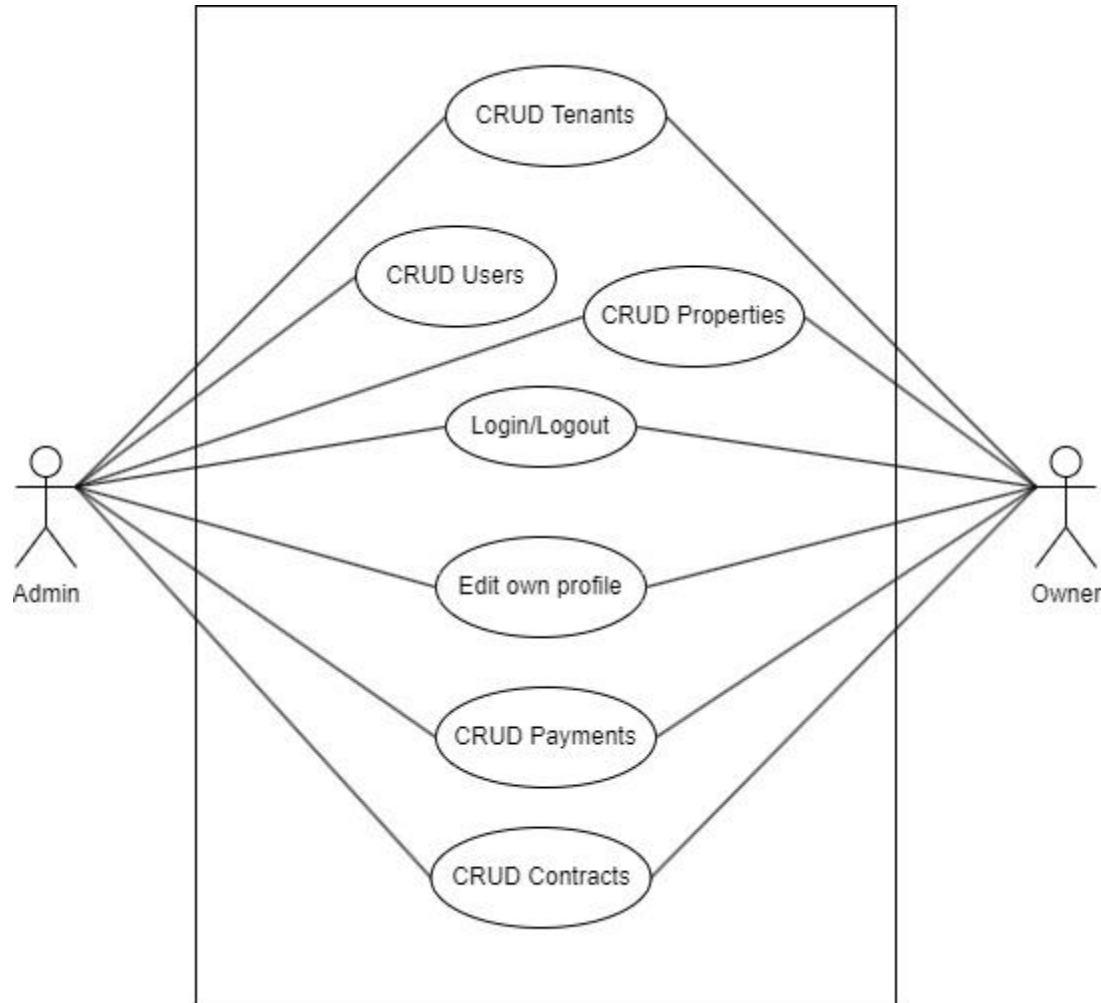


## ■ 2.2 Methodology



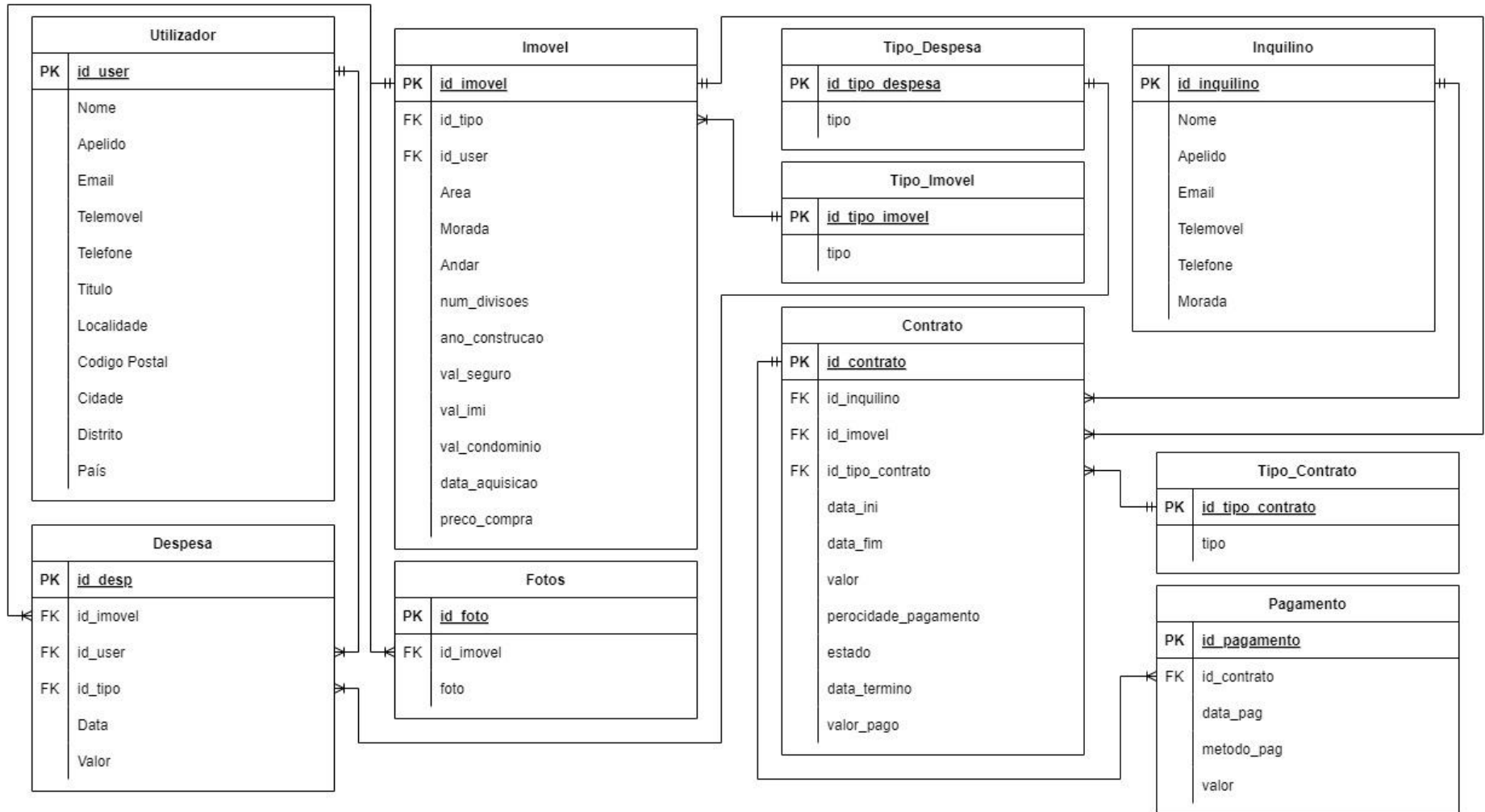
- As a team:
  - As a team, we convened every two weeks to set objectives and demonstrate the functionalities we had implemented. These meetings were held via Discord or at our school, providing us with regular opportunities to collaborate, receive feedback, and ensure that our development process remained aligned with our goals.
  
- With the company:
  - Every week or two, we conducted a Skype meeting with the supervising engineer from FTKode. These sessions allowed us to present our progress, discuss any challenges we encountered, and seek guidance on any questions we had. This regular interaction ensured that our work met the company's expectations and maintained a high standard of quality.

## 3.1. Use Case Diagram



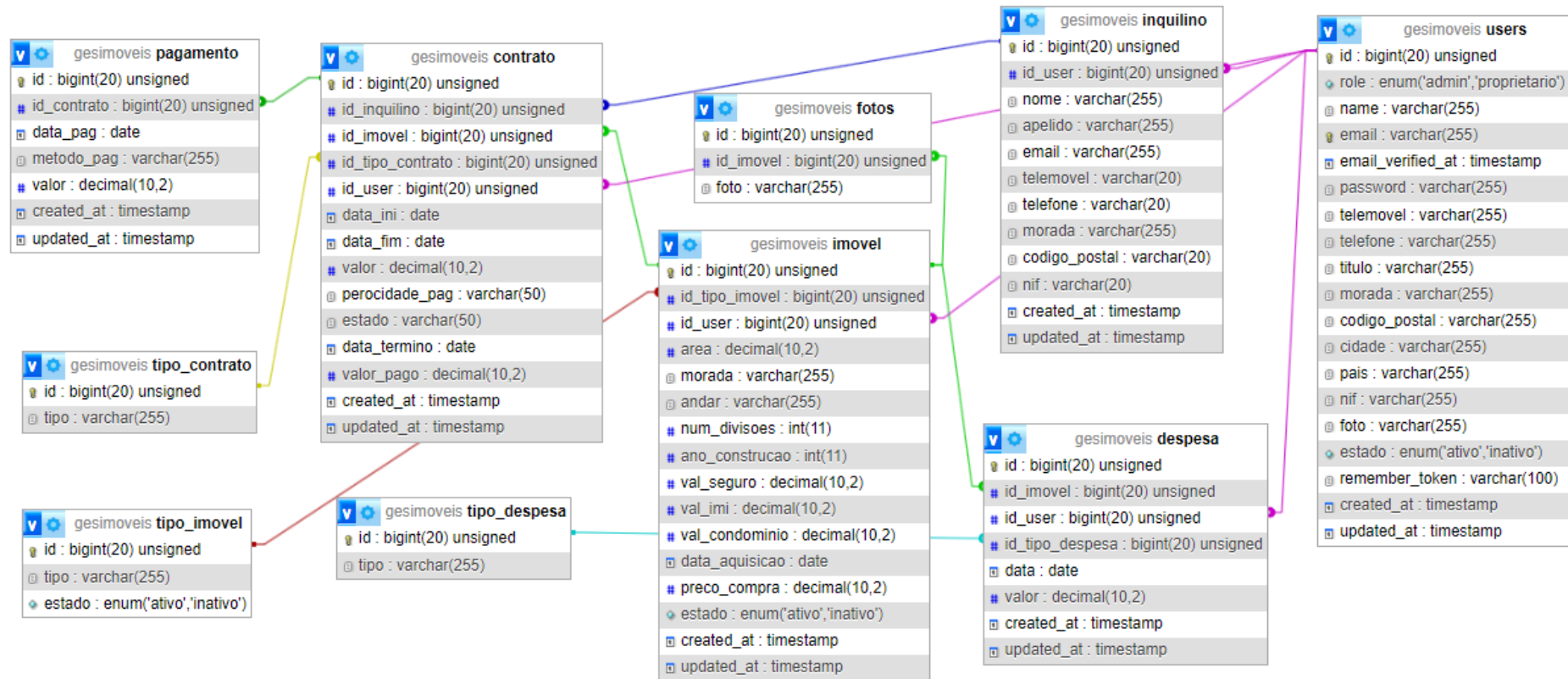


## 3.2. ER Diagram



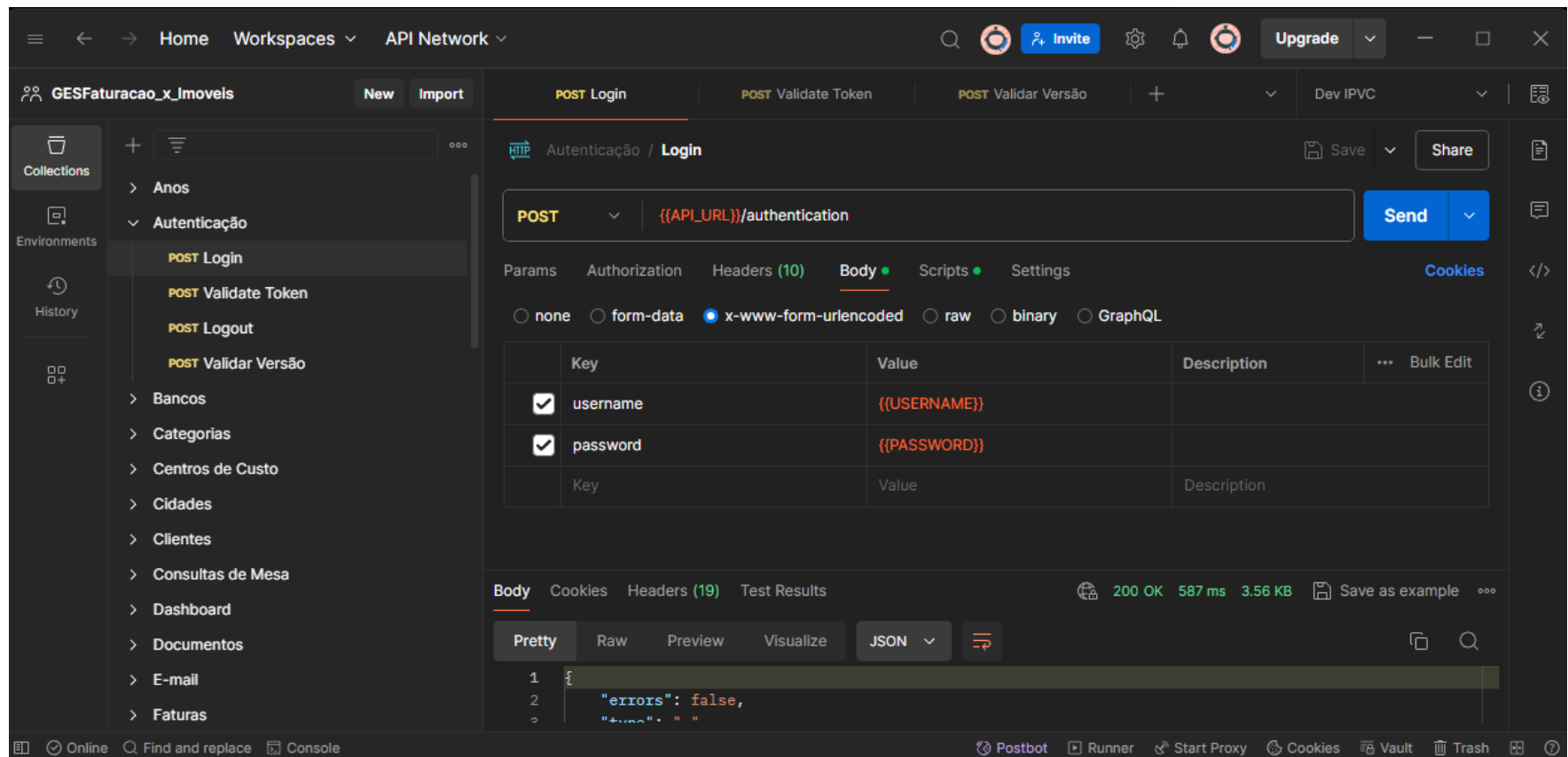
## 4. Developed features

- Database with all the needed columns to operate the web platform.



## 4. Developed features

- API access for the requests.



## 4. Developed features

- Main API endpoint to create an invoice.

The screenshot displays the Postman API client interface. The left sidebar shows the 'Collections' panel with a collection named 'GESFaturacao\_x\_Imoveis'. Under this collection, the 'Faturas' folder is expanded, showing several endpoints. The 'POST New Fatura' endpoint is selected and highlighted.

The main panel shows the configuration for the 'POST New Fatura' endpoint. The URL is set to '{{API\_URL}}/invoices'. The request body is configured with the 'x-www-form-urlencoded' format. The body contains the following data:

Key	Value	Description
client	1	int; ID
serie	27	int; ID
number	0	int; 0 por defeito
date	12/12/2023	string; ex.: 01/12/2023
expiration	12/12/2023	string; ex.: 01/12/2023
reference		string;
dueDate	0	int; Condições de pagamento

The bottom of the interface shows the 'Response' tab, which is currently empty.

## 4. Developed features

- API endpoint to send the invoice via e-mail.

The screenshot displays the Postman API client interface. The top navigation bar includes 'Home', 'Workspaces', and 'API Network'. The left sidebar shows a collection named 'GESFaturacao\_x\_Imoveis' with various endpoints listed under 'E-mail'. The main panel shows a POST request configuration for the endpoint '{{API\_URL}}/send-email'. The request body is set to 'x-www-form-urlencoded' and contains the following data:

Key	Value	Description
email	flavio.fernandes@ftcode.com	
type	OR	
document	14	

The bottom status bar shows various tools like 'Postbot', 'Runner', 'Start Proxy', 'Cookies', 'Vault', 'Trash', and 'Console'.

## ■ 5. Practical Case/Project Developed

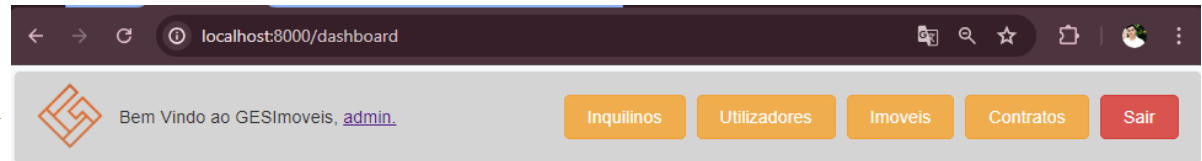
### ■ LOGIN PAGE:

A login form for 'GESImóveis'. At the top is an orange geometric logo. Below it, the text 'Bem-vindo ao GESImóveis' is displayed. There are two input fields: the first contains 'admin@ipvc.pt' and the second contains masked characters '\*\*\*\*\*'. Below the fields is an orange button labeled 'Entrar'.

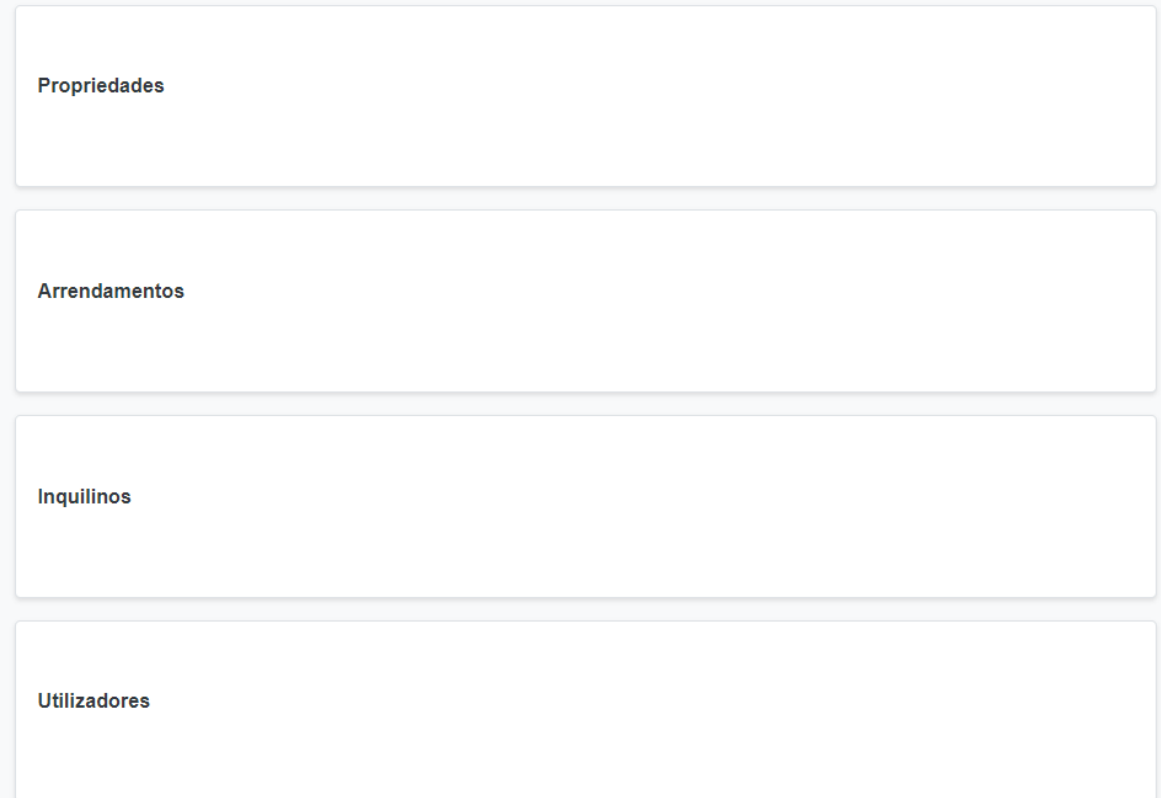
GESImóveis desenvolvido por FTCode Software© 2024 | Todos os direitos reservados.

## ■ 5. Practical Case/Project Developed

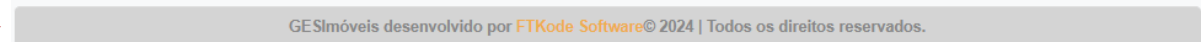
■ HEADER:



■ MAIN PAGE:



■ FOOTER:



## ■ 5. Practical Case/Project Developed

### ■ DATA LISTING EXAMPLE:



Bem Vindo ao GESImoveis, [admin](#).

Inquilinos

Utilizadores

Imoveis

Contratos

Sair

#### Lista de Inquilinos

[Adicionar Inquilino](#)

Nome	Apelido	Email	Telemóvel	Telefone	Morada	Código Postal	NIF	Ações
John	Doe2	john@example.com12	12345678933	987654321	123 Street	12345	123456789	<a href="#">Editar</a> <a href="#">Ver Contratos</a> <a href="#">Remover</a>
Jane	Doe	jane@example.com	234567890	098765432	456 Avenue	54321	987654321	<a href="#">Editar</a> <a href="#">Ver Contratos</a> <a href="#">Remover</a>
Alexandre Santos	123123123	al@ipvc.pt	123123123	123123123	123123	123123	123123123	<a href="#">Editar</a> <a href="#">Ver Contratos</a> <a href="#">Remover</a>



## ■ 5. Practical Case/Project Developed

### ■ EDIT DATA FORM:

### Editar Imóvel

Tipo de Imóvel

T2

Área

100,00

Morada

123 Street

Andar

1

Número de Divisões

3

Ano de Construção

2000

Valor do Seguro

200,00

Valor do IMI

100,00

Valor do Condomínio

50,00

Data de Aquisição

01/01/2000

Preço de Compra

100000,00

Atualizar Imóvel

## ■ 5. Practical Case/Project Developed

### ■ DETAILS AND DEACTIVATE PAGE:

Detalhes do Imóvel

Tipo de Imóvel	3
Área	100.00
Morada	123 Street
Andar	1
Número de Divisões	3
Ano de Construção	2000
Valor do Seguro	200.00
Valor do IMI	100.00
Valor do Condomínio	50.00
Data de Aquisição	2000-01-01
Preço de Compra	100000.00

Editar

Inativar

## ■ 6. Difficulties

During the development of the GESImoveis platform, we encountered several challenges. Using a new technology, Laravel, was an initial hurdle, requiring a period of adaptation and learning for the team. Implementing the layout template provided by the company was also complex, necessitating adjustments and customizations to ensure the interface was both functional and visually appealing. Integrating with the GESFaturacao API presented its own set of challenges. Ensuring accurate and secure data exchange required considerable effort in development and testing. Additionally, incorporating the database into the Laravel project was a meticulous process that demanded attention to detail to ensure data integrity and proper migration. These challenges, while demanding, provided valuable learning experiences and significantly contributed to our technical and professional growth.

## ■ 7. Conclusion

The development of the **GESImoveis** platform significantly enhanced our understanding and application of the Laravel framework. By integrating property management with GESFaturacao, we created an efficient solution for property owners and managers. This project improved our technical skills and provided valuable experience in developing real-world applications, preparing us for future professional challenges. The seamless integration with GESFaturacao highlighted the advantages of API usage in enhancing software functionality and user experience. Overall, this project has equipped us with practical skills and insights essential for our future careers in software engineering.

## ■ 8. Bibliography and Web References

- Laravel Documentation: <https://laravel.com/docs/11.x/readme>
- Rentila Software: <https://www.rentila.pt/>
- Laracasts: <https://laracasts.com/>
- ChatGPT: <https://chatgpt.com/>
- StackOverflow: <https://stackoverflow.com/>
- Github Laravel: <https://github.com/laravel/laravel>

o teu • de partida



Instituto Politécnico  
de Viana do Castelo

[www.ipvc.pt](http://www.ipvc.pt)