



Instituto Politécnico
de Viana do Castelo



Escola Superior
de Tecnologia e Gestão

GRADUATION IN INFORMATICS ENGINEERING

TITLE OF THE PROJECT

■ Course Unit: Project III

Primeiro e Último Nome Nº xxxx

Primeiro e Último Nome Nº yyyyy

School Year: 2020/2021

■ **Coordinator: Prof. Doctor ZZZZZZZ**

Instituto Politécnico de Viana do Castelo
Escola Superior de Tecnologia e Gestão
www.ipvc.pt

■ Summary

1. Introduction and Objectives
2. Technologies, tools, libraries, methodology and project management
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 - 2.3 Technologies and Architecture
3. Use Cases, Users Analysis, Class Diagram
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 - 3.3 Class Diagram / E-R Diagram
 - 3.4 Database Schema
4. Developed features
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6. Difficulties, future features and Final thoughts
7. Conclusion and Future Work
8. Bibliography and Web References

■ 1. Introduction and Objectives

The main objective of this project is the development of a web portal that allows the promotion and sale of tourism products and packages in the national market, more specifically, in an initial phase, in the municipality of Viana do Castelo.



Disclose visitable destinations of interest in a given tourist region



Enable business and other entities, active in the tourism sector, to make their products or services known



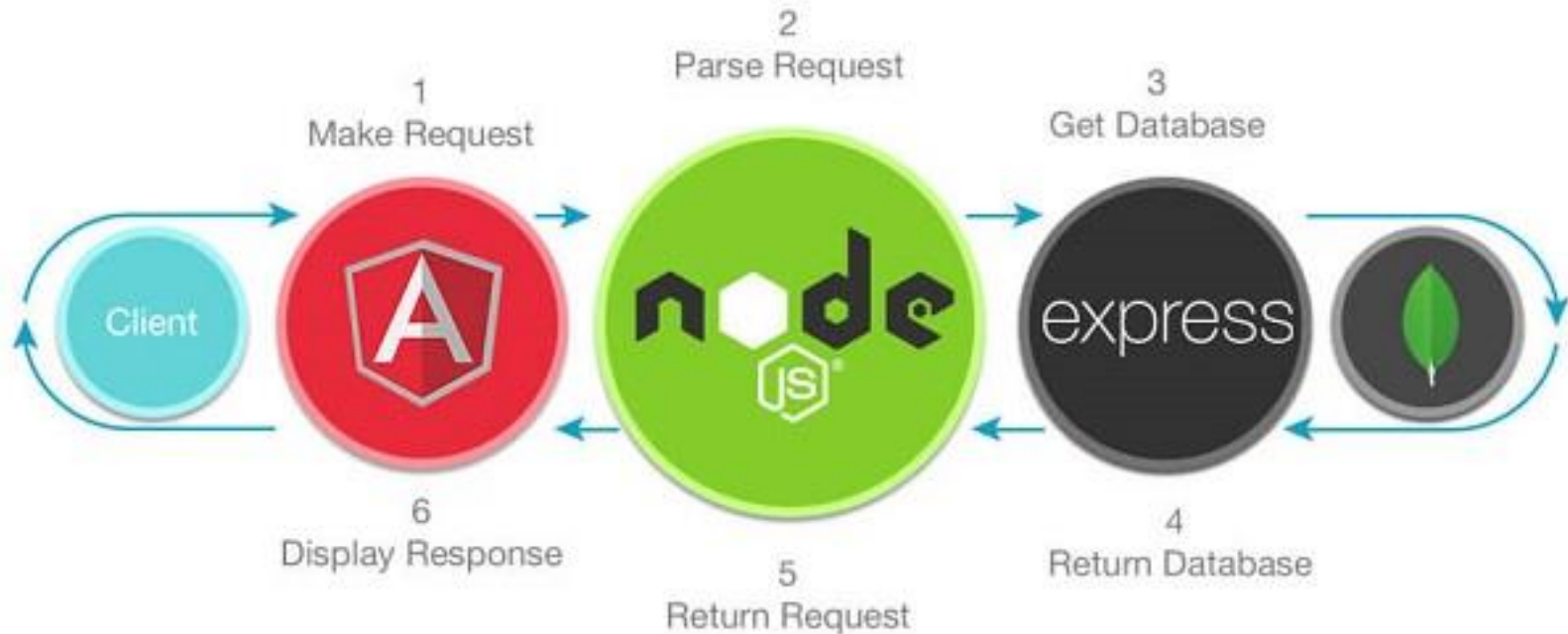
Allow online sale of products or packages of tourist products

■ 2. Technologies, tools and libraries

Project III



■ 2.1. Programming Environment

MEAN

==

MONGO

+

EXPRESS

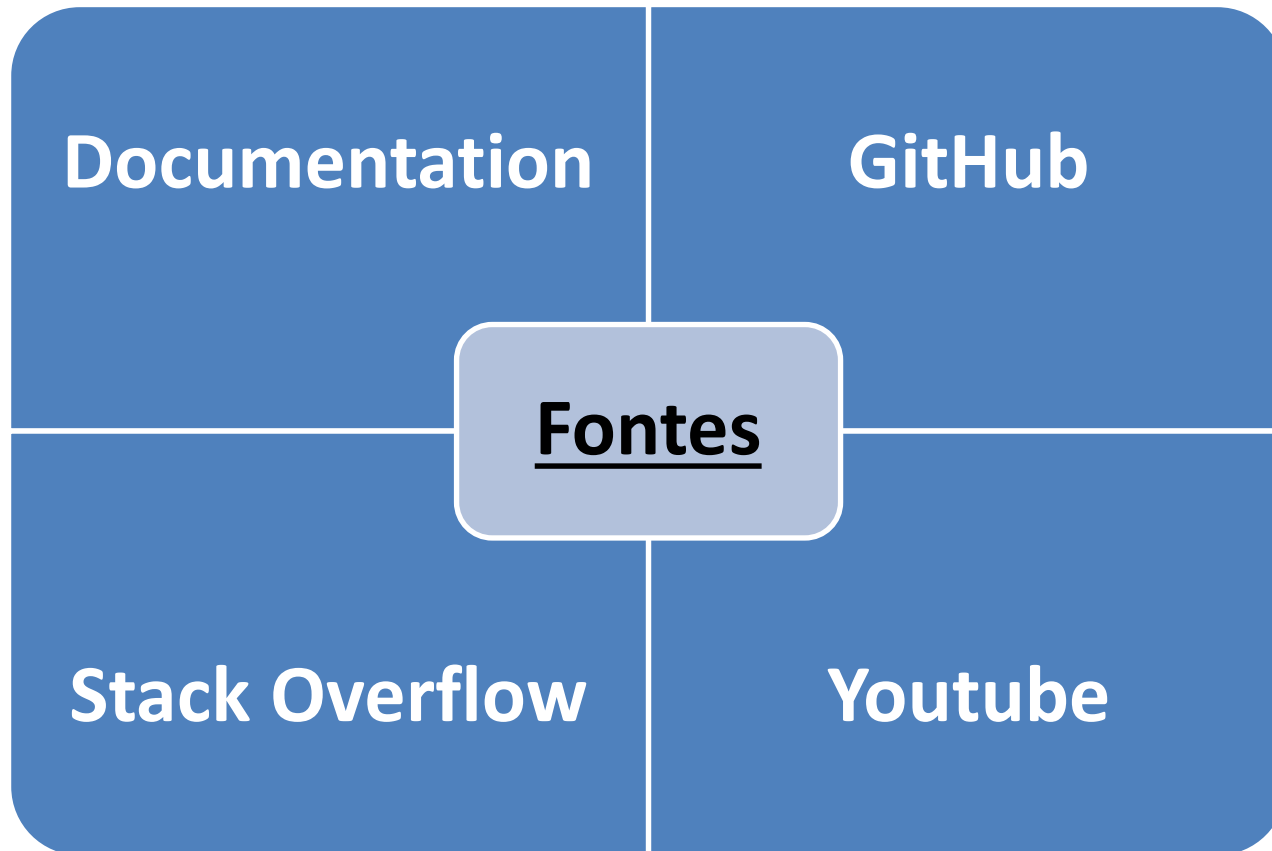
+

ANGULAR

+

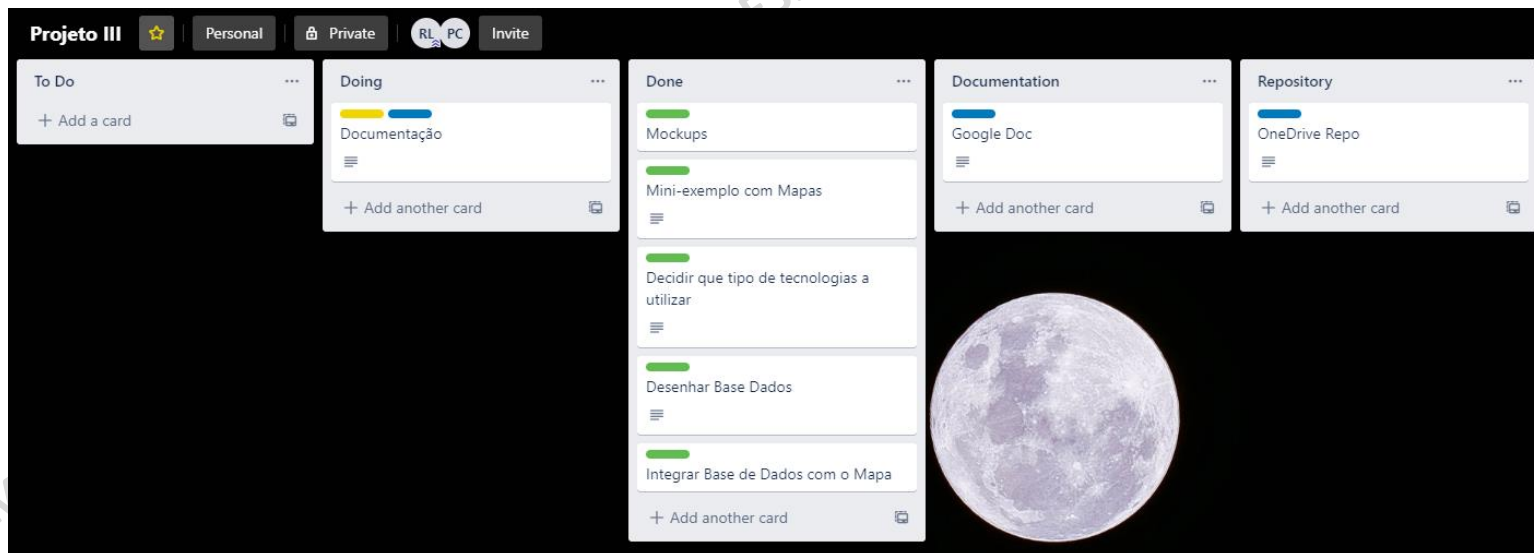
NODE

■ 2.2 Methodology

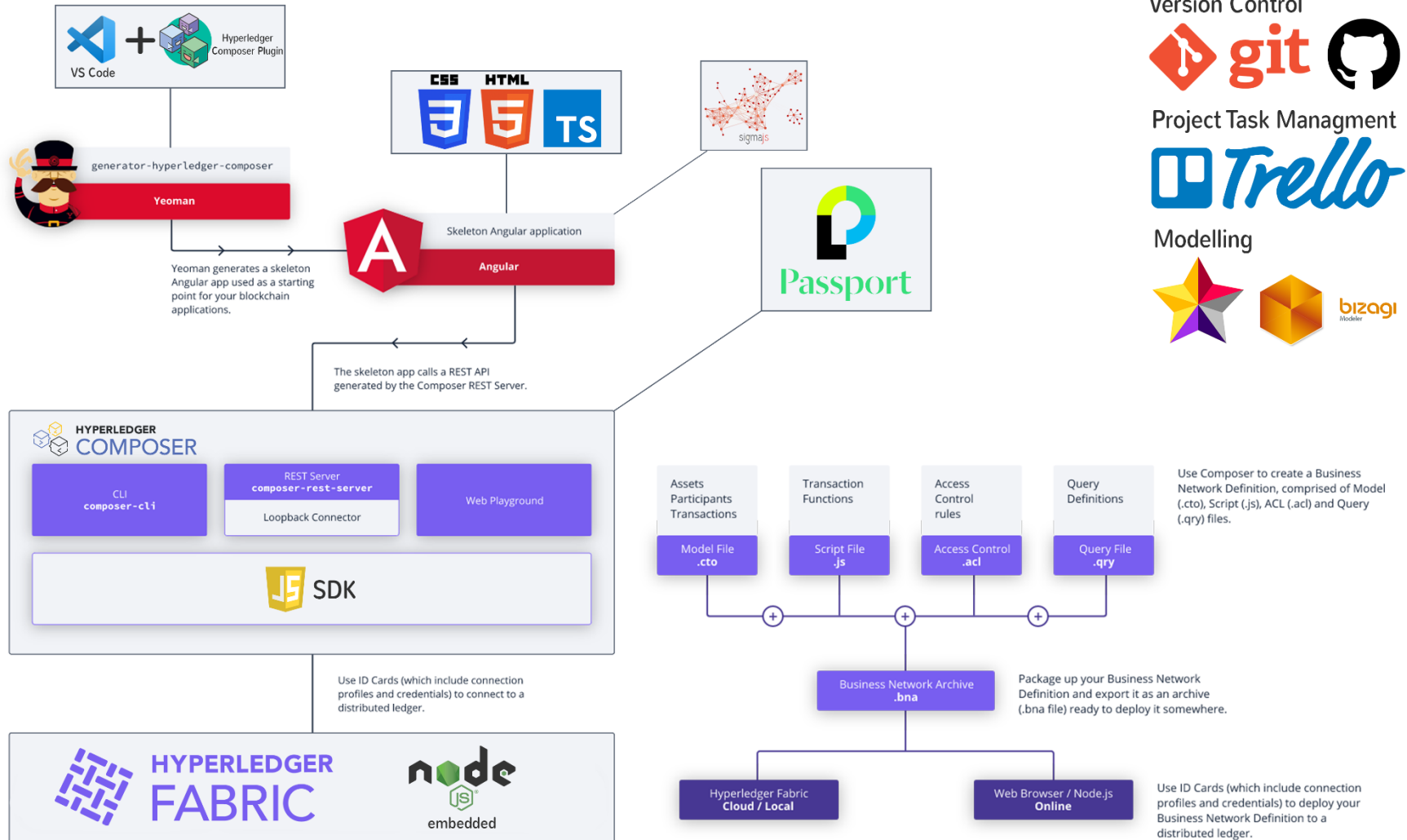


■ 2.2 Project Management

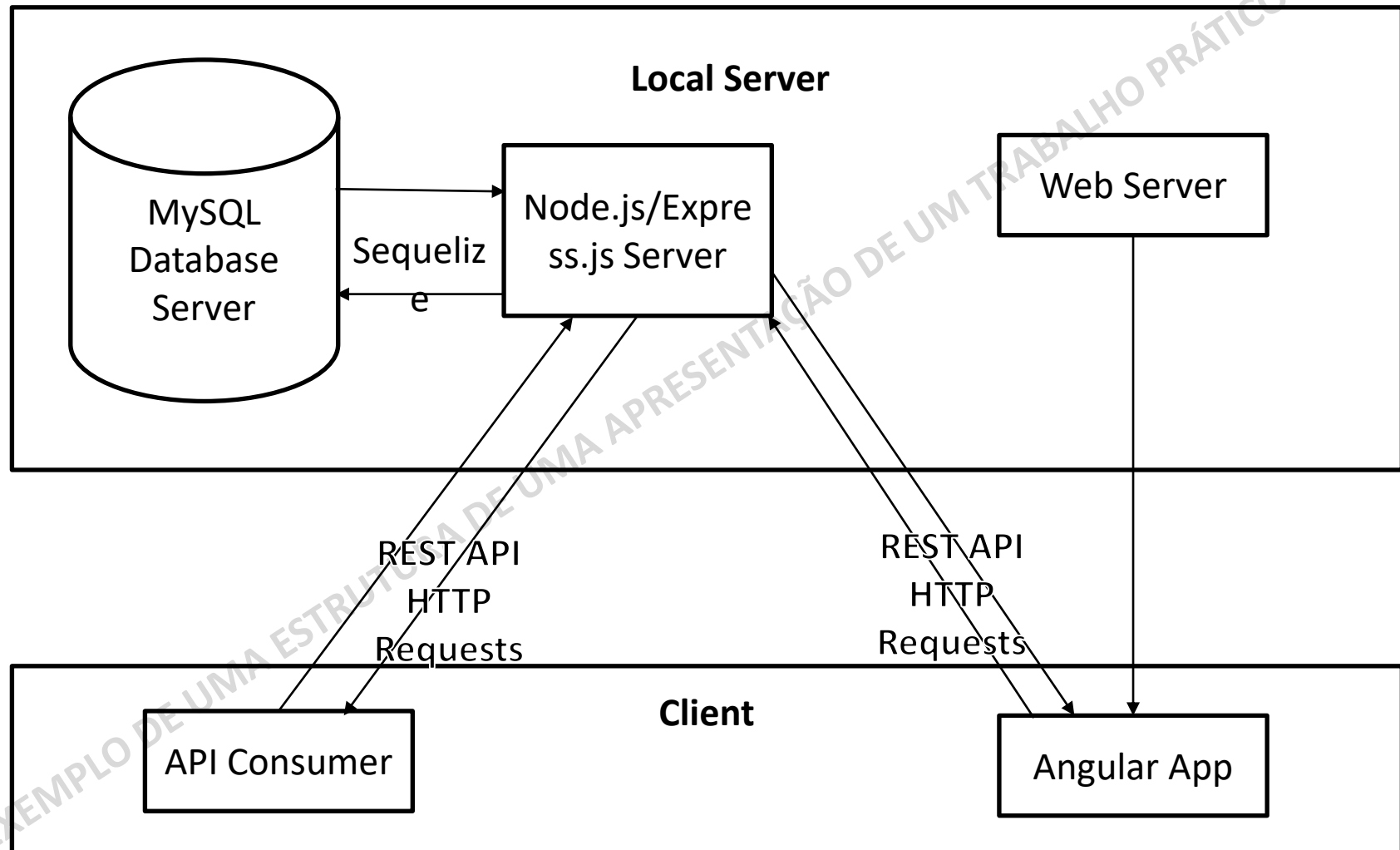
- I used trello to keep track of what i needed to do, or plan what to do next, and i also shared the board with the teacher, so he could add some cards as well.
- For this project, i decided to divide my Trello Board, in five lists: To Do, Doing, Done, Documentation, Repository.
- The “To Do”, “Doing” and “Done” lists are pretty explanatory.
- The “Documentation” list had the link to a Google Doc containing the bibliography.
- The “Repository” list had the link to an OneDrive shared folder, so i could share all the work that i was doing (ex: mockups, mini-examples, final project, etc...).



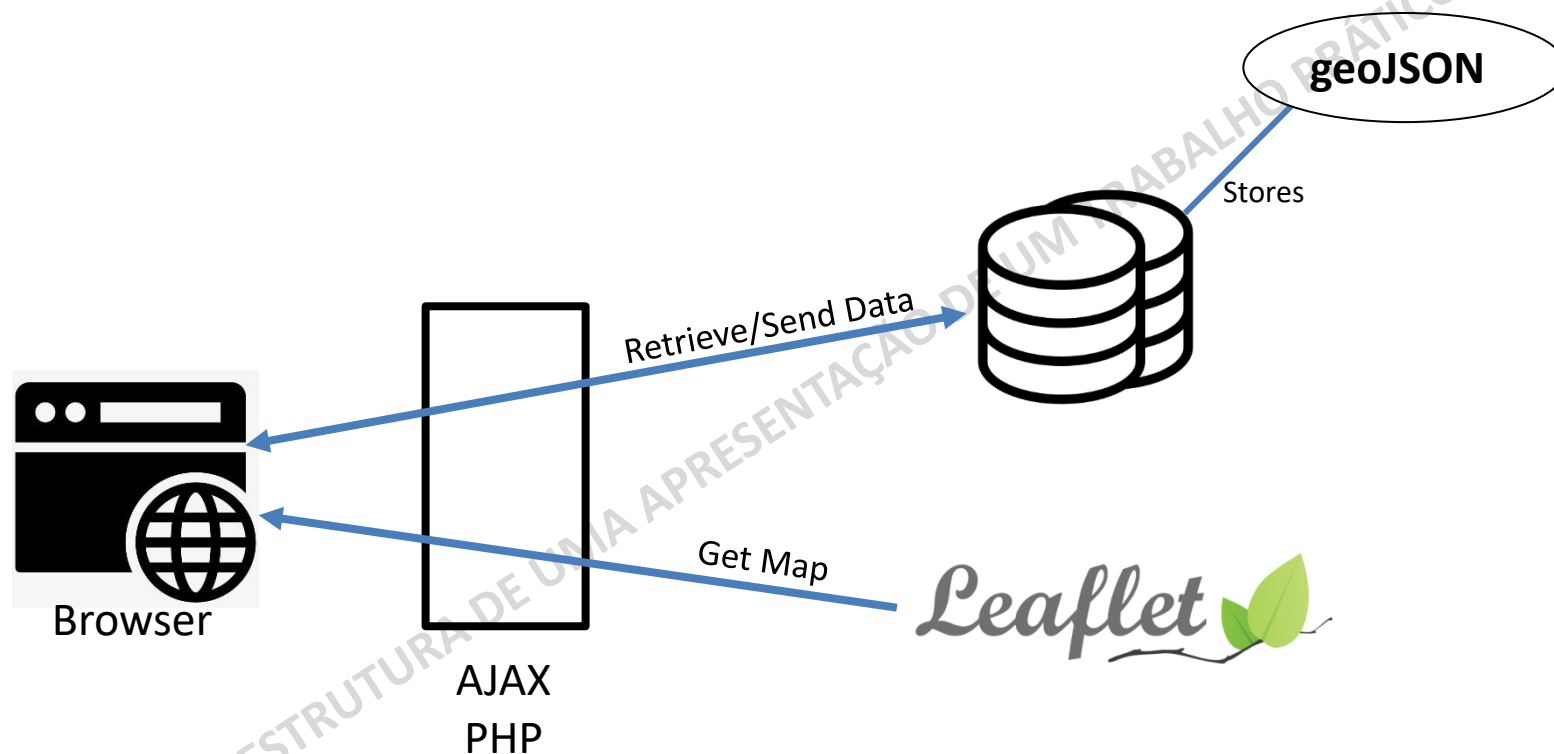
2.3 Technologies & Architecture



2.3 Architecture

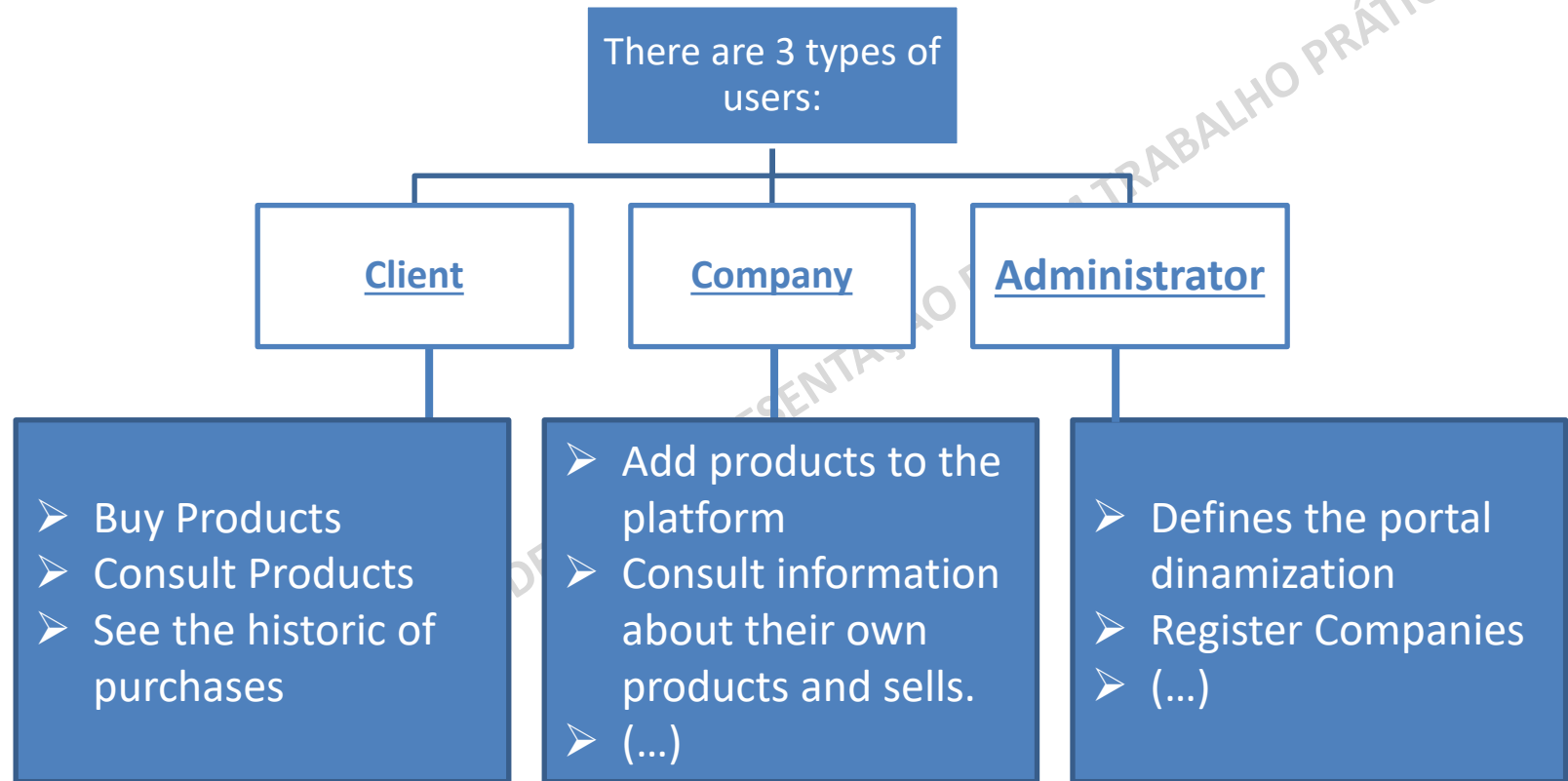


■ 2.3. Architecture

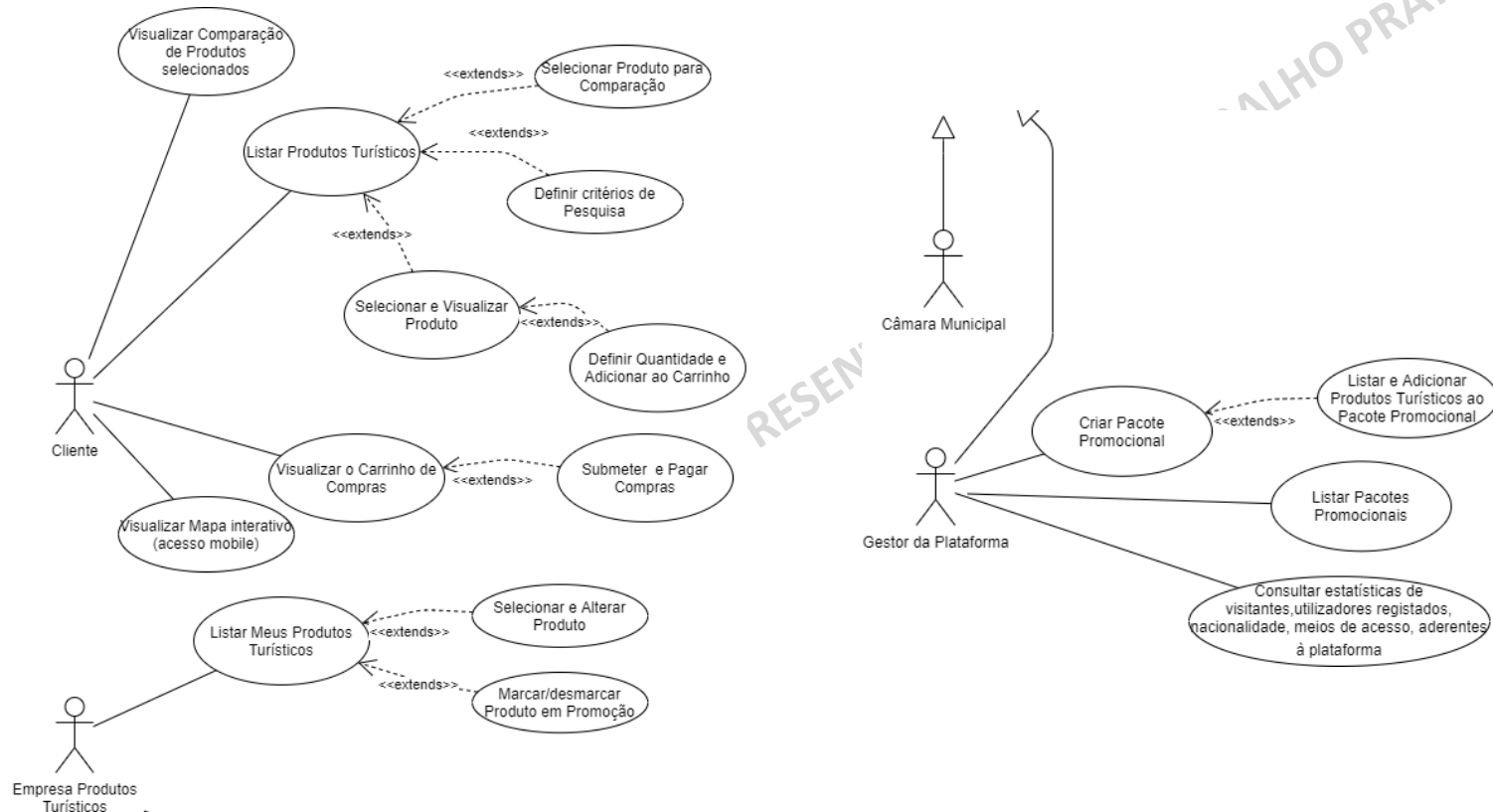


■ 3. Use Cases, Users Analysis, Class Diagram

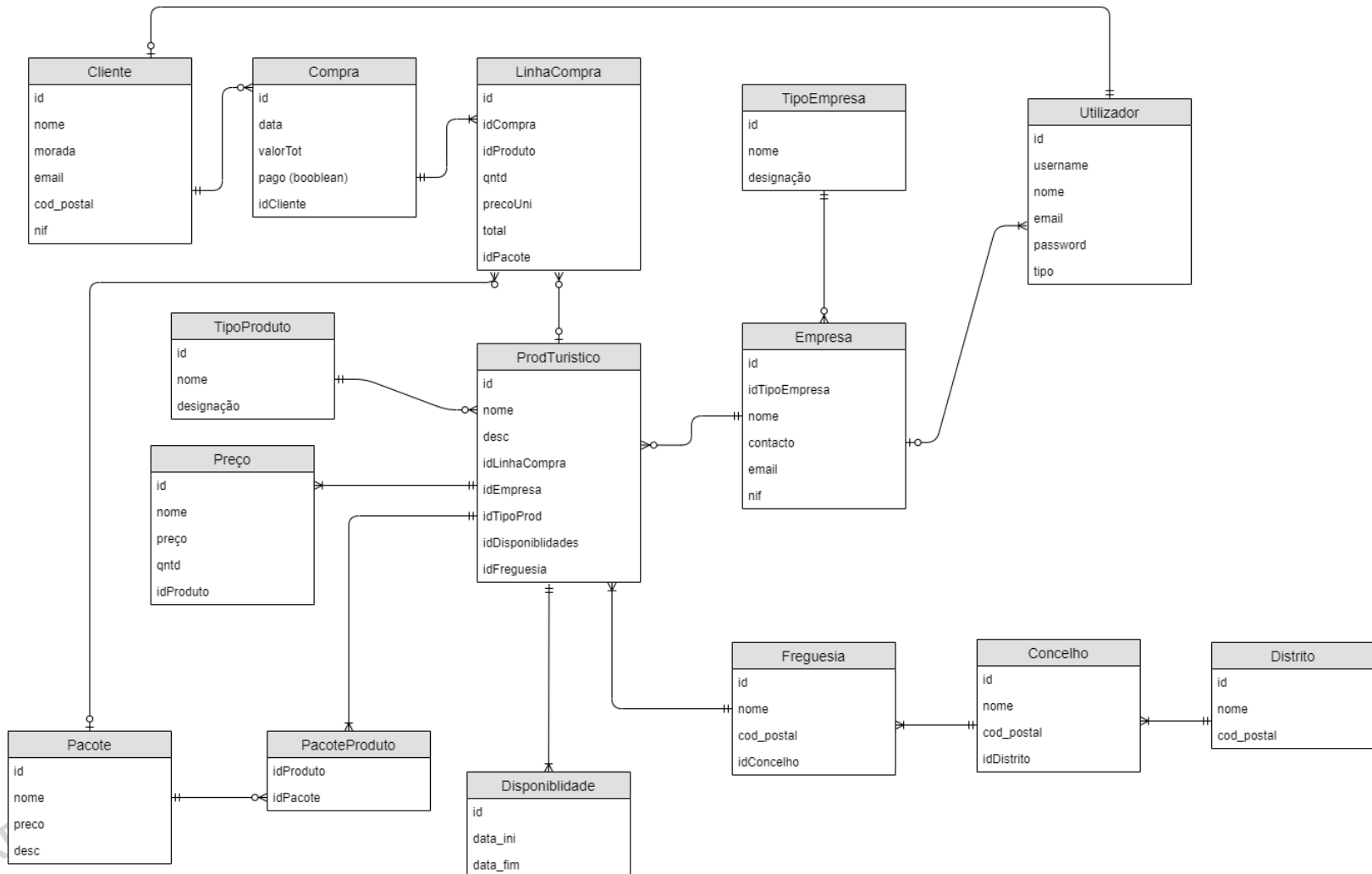
■ 3.1 Users Analysis



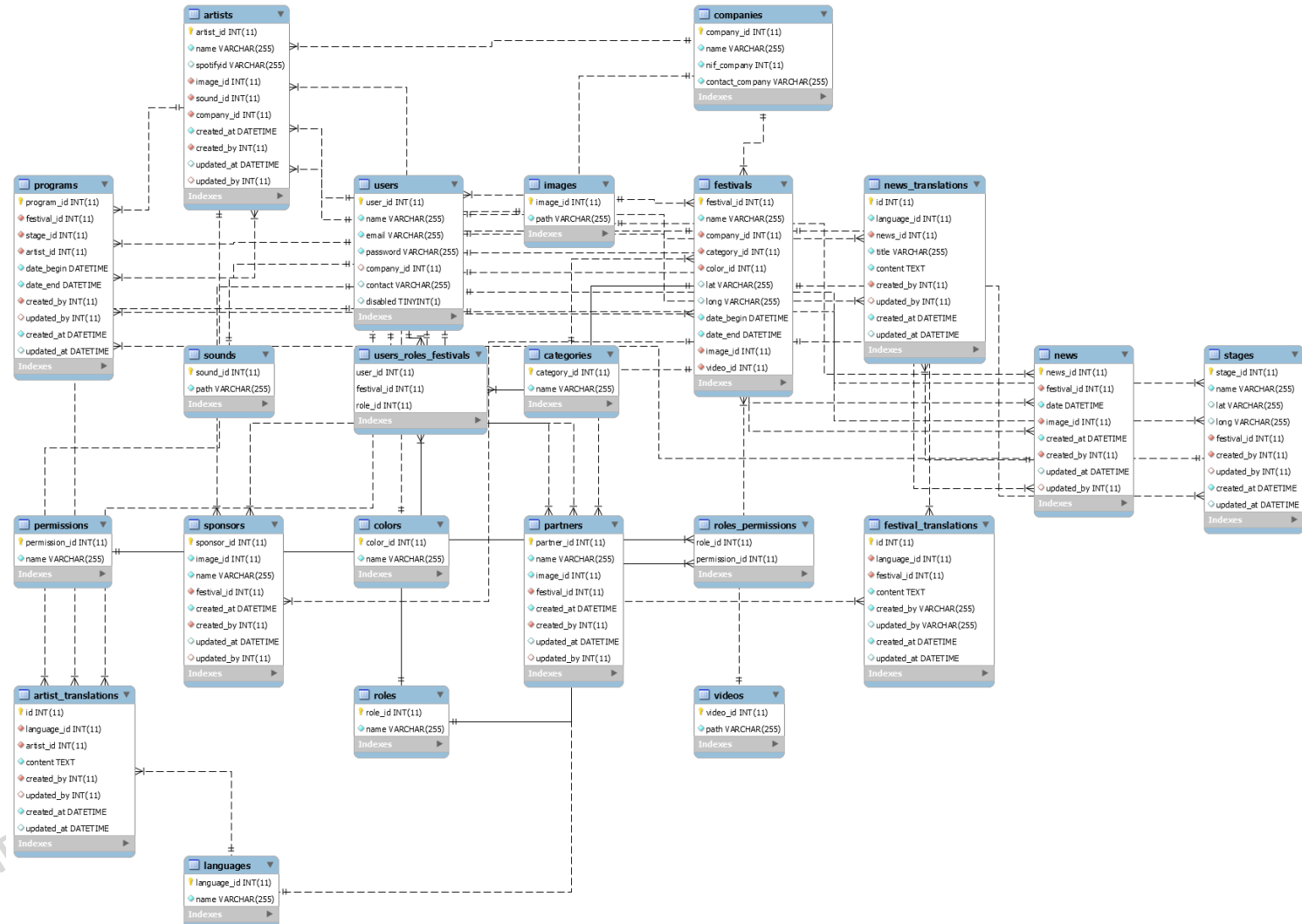
3.2. Use Case Diagram



3.3. Class Diagram / E-R Diagram



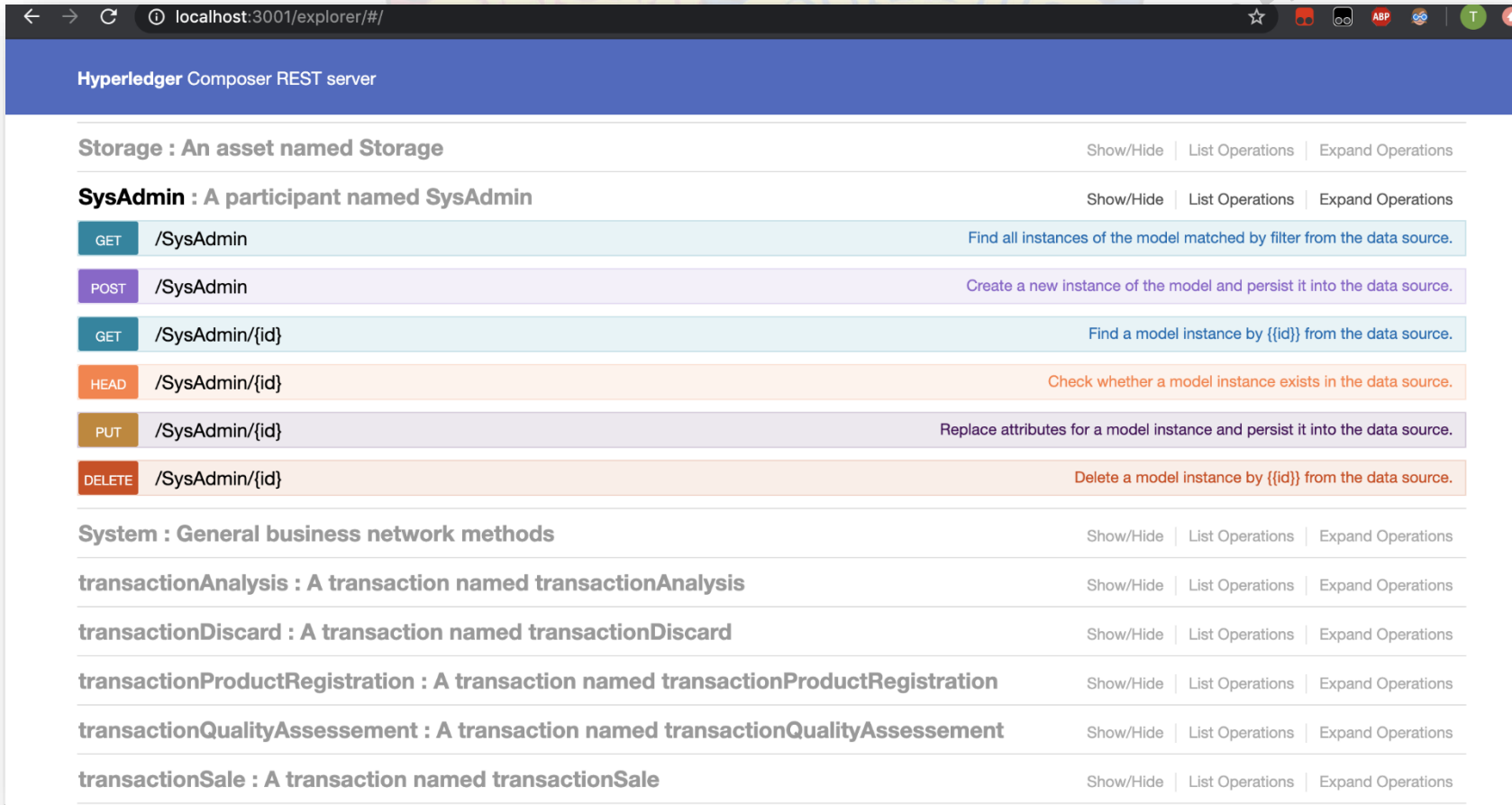
3.4. Database Schema



EXEMP

■ 4. Developed features

- Provide an API for the operators' system app to integrate

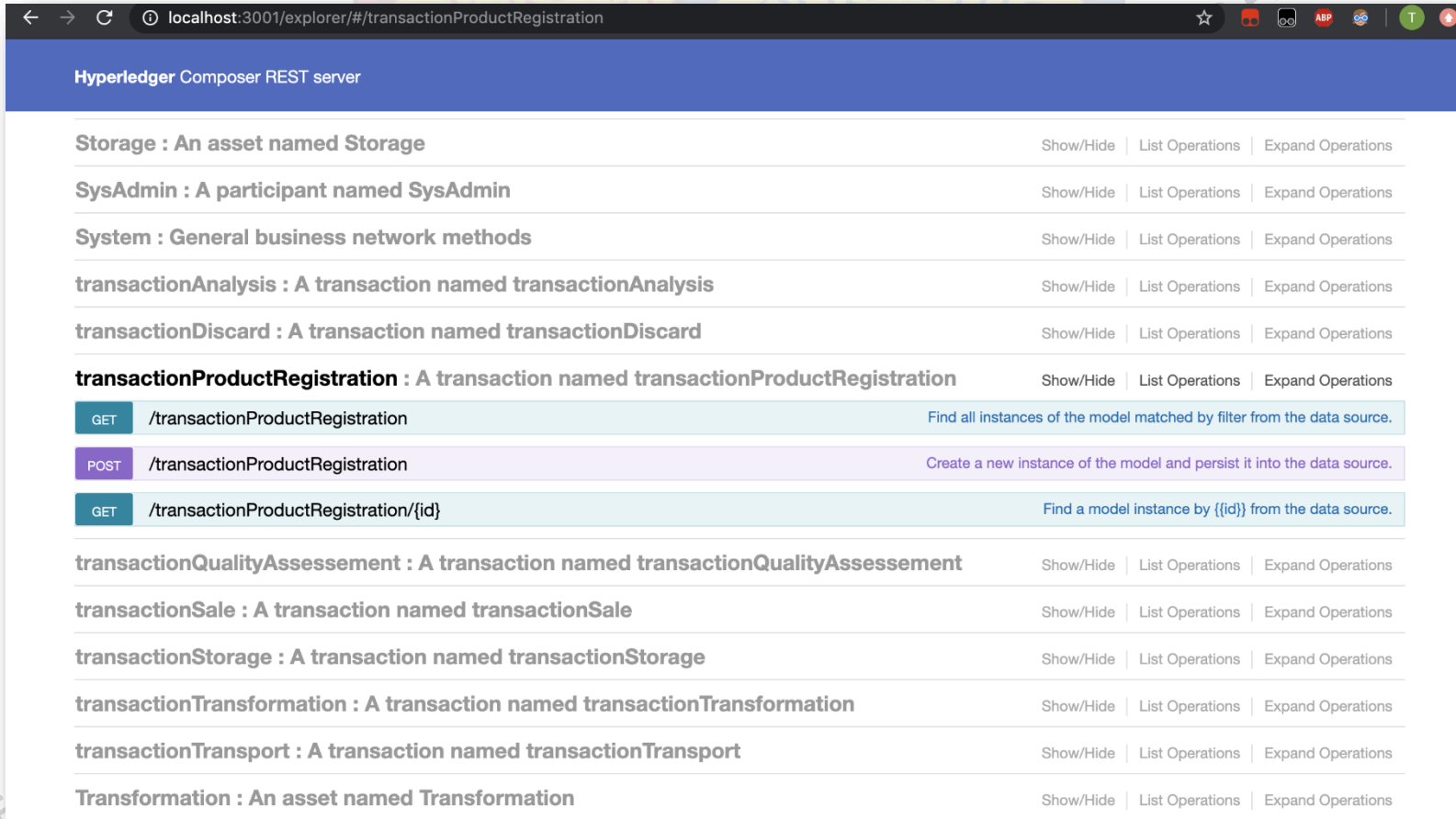


The screenshot displays the Hyperledger Composer REST server interface in a web browser. The address bar shows the URL `localhost:3001/explorer/#/`. The interface is titled "Hyperledger Composer REST server" and lists several API endpoints categorized by resource type.

Method	Endpoint	Description
Storage : An asset named Storage		
GET	/SysAdmin	Find all instances of the model matched by filter from the data source.
POST	/SysAdmin	Create a new instance of the model and persist it into the data source.
GET	/SysAdmin/{id}	Find a model instance by {{id}} from the data source.
HEAD	/SysAdmin/{id}	Check whether a model instance exists in the data source.
PUT	/SysAdmin/{id}	Replace attributes for a model instance and persist it into the data source.
DELETE	/SysAdmin/{id}	Delete a model instance by {{id}} from the data source.
System : General business network methods		
transactionAnalysis : A transaction named transactionAnalysis		
transactionDiscard : A transaction named transactionDiscard		
transactionProductRegistration : A transaction named transactionProductRegistration		
transactionQualityAssesement : A transaction named transactionQualityAssesement		
transactionSale : A transaction named transactionSale		

■ 4. Developed features

- Provide an API for the operators' system app to integrate



The screenshot displays the Hyperledger Composer REST server interface. The browser address bar shows the URL: `localhost:3001/explorer/#/transactionProductRegistration`. The page title is "Hyperledger Composer REST server".

The interface lists several transactions and their associated REST API endpoints:

Transaction Name	REST API Endpoints	Description
Storage : An asset named Storage	Show/Hide List Operations Expand Operations	
SysAdmin : A participant named SysAdmin	Show/Hide List Operations Expand Operations	
System : General business network methods	Show/Hide List Operations Expand Operations	
transactionAnalysis : A transaction named transactionAnalysis	Show/Hide List Operations Expand Operations	
transactionDiscard : A transaction named transactionDiscard	Show/Hide List Operations Expand Operations	
transactionProductRegistration : A transaction named transactionProductRegistration	Show/Hide List Operations Expand Operations	
GET /transactionProductRegistration	Find all instances of the model matched by filter from the data source.	
POST /transactionProductRegistration	Create a new instance of the model and persist it into the data source.	
GET /transactionProductRegistration/{id}	Find a model instance by {{id}} from the data source.	
transactionQualityAssesement : A transaction named transactionQualityAssesement	Show/Hide List Operations Expand Operations	
transactionSale : A transaction named transactionSale	Show/Hide List Operations Expand Operations	
transactionStorage : A transaction named transactionStorage	Show/Hide List Operations Expand Operations	
transactionTransformation : A transaction named transactionTransformation	Show/Hide List Operations Expand Operations	
transactionTransport : A transaction named transactionTransport	Show/Hide List Operations Expand Operations	
Transformation : An asset named Transformation	Show/Hide List Operations Expand Operations	

■ 5. Practical Case/Project Developed

Project III

E-Tour Home Empresa Administrador empresa Opções



Bem-vindo ao E-Tour

Filtros

Nome

Tipologias

Hotelaria

Restauração

Animação


Viagens

Disponibilidades

26/06 - 27/06

02/07 - 10/07

Freguesias



Festa da Francesinha

Stock: 18


Início: 26/06/2020

Fim: 27/06/2020

Empresa: empresa

Designação: Criada pelos franceses, adorada pelos portugueses...

15€ [Comprar](#)



Hotel Flor de Sal

Stock: 5


Início: 26/06/2020

Fim: 27/06/2020

Empresa: empresa

Designação: Muito mais do que um hotel...

89€ [Comprar](#)



Travessia de Ferry

Stock: 20

Início: 02/07/2020

Fim: 10/07/2020

Empresa: empresa

Designação: O contacto com a água é relaxante...

10€ [Comprar](#)



EXEMPLO

■ 5. Practical Case/Project Developed

ÁTICO

E-Tour Home Empresa Administrador empresa Opções ▾

Carrinho

Imagem	Produto	Stock	Quantidade	Custo Unitário	Preço por Linha	
	Festa da Francesinha	18	<input type="button" value="-"/> 2 <input data-bbox="975 763 1018 803" type="button" value="+"/>	15	30	<input type="button" value="X"/>
	Hotel Flor de Sal	5	<input type="button" value="-"/> 4 <input data-bbox="975 899 1018 939" type="button" value="+"/>	89	356	<input type="button" value="X"/>
					Total	386.0€
					Total com IVA	474.78€
<input type="button" value="Continuar Compras"/>						<input type="button" value="Pagar"/>

EXE

■ 5. Practical Case/Project Developed

E-Tour Home Empresa Administrador empresa Opções ▾

Criar Produto

Consultar Produtos

Vendas Realizadas

Criar Disponibilidade

Atualizar

IMAGEM	NOME	STOCK	PREÇO	TIPO	FREGUESIA	INICIO	FIM	
	Festa da Francesinha	18	15	Restauração	Barcelinhos	26/06/2020	27/06/2020	
	Hotel Flor de Sal	5	89	Hotelaria	Ermesinde	26/06/2020	27/06/2020	
	Travessia de Ferry	20	10	Viagens	Adães	02/07/2020	10/07/2020	
	Travessia de Ferry	20	10	Viagens	Adães	02/07/2020	10/07/2020	
	Travessia de Ferry	20	10	Viagens	Adães	02/07/2020	10/07/2020	

EXEMPLO

■ 5. Practical Case/Project Developed

E-Tour Home Empresa Administrador empresa Opções ▾

[Criar Empresa](#)[Consultar Utilizadores](#)[Tipos de Empresa](#)[Localidades](#)[Tipos de Produto](#)[Criar Pacotes](#)[Consultar Pacotes](#)

Criar Empresa

Email

Nome

Contacto

NIF

Tipo de Empresa

[Criar](#)

EXEMPLO

■ 6. Difficulties & future features

Difficulties:

- Incorporate Hyperledger Composer and Angular web-app
- Due to the fact that Hyperledger Composer has been deprecated since August 2019, it was difficult finding useful documentation and examples regarding the development of this specific framework.
- Login system: Dynamic Multiplatform Authentication

Future features:

- Apache Kafka queue implementation
- Leaflet map for traceability route display
- Incorporate Hyperledger Composer and Angular web-app
- Login system fix

■ 6. Final thoughts

- It was a great experience being able to work with a different and revolutionary technology like blockchain that has so much potential right now and for years to come.
- It was also interesting to work and integrate all the different technologies present in this project architecture.

EXEMPLO DE UMA ESTRUTURA DE UMA APRESENTAÇÃO DE UM TRABALHO PRÁTICO

■ 7. Conclusion

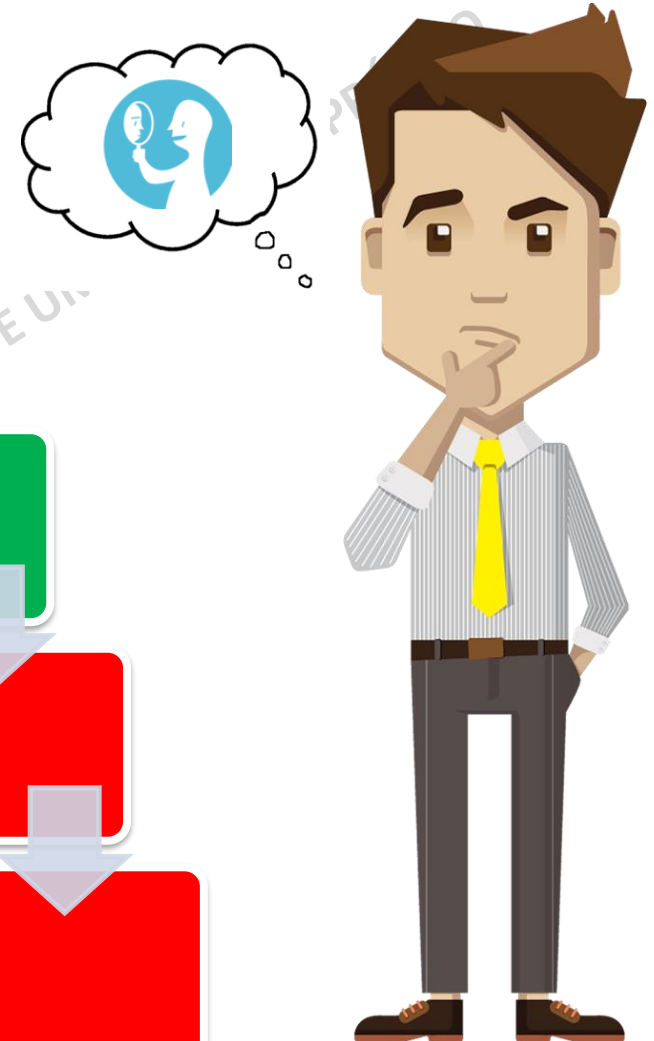
Using frameworks on web development

Understanding the concepts related to a Tourism platform

Working as a team and using collaboration tools

Organization and Schedules
Difficulties

Overlapping of practical works
and exams



■ 7. Future Work

- Develop.....
- Improve the implementation xxxx
-

EXEMPLO DE UMA ESTRUTURA DE UMA APRESENTAÇÃO DE UM TRABALHO PRÁTICO

■ 8. Bibliography and Web References

- Geographical indications and traditional specialities in the European Union:

https://en.wikipedia.org/wiki/Geographical_indications_and_traditional_specialities_in_the_European_Union

- Hyperledger Composer:

<https://hyperledger.github.io/composer/latest/introduction/introduction.html>

- Quality schemes explained:

https://ec.europa.eu/info/food-farming-fisheries/food-safety-and-quality/certification/quality-labels/quality-schemes-explained_en

- Building a blockchain application using Hyperledger Fabric with Angular Frontend

<https://medium.com/coinmonks/building-a-blockchain-application-using-hyperledger-fabric-with-angular-frontend-part-1-f070bf169231>