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**Coding Kittens**

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**BuyMee**  
**Software Architecture Document**

**Version 1.3**

BuyMee	Version: 1.3
Software Architecture Document	Date: 28/08/2023

## Revision History

Date	Version	Description	Author
05/08/2023	1.0	Document fill-ins	Team
09/08/2023	1.1	Section 4. Package diagram fix, delete ClientHandler from component Controller.	Nguyễn Thế Thiện
19/08/2023	1.2	Section 5-6 fill-ins	Nguyễn Thế Thiện
28/08/2023	1.3	Update section 5, 6: System restructure	Nguyễn Thế Thiện

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# Software Architecture Document

## 1. Introduction

### 1.1 Purpose

This Software Architecture Document provides the reader an overview of the system structure and how components of the structure work.

This document shall be used as a basis for choosing the system structure to work and develop based on, as well as for considering changes and decisions on the system structure in the future.

### 1.2 Scope

This Software Architecture Document is used throughout the development of the BuyMee e-commerce website.

### 1.3 Definitions

None.

### 1.4 Acronyms and abbreviations

- UI: user interface.

### 1.5 References

None.

### 1.6 Overview

This Software Architecture Document includes:

- Architectural Goals and Constraints: The targets and requirements of the software architecture.
- Use-case Model: The use-case diagram of the software.
- Logical View: An in-depth view into how the system components work and the relationships between them.
- Deployment: How the components of the system are deployed and developed.
- Implementation View: Folder structure of the system and its components

## 2. Architectural Goals and Constraints

- Running environment:
  - o Browser: Google Chrome with the earliest version 116.0.5845.14.
  - o System: Windows 10 – 11 with no more than 1GB of RAM in usage.
- Performance: the website shall serve at most 50 users at any given time, with services taking no more than 10 seconds to respond.
- Programming languages: HTML, CSS, JavaScript
- Data: the system uses the MongoDB database to store user account and product information securely.
- UI Design: designs have to be simple and clear for the users to ensure a comfortable experience using the services.

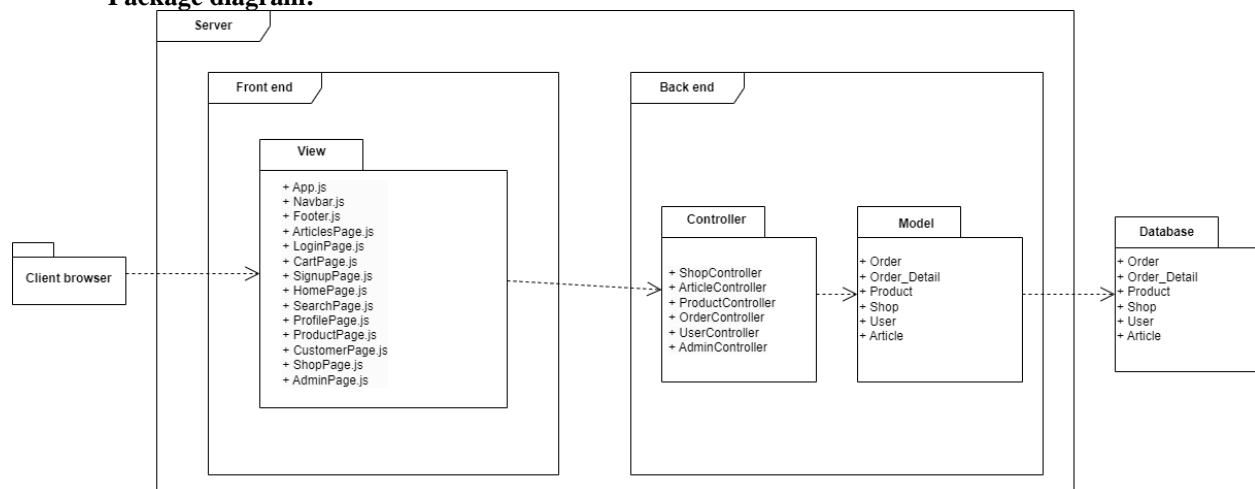
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### 3. Use-Case Model



### 4. Logical View

#### Package diagram:



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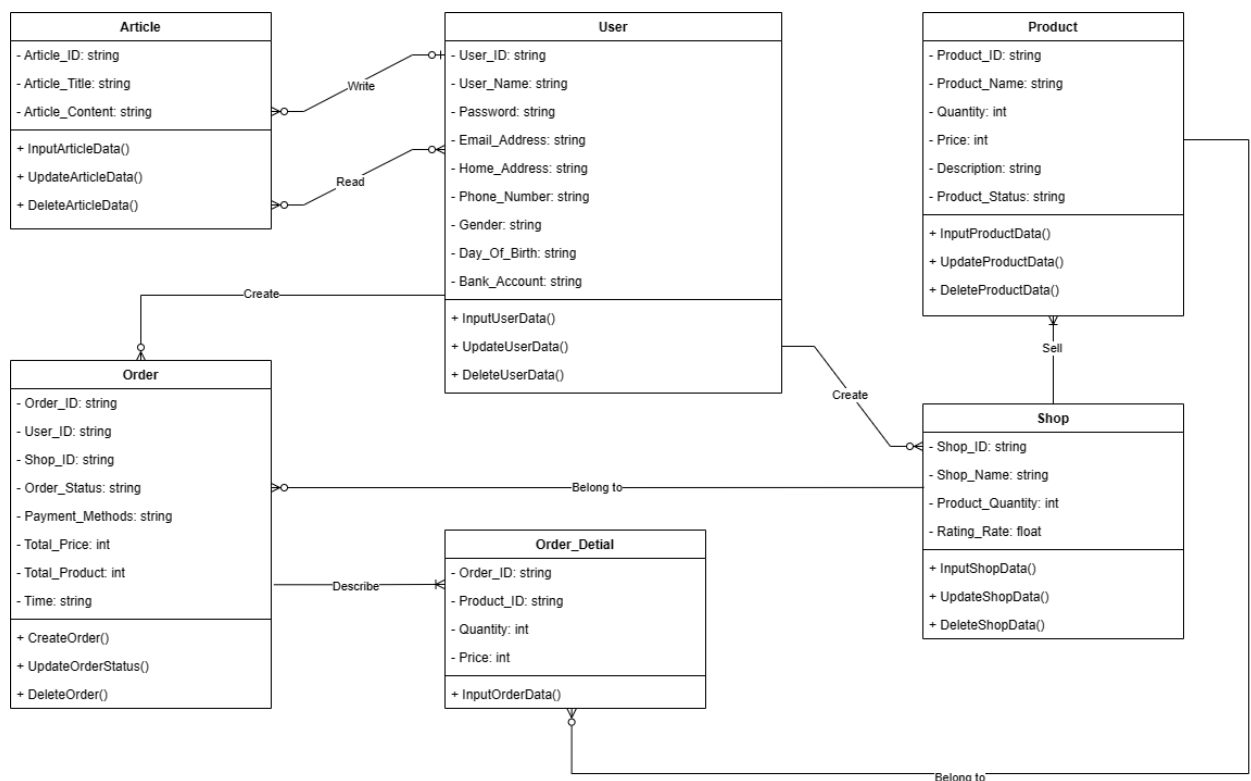
#### 4.1 Component: Database

##### Description:

The Database component is used to store the system's data, including the following tables:

- User: contains information belonging to the user class.
- Article: contains information of the article class that provides knowledge about pets for users.
- Shop: contains information belonging to the store class.
- Product: contains information belonging to the product class.
- Order: contains information of the order class to help users track order status.
- Order\_Detail: contains detailed information about the products included in the order.

##### Class Diagram:



##### Key-class explanation:

- User:
  - + User\_ID: User ID.
  - + User\_Name: Username.

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- + Password: User password.
- + Email\_Address: The email address used to recover the password when forgotten.
- + Home\_Address: The home address used for delivery.
- + Phone\_Number: Phone number used to contact when delivery.
- + Gender: User's gender.
- + Day\_Of\_Birth: User's birthday.
- + Bank\_Account: Bank account used for online payment method.

- Product:

- + Product\_ID: ID of the goods.
- + Product\_Name: The name of the goods.
- + Quantity: Quantity of goods.
- + Price: The price of the goods.
- + Description: Description of the product helps users understand its use.
- + Product\_Status: The status of the goods.

- Shop:

- + Shop\_ID: ID of the store.
- + Shop\_Name: The name of the store.
- + Product\_Quantity: Total items that the store is selling.
- + Rating\_Rate: Rate of service quality rating of the store.

- Article:

- + Article\_ID: ID of the article.
- + Article\_Title: The title of the article.
- + Article\_Content: The content of the article.

- Order:

- + Order\_ID: ID of the order.
- + User\_ID: ID of the person creating the order.
- + Shop\_ID: ID of the shop receiving the order.
- + Order\_Status: The status of the order.
- + Payment\_Methods: User's payment method.
- + Total\_Price: Total price of the order.
- + Total\_Product: Total product of the order.

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+ Time: Time to create the order.

- Order\_Detail:

+ Order\_ID: ID of the order.

+ Product\_ID: ID of the product.

+ Quantity: Quantity of the product.

+ Price: Price corresponding to the quantity of products.

## 4.2 Component: Model

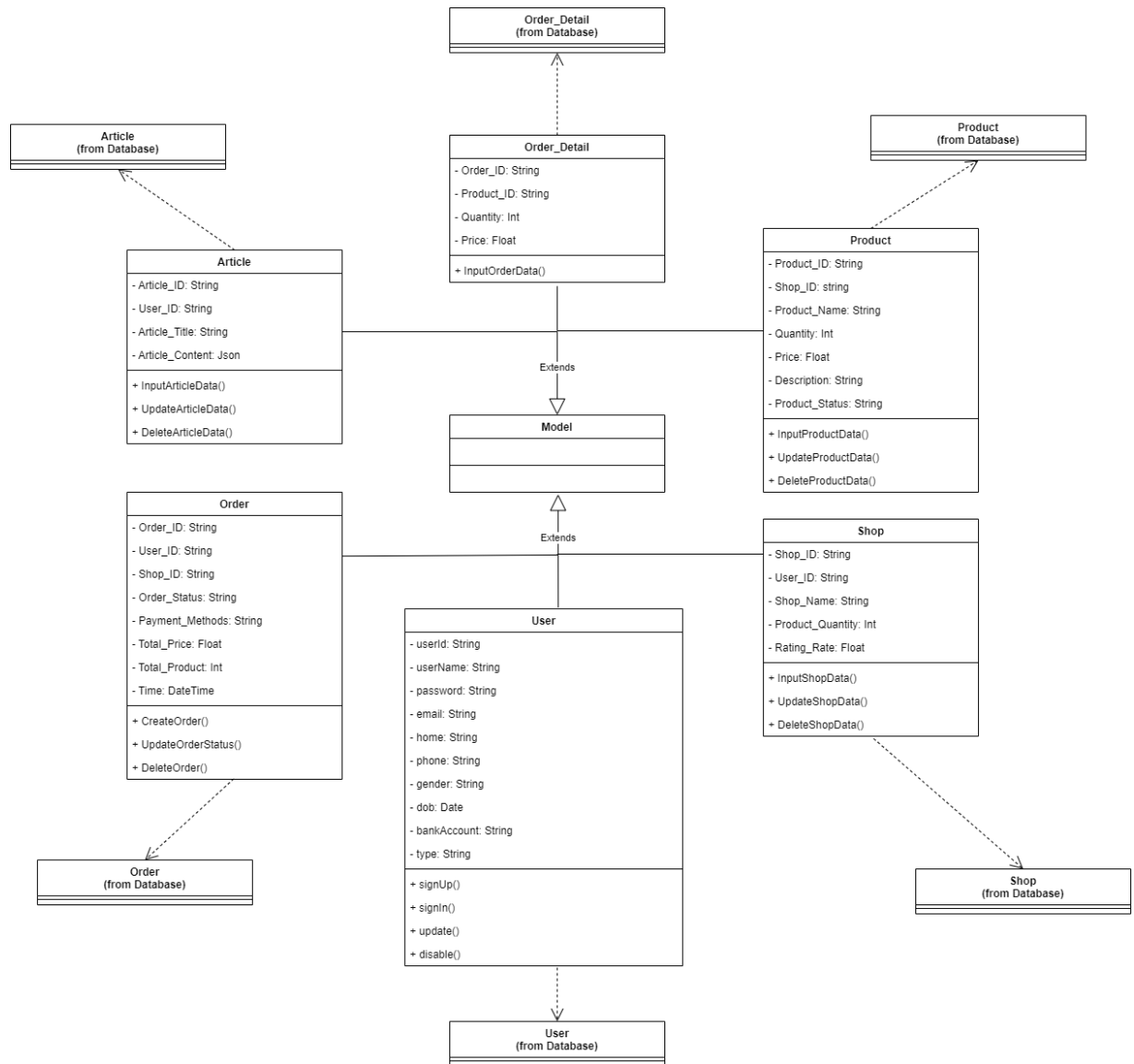
Description: The component model includes the following classes that represent data structure properties when the application communicates with the database server:

- Article: Model represents articles published on the system, such as articles introducing products, news about promotions, etc.
- Order: Model represents orders created by customers on the system.
- Product: Model represents the products sold on the system.
- Shop: Model represents the stores on the system.
- User: Model represents the users on the system.
- Order\_Detail: Model represents the detailed items of the order, including the products purchased and the product quantity.

### Class Diagram:



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### Key-class explanation:

- User:

- + User\_ID: User ID.
- + User\_Name: Username.
- + Password: User password.
- + Email\_Address: The email address used to recover the password when forgotten.
- + Home\_Address: The home address used for delivery.
- + Phone\_Number: Phone number used to contact when delivery.
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- + Total\_Price: Total price of the order.
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- Order\_Detail:

- + Order\_ID: ID of the order.
- + Product\_ID: ID of the product.
- + Quantity: Quantity of the product.
- + Price: Price corresponding to the quantity of products.

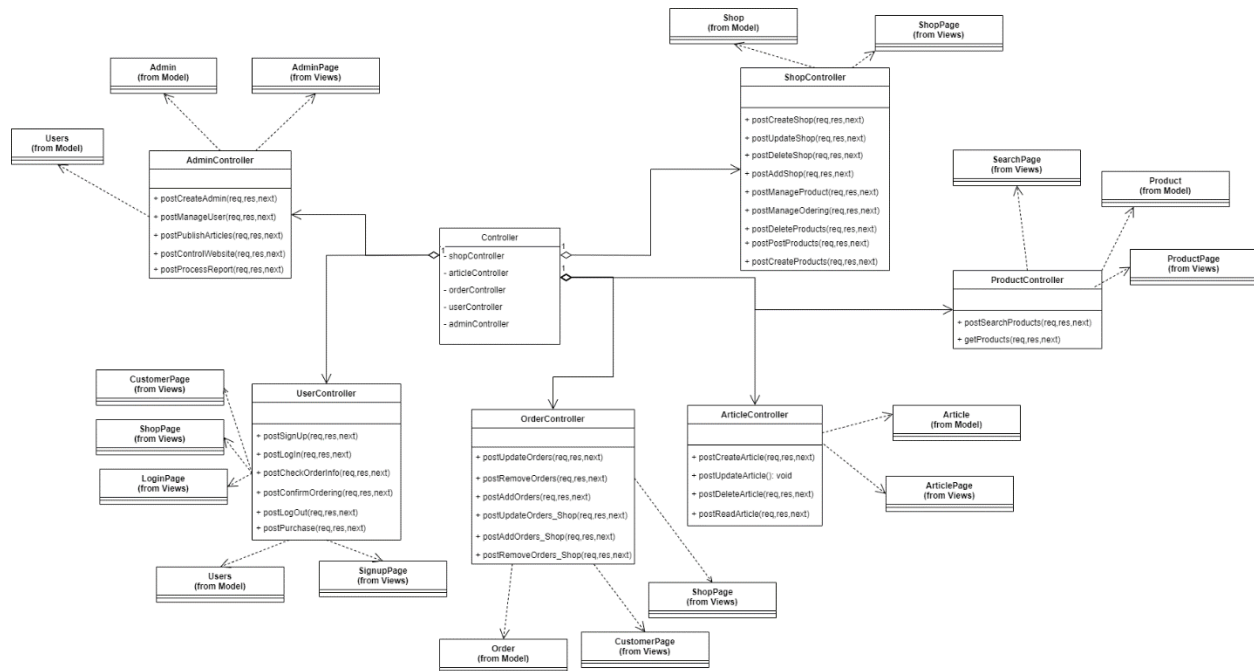
### 4.3 Component: Controller

Description: The Controller component includes the following classes to control its interaction with other components:

- AdminController: Handles admin tasks for the site
- ShopController: Manage stores
- ProductController: Product Management
- UserController: Handles user requests
- OrderController: Manage orders
- ArticleController: Manage articles

**Class Diagram:**

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### Key-class Explanation:

- Controller: main part handling client connections and service requests, it consists of one instances of each class below.

- AdminController: service handler for admin related features.
  - + postCreateAdmin(req, res, next): create admin account
  - + postManageUser(req, res, next): manage user accounts
  - + postPublishArticles(req, res, next): allows publishing articles
  - + postControlWebsite (req, res, next): manage and control the website
  - + postProcessReport(req, res, next): evaluate and review reports

- UserController: service handler for normal user related features.
  - + postSignUp(req, res, next): get data and process registration
  - + postLogIn(req, res, next): get the data and handle the login
  - + postCheckOrderInfo(req, res, next): get data and handle checking order information
  - + postConfirmOrdering(req, res, next): get data and process order closing
  - + postLogOut(req, res, next): get data and handle logout
  - + postPurchase(req, res, next): get the data and process the payment

- ShopController: service handler for shop related features.
  - + postCreateShop(req, res, next): get data and process store creation
  - + postUpdateShop(req, res, next): get data and handle shop editing
  - + postDeleteShop(req, res, next): get data and process store deletion
  - + postAddShop(req, res, next): get data and handle adding stores
  - + postManageProduct(req, res, next): get data and handle product management
  - + postManageOrdering(req, res, next): get data and handle order management
  - + postDeleteProducts(req, res, next): get data and handle product deletion
  - + postPostProducts(req, res, next): get data and process posting to products
  - + postCreateProducts(req, res, next): get data and process product creation

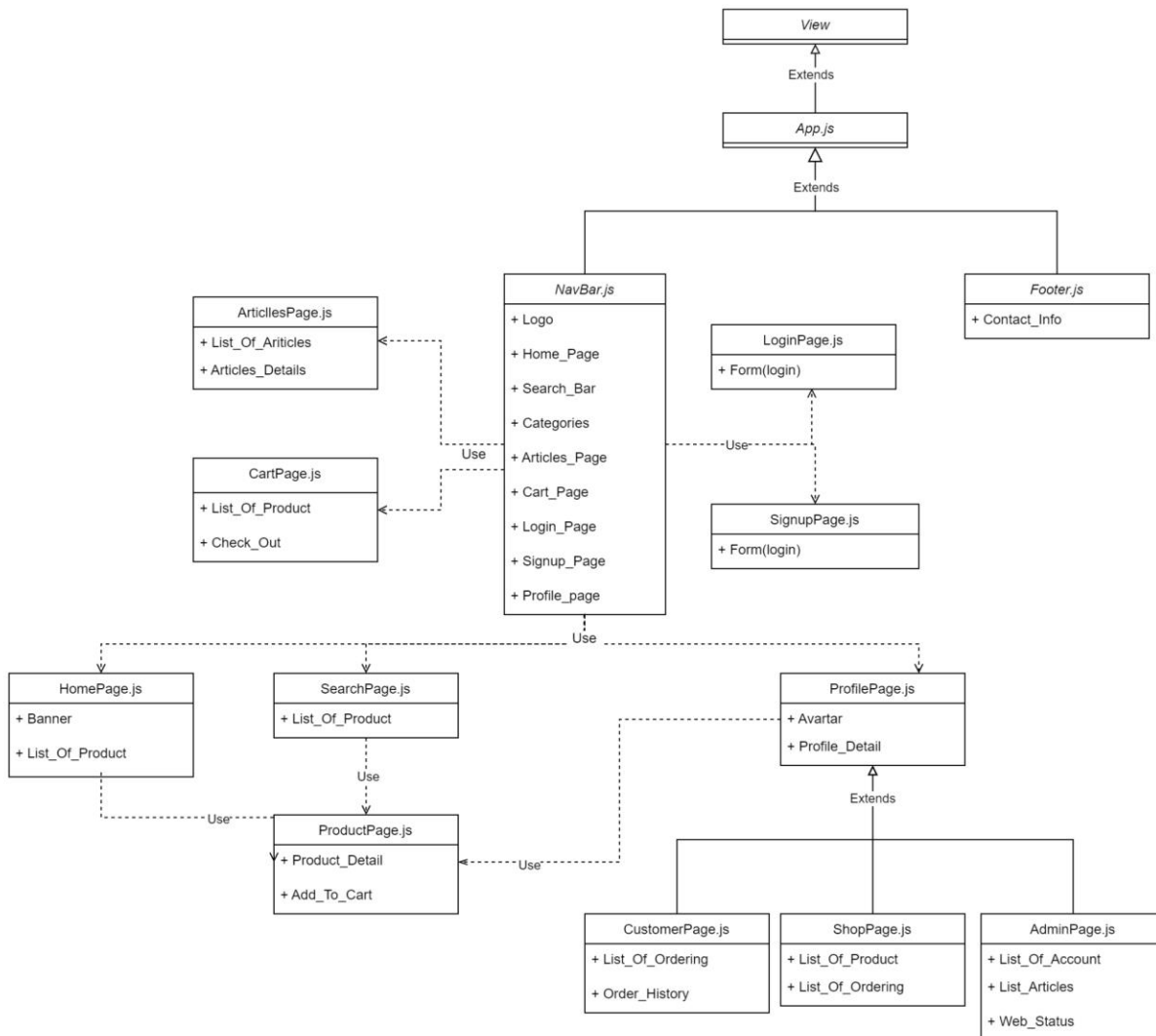
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- OrderController: service handler for ordering related features.
  - + postUpdateOrders(req,res,next): get data and handle updating orders
  - + postRemoveOrders(req,res,next): get data and process delete orders
  - + postAddOrders(req,res,next): get data and process adding orders
  - + postUpdateOrders\_Shop(req,res,next): get data and handle updating store orders
  - + postAddOrders\_Shop(req,res,next): get data and handle adding store orders
  - + postRemoveOrders\_Shop(req,res,next): get data and process delete orders of the store
- ArticleController: service handler for article related features.
  - + postCreateArticle(req,res,next): get the data and process the article creation
  - + postUpdateArticle(req,res,next): get data and handle updating articles
  - + postDeleteArticle(req,res,next): get the data and handle the deletion of the article
  - + postReadArticle(req,res,next): get data and process reading articles
- ProductController: service handler for website product related features.
  - + postSearchProducts(req,res,next): get data and process product search
  - + postGetProducts(req,res,next): get data and handle getting products

#### 4.4 Component: View

*Class Diagram:*

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### Description:

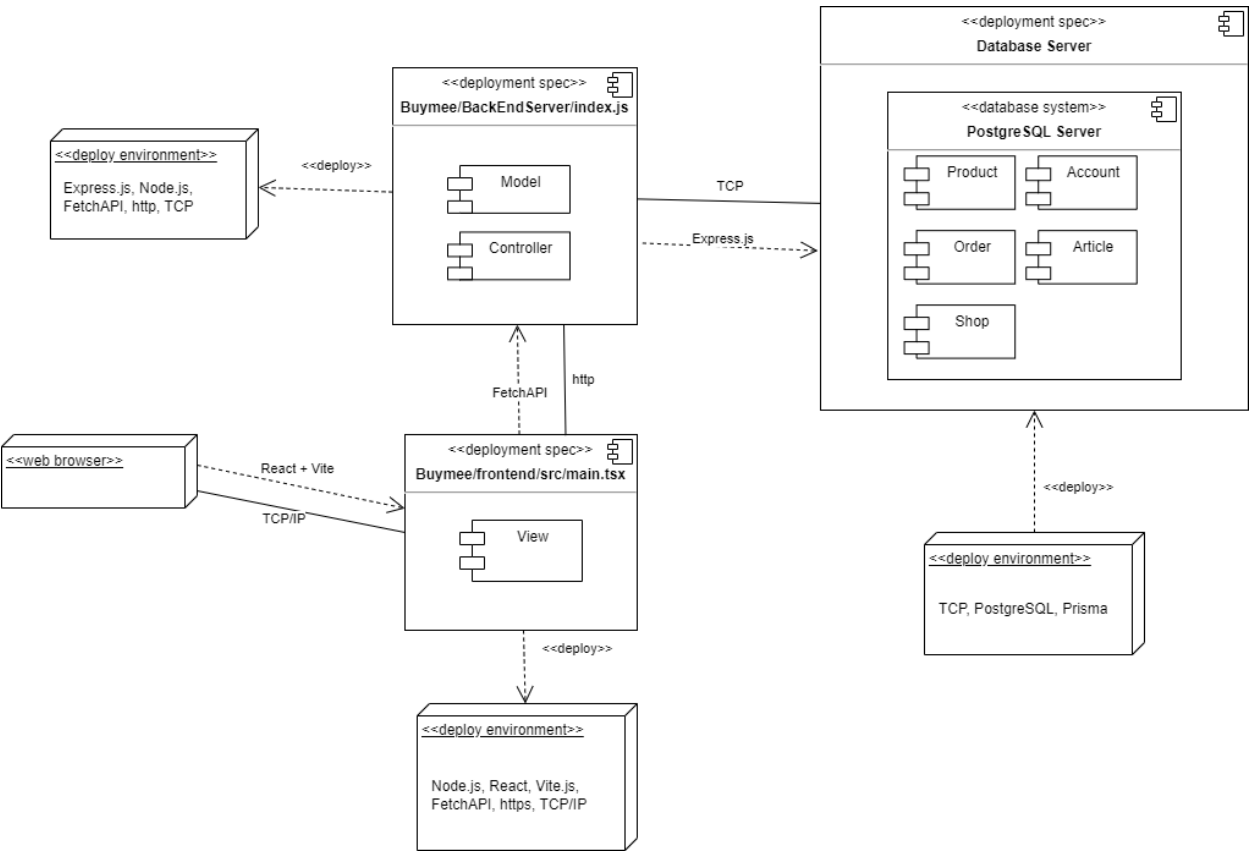
The Component View illustrates the functional display elements within the website's architecture, specifically:

- **NavBar.js:** This is the utility bar of the application, persistently visible at the top of every page. It contains links to various functionalities and pages, such as the homepage, articles page, login, and more.
- **Footer.js:** The footer of the website that includes contact information.
- **HomePage.js:** The main landing page of the website.
- **SearchPage.js:** Displays a list of products related to the entered search keyword.
- **CustomerPage.js:** This page presents customer information. It also allows customers, once logged in, to access their order history and information about previously ordered products.
- **ShopPage.js:** This page provides information about the shop, its products, and customer orders. It is accessible through the shop's account.
- **AdminPage.js:** The admin dashboard where administrators can view a list of accounts (both customers and shops), check the website's status, and perform article publication.

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- ArticlesPage: This page showcases articles related to pets and pet care.
- CartPage: Here, users can view products added to the cart and proceed with placing their order.

### 5. Deployment



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## 6. Implementation View

