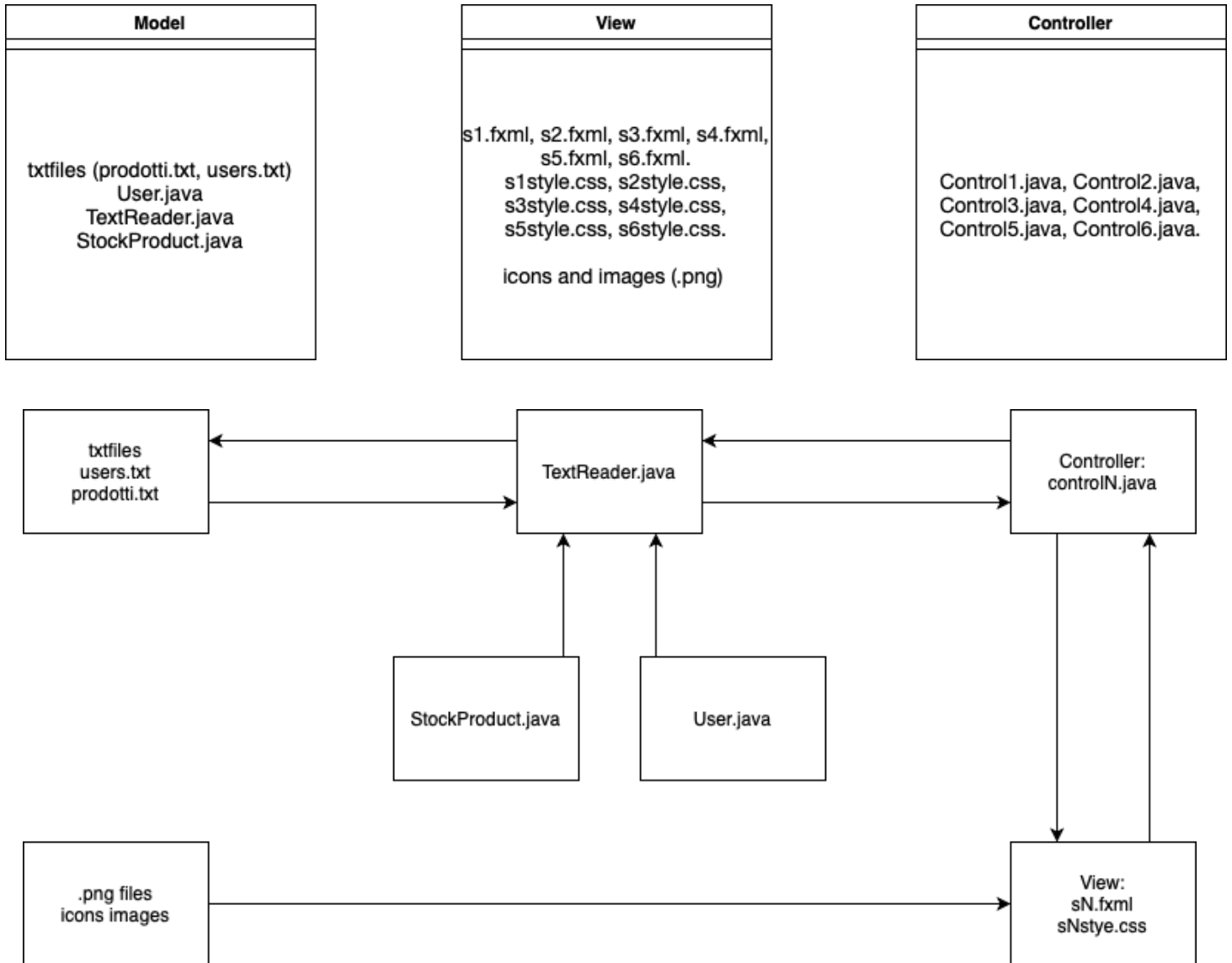


Logistic Manager Documentation



The application provides a set of tools for managing products and users within the context of a warehouse database and is structured around the model-view-controller (MVC) design pattern.

MODEL:

The model component allows data management and consists of the "txtfiles" folder and the "StockProduct," "User," and "TextReader" classes.

- The "txtfiles" folder represents the database and contains two files: "products.txt" and "users.txt." These files respectively contain data on products and users.
Product data format: id, name, price, position, quantity, last_inventory_quantity, category

User data format: username, password, role, privilege_level, id.

- The "StockProduct" class defines the product object accepted and managed by the application through getter and setter methods on the object's parameters.
- The "User" class defines the user object accepted and managed by the application through getter and setter methods.
- The "TextReader" class reads data from the "txtfiles" folder and defines the respective "StockProduct" and "User" objects, which are collected in two separate lists. The methods used are:
 - ReadProducts: for reading products from the "products.txt" file.
 - ReadUsers: for reading users from the "users.txt" file.

VIEW:

The application offers 6 views managed through 6 FXML files:

s1.fxml, s2.fxml, s3.fxml, s4.fxml, s5.fxml, s6.fxml.

The style of the views is managed through 6 CSS files: s1style.css, s2style.css, s3style.css, s4style.css, s5style.css, s6style.css.

The .png images related to icons and backgrounds are located in the same folder as the listed files.

- In scene s1, the login view is displayed.
- In scene s2, the product management scene is displayed.
- In scene s3, the inventory scene for products is displayed.
- In scene s4, the scene related to the pie chart of the inventory status is displayed.
- Scene s5 displays the scene related to histograms of commercial categories of products.
- Scene s6 displays the scene related to the management of the user team.

CONTROLLER:

The application is managed through 6 controller classes:

Control1.java, Control2.java, Control3.java, Control4.java, Control5.java, Control6.java.

Each controller handles the processes of a specific scene, sharing the scene's reference number (e.g., Control1.java - s1.fxml).

The controllers communicate information about the logged-in user among themselves. This dynamic exchange allows updating information in the scene, such as greeting the user in the top right corner or displaying information about access restrictions to certain views, visible only to specific users based on their privilege level.

Access security to scenes is managed through permission levels. If coming from an equally or more restrictive scene, the privilege check is not performed.

User activity is processed by the controllers, and operations modify data in the txt files representing the database.

- **Controller 1** manages the processes of scene 1, which is related to login. The only method, login, cyclically checks the entered username and password, authenticating access. Error messages communicate whether an incorrect password or username has been entered.
- **Controller 2** manages the processes of scene 2, which is related to product management. The initialize and pushdata methods are used to prepare the table view containing the list of products. The rowclicked method collects the value of the list selected by the user. The pulluser method obtains the user object from the previous controller. The add, remove, update, search, and clear methods are used to handle user activities (addition, removal, modification, and search bar reset) on the list through the corresponding buttons. In particular, the update method checks the user's privilege level and allows modifications only if the user has level ≥ 1 permissions. The logout, inventory, analytics, and team methods are used to manage page switching activities. The logout method is activated by the corresponding button to go to the login screen (s1scene), the inventory method switches to the inventory management screen (s2scene), the analytics method goes to the pie chart display screen (s4scene), and the team method goes to the user team management screen (s6scene).
- **Controller 3** contains the methods initialize, pushdata, rowclicked, pulluser, logout, analytics, and team, used similarly to controller 2. In particular, the initialize method provides a table view list of a different type but implemented similarly. In addition to these, the following methods are present:
 - Products: switches to the screen related to product management (s2scene).
 - Check: activated by the corresponding button, processes the input value entered by the user. This value updates the product's last inventory field. An informative message is returned indicating the inventory difference compared to the actual quantity in the database.
- **Controller 4** contains the methods initialize, rowclicked, pulluser, logout, product, inventory, and team, used similarly to controllers 2 and 3. In particular, the initialize method provides the view of the PieChart type pie

chart. Additionally, the stack method switches to the screen related to histograms of commercial categories of products (s5scene).

- **Controller 5** contains the methods initialize, rowclicked, pulluser, logout, product, inventory, analytics, and team, used similarly to controllers 2 and 3. In particular, the initialize method provides the view of the StackedBarChart type stacked bar chart.
- **Controller 6** contains the methods initialize, pushdata, rowclicked, pulluser, logout, analytics, and team, used similarly to controller 2. In particular, the initialize method provides a table view list of users of a different type but implemented similarly. The add, remove, and update methods are used to handle user addition, removal, and modification activities through the corresponding buttons.
- The initial **main controller** launches the scene and stage from the file related to the login view (s1scene.fxml).

FUNCTIONALITY

Login Screen:

Upon launching the main application, the login screen is displayed.

Enter any username and password present in the users.txt file.

Use the credentials "admin" and "password" to obtain maximum privileges.

Use the credentials "inventarista" and "inv" to obtain level 1 privileges.

Use the credentials "mulettista" and "4ruote" to obtain level 0 privileges.

Enter the username and password, then press login.

Products Screen:

After logging in, the first screen displayed is related to product management.

Clicking on list values fills the fields code, name, price, aisle, place, quantity, and category automatically with the values of the selected product.

Clicking on column headers allows sorting values in ascending or descending order.

Values in this field can be removed by clicking "clear."

"Add" and "Remove" allow adding and removing products from the list based on the id.

"Update" allows updating list values with new ones, only with privileges ≥ 1 .

"Search" allows searching for products based on id or product name (not case-sensitive).

If the product is found, it is highlighted in the list.

Any informative messages are displayed in the center of the screen.

In the top right, the logout icon next to the current user's name allows logging out and returning to the login screen.

At the top of the scene, you can navigate to other scenes: Inventory, Analytics, Team.

Inventory Screen:

Clicking on "inventory" shows the inventory management screen only if you have privileges ≥ 1 .

Clicking on column headers allows sorting values in ascending or descending order.

Clicking on list values fills the quantity field automatically with the selected product's quantity.

Clicking "Check" processes the entered inventory counting value, compares it with the quantity in the database. An informative message is displayed in the center of the screen to indicate inventory differences, no inventory differences, or other error messages.

In the top right, the logout icon next to the current user's name allows logging out and returning to the login screen.

At the top of the scene, you can navigate to other scenes: Products, Analytics, Team.

Analytics Screen:

Clicking on 'Analytics' displays the screen showing the pie chart related to the inventory condition only if you have privileges ≥ 1 .

Three conditions are displayed:

No inventory difference in green: 'Correct amount'

Positive inventory difference in red: 'Incorrect positive amount'

Negative inventory difference in red: 'Incorrect negative amount'

Upper right, the logout icon next to the current user's name allows logging out and returning to the login screen.

At the top of the scene, you can navigate between other scenes: Products, Inventory, Team.

On the right side of the screen, you can switch to the "Categories Stack Chart" screen.

The "Categories Stack Chart" screen displays a series of vertical bar charts, allowing visualization of the distribution of the number of products among

the commercial categories "Furniture," "Clothing," "Electronics," and "Stationery."

Team Screen:

Clicking on "Team" shows the list of team users registered only if you have privileges = 2.

Clicking on list values fills the fields name, password, role, permission, and id automatically with the values of the selected user.

Clicking on "Update" allows modifying the aforementioned values.

Clicking on "Remove" removes the user (based on the id).

Clicking on "Add" inserts a new user.