



Royaume du Maroc  
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Master AI & DATA Science

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## Manuel Of Use

**Intituled :**

SI Departement

Framed By :

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Du 30/11/2023 au 15/01/2024

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Realised By :

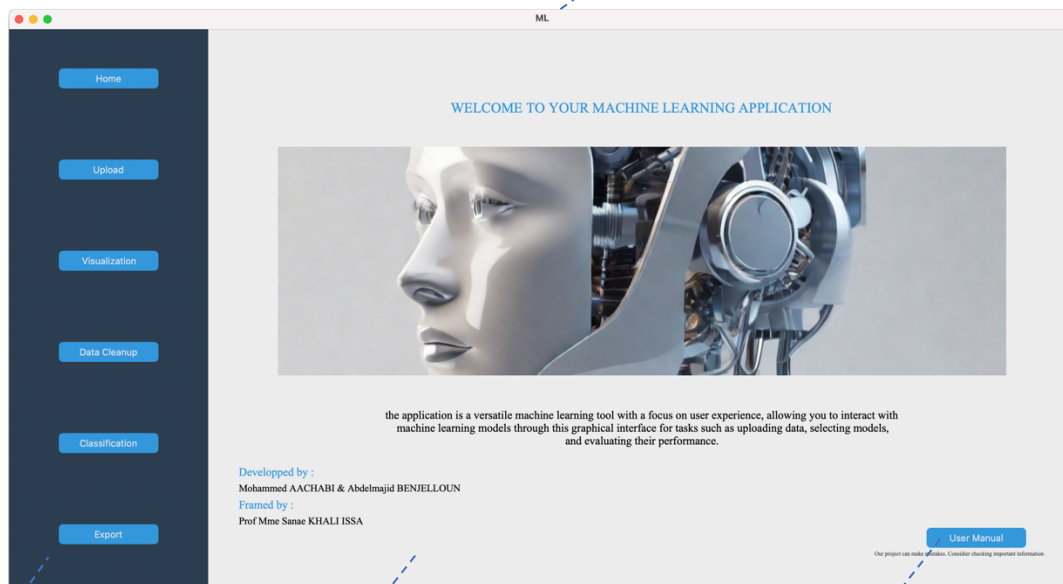
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## How To Use The Application?

we meticulously detail the processes, methodologies, and technologies that propelled our project forward. From the initial coding endeavors to the seamless integration of algorithms and the meticulous refinement of user interfaces, every facet of the development phase is laid bare. The chapter not only unravels the collaborative efforts and challenges that shaped our software solution but also places a spotlight on the tangible results achieved

### 1. Home Interface:

Name of the App



Navigation Bar

Welcome Screen

User Manuel Guide

## 2. Uploading interface:

Upon successful data upload, a summary table is presented, showcasing the column names, data shape, and corresponding data types. This tabular representation provides a quick overview of the uploaded dataset, offering insights into its structure and characteristics.

The screenshot shows a web application interface for data upload. On the left is a sidebar with buttons: Home, Upload, Visualization, Data Cleanup, Classification, and Export. The main area has an 'upload a file' button at the top. Below it is a table of data with columns: id, Survived, Pclass, Sex, Age, and Fare. Below the data table is a 'Shape Table' with columns: Name, Data Type, and Shape. Annotations point to various elements: 'The Button To Upload' points to the 'upload a file' button; 'Column names' points to the header row of the data table; 'Cell Values' points to a cell in the data table; 'Shape Table' points to the table below the data table; 'This button interface' points to the sidebar; and 'After a successful Import those buttons are unlocked' points to the 'Upload' button.

The Button To Upload

Column names

Cell Values

Shape Table

This button interface

After a successful Import those buttons are unlocked

id	Survived	Pclass	Sex	Age	Fare
0	0	3	male	22.0	7.25
1	1	1	female	38.0	71.2833
2	1	3	female	26.0	7.925
3	1	1	female	35.0	53.1
4	0	3	male	35.0	9.0
5	0	3	male	nan	nan
6	0	1	male	54.0	51.6625
7	0	3	male	2.0	21.075
8	1	3	female	27.0	11.1333
9	1	2	female	14.0	30.0708
10	1	3	female	4.0	16.7
11	1	1	female	24.0	26.35
12	0	3	male	20.0	4.0
13	0	3	male	39.0	31.275
14	0	3	female	14.0	7.8542

Name	Data Type	Shape
id	int64	(991,)
Survived	int64	(991,)
Pclass	int64	(991,)
Sex	object	(991,)
Age	float64	(991,)

We've seamlessly integrated data visualization using the Treeview function with the file explorer facilitated by `'filedialog.asksaveasfilename'`. To optimize the user experience and streamline the workflow, we've implemented three key functions:

**Show Buttons:** Activating relevant buttons for further actions.

**Hide Buttons:** Disabling unnecessary buttons, ensuring a clean interface during the data upload process.

**Upload Success Test:** Validating the successful upload of the file before enabling subsequent actions. These functionalities collectively enhance user interaction by providing a responsive and intuitive environment.

### 3. Visualization Interface

In our exploration of the dataset, we leveraged various visualization techniques to gain insights and better understand the underlying patterns. The visualization interface provides four distinct options tailored to different aspects of the data:

#### Histograms:

Utilizing histograms allows us to visualize the distribution of numeric variables in the dataset. Each histogram provides a visual representation of the frequency and shape of the data.

#### Heatmaps:

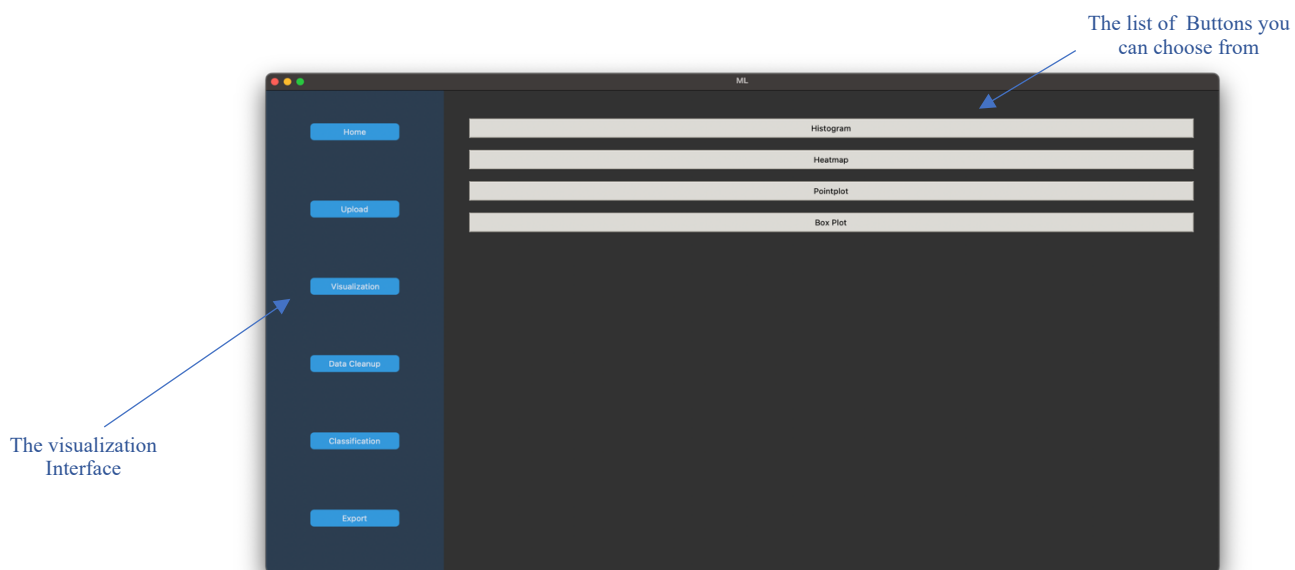
Heatmaps are employed to visualize the correlation between different variables in the dataset. This technique provides a color-coded matrix, making it easy to identify patterns and relationships.

#### Box Plots:

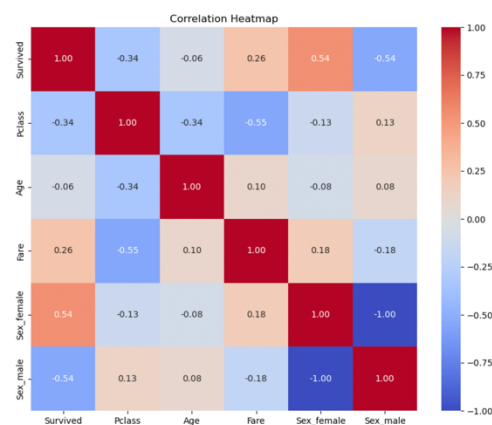
Box plots are effective for understanding the spread and central tendency of numerical data. Each box plot encapsulates the interquartile range, median, and potential outliers, providing a comprehensive view of the data distribution.

#### Stem Plots:

Stem plots are utilized to showcase the distribution of values in a dataset, particularly useful for visualizing individual data points and their frequency.



An example of the result of HeatMap



#### 4. Data Cleanup Interface:

In order to ensure the integrity and quality of our dataset, we implemented a robust data cleanup process.

The screenshot shows the 'Data Cleanup' interface. On the left is a sidebar with buttons: Home, Upload, Visualization, Data Cleanup (selected), Classification, and Export. The main area displays a table with columns: Id, Survived, Pclass, Sex, Age, and Fare. Below the table are several blue buttons for cleanup actions: 'Fill Missing with Mean', 'Fill Missing with Median', 'Drop Rows with Missing Values', 'One-Hot Encode', and 'Drop'. There are also input fields for 'Enter the feature to one-hot encode:' and 'Enter the column to drop:'. Annotations with arrows point to these elements:

- 'Table Displays in order to help' points to the data table.
- 'Missing values handle functions' points to the 'Fill Missing with Mean' and 'Fill Missing with Median' buttons.
- 'Entering the feature on one code it' points to the 'One-Hot Encode' button.
- 'Entering the column name to drop it' points to the 'Drop' button.

#### 5. Supervised Algorithms Interface:

The screenshot shows the 'Supervised Algorithms Interface'. The sidebar is the same as in the previous interface. The main area has a dropdown menu for 'supervised' algorithms, with 'SVM' selected. Below this is an input field for 'Enter your target' with 'Survived' entered. A 'Validate' button is present. Below the button, a 'Confusion Matrix' and 'Classification Report' are displayed. At the bottom is a scatter plot titled 'SVM Classification Results' showing 'Principal Component 1' on the x-axis and 'Principal Component 2' on the y-axis. Annotations with arrows point to these elements:

- 'Choosing the Type Of Algorithm' points to the 'supervised' dropdown.
- 'Choosing the The Type of that Algor' points to the 'SVM' dropdown.
- 'Entering the target var' points to the 'Enter your target' input field.
- 'Displaying The stats' points to the 'Validate' button.
- 'Visualizing using Matplotlib' points to the 'SVM Classification Results' scatter plot.

## 6. Unsupervised Algorithms Interface:



## 7. Exporting Interface:

The screenshot shows the 'Exporting Interface' displaying a report for a file named 'plplplpl.pdf'. The report includes the file path and a list of data points for various features, showing both the first and last values. The data is as follows:

Feature	First Value	Last Value
Survived	0	0
Pclass	3	3
Age	22.0	32.0
Fare	7.25	7.75
Sex_female	False	False
Sex_male	True	True
Cluster	0	0

Below the report, a table header is visible with columns for 'Column Name' and 'Data Type'.

As For the exportation we have made our best to extract the important data as there is much room to improve but we will do our best