Glass classification project report

Data science

Name std

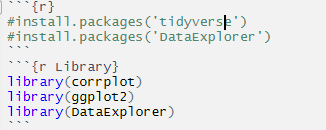
Shareef Tarek ragab 20160010

Name teacher

Eng. Bushra Alqarout

* Call the libraries

We called the following libraries as shown in the picture



To perform operations, graphics display data resulting from the following commands

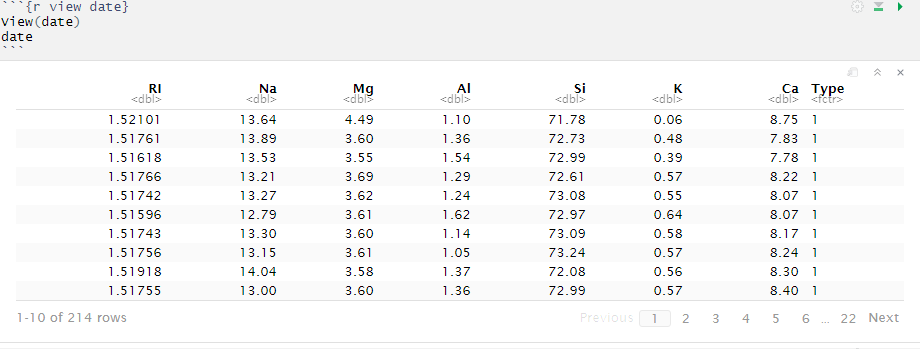
* Initialize of data frame



I booted the date value with the data from the CSV file reader and the reader called the file containing the data and gave the header true value

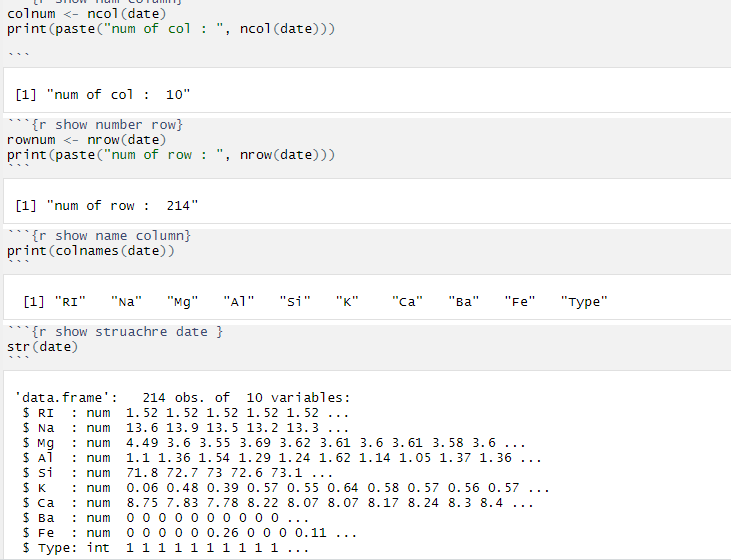
File: glass.csv

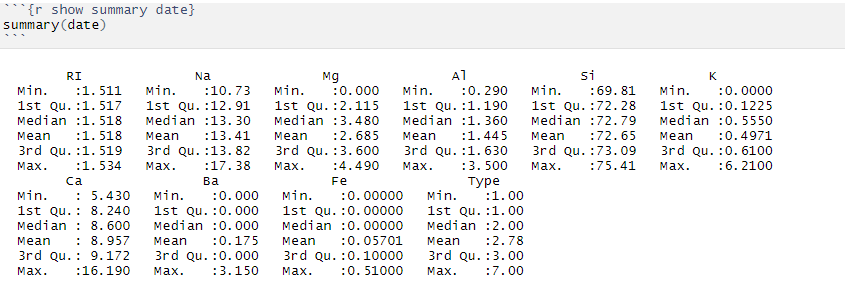
* Display data



We display the data by calling the value in which the data was initialized and containing the data

* View details





1. It has been implemented that displays how many columns the table contains

And the result of the number of columns as shown in the picture is equal 8

1. It has been implemented that displays how many rows the table contains

The result was that the number of rows as shown on the image was equal 214

1. It has been implemented that displays how many name columns the table contains

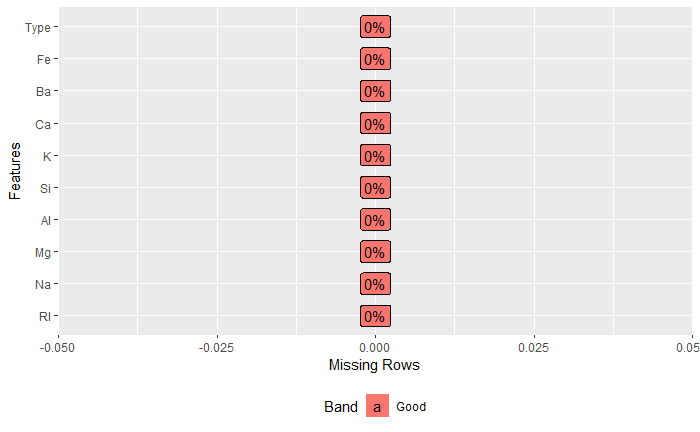
And the result of the name of columns as shown in the picture is equal

"RI" "Na" "Mg" "Al" "Si" "K" "Ca" "Type"

The mayors' names refer to the following:

* + - * 1. RI: refractive index
        2. Sodium (unit measurement: weight percent in corresponding oxide, as are attributes 4-10)
        3. Mg: Magnesium
        4. Al: Aluminum
        5. Si: Silicon
        6. K: Potassium
        7. Ca: Calcium
        8. Ba: Barium
        9. Fe: Iron
        10. Type of glass: (class attribute)

1. A function has been called that shows the structure and elements of the existing table and the types of values that the table contains from the elements and properties.
2. The function has been called which summarizes the structure and elements of the existing table and the types of values that the table contains from the elements and properties from which the elements in it refer to the following:
   1. Min: Symbolizes the lowest value in a column
   2. 1st Qu: Symbolizes the first value in a column
   3. Median: the median value of a range of values.
   4. Mean: Refers to the mean value (average) in the column
   5. 3rd Qu.: It denotes the third value in the column
   6. Max.: Symbolizes the largest value in a column
3. Show missing values

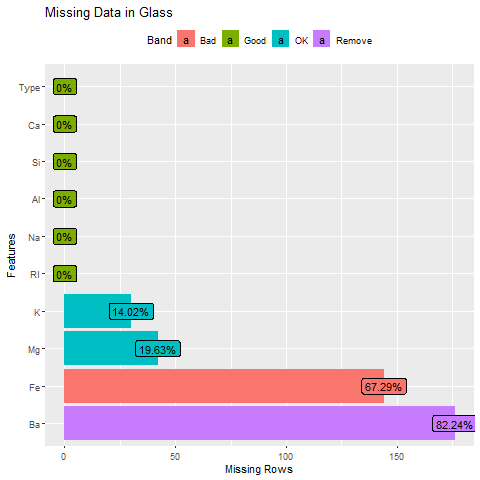


Where the following values appear when the dataExplorer library's plot\_missing () function is called and the date scale is passed to it where the data was initialized

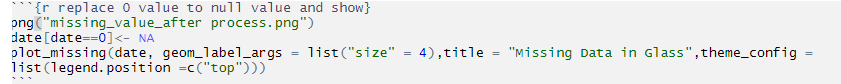
.

Resulting values: Zeros contain an empty value, so no null values appear in the table.

It becomes plot\_missing(date)



It is caused by this code

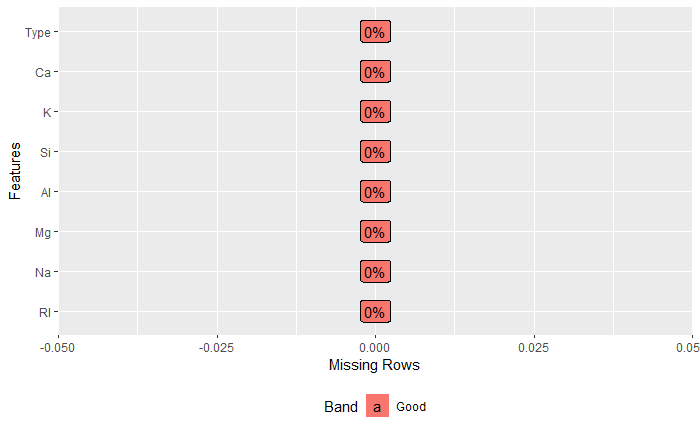


Where all zero-valued values are converted to null values and the function of displaying empty values is called back.

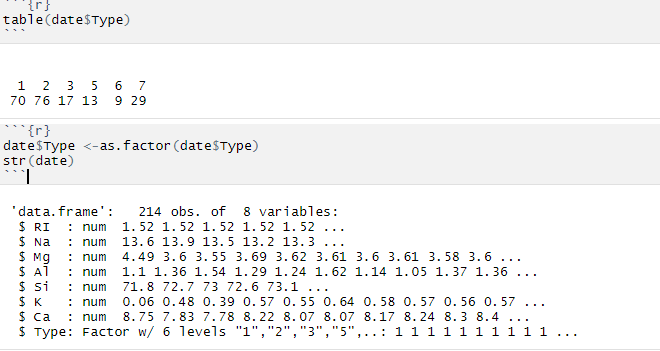


The actions suggested by the drawing were taken and the two columns were deleted (Fe, Ba)

The null values are returned and converted to zeros again to complete the operations on the data

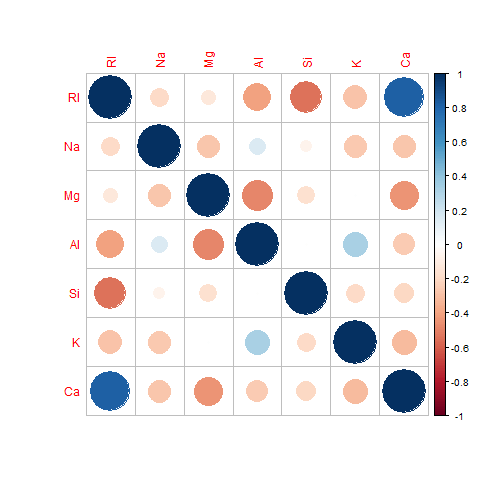


1. Convert values



Based on the description of the data, the Type property is a value on which the glass is classified, so it must be converted from a numeric value to Factor.

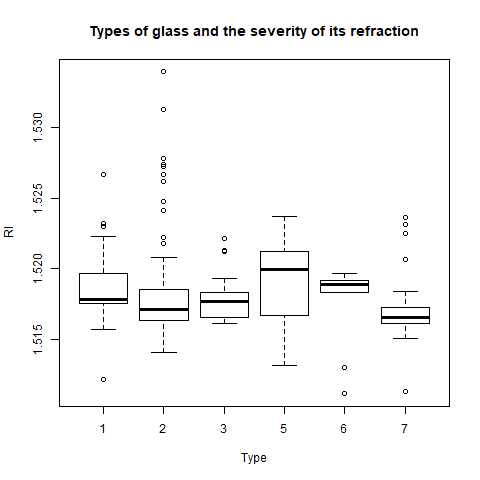
1. Relationships between the elements:



Relationships between items in date frame without Type is a property

Where I calculated the relationships of the date frame without the type property via the cor () function and the date [, - 8] parameter was passed to it and passed the result to the corplot () function directly to it to draw the relationships of the elements and this function is found in the corplot library.

1. The relationship between the type of glass and refraction:



Explain the relationship between the types of glass and the intensity of ginksar for each of these types.

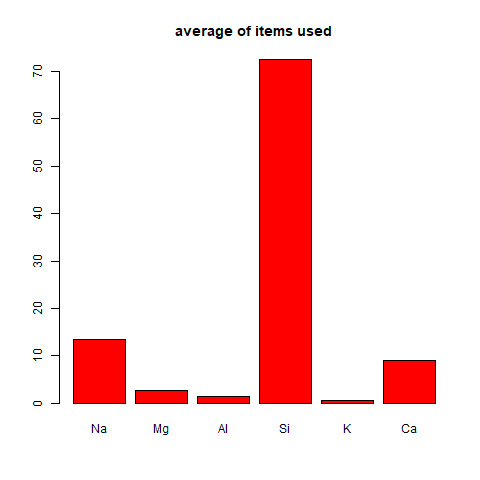
As the glass type contains a number of its constituent elements, the illustration shows that some elements are outside a frame.

And this was done through this matter.

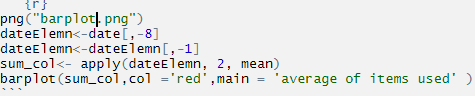


Where I chose the x-coordinate as the type and y-events as the refractive intensity from date frame.

1. average of items used

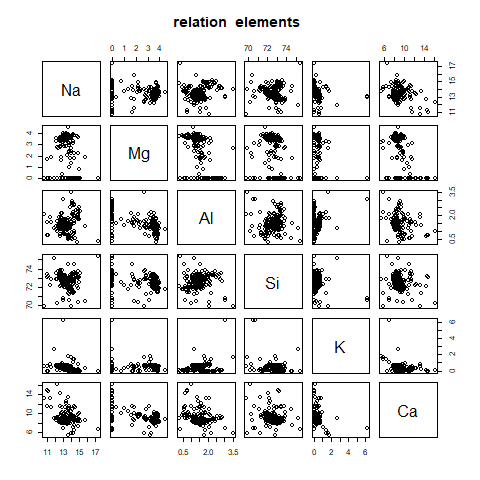


Here a chart is drawn showing the arithmetic mean percentage of the elements present in all samples taken.



Here we removed the first and last columns of the dataframe and applied the intermediate function to them by supply and passed the output to the barplot () function.

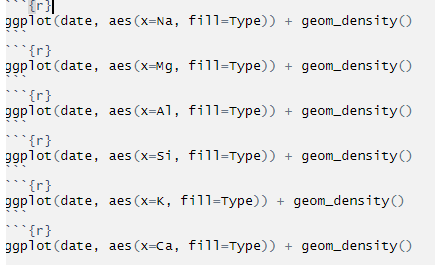
1. The relationship of the elements to each other



Here, the chemical elements, some of them in the glass industry and the role they play in it, are clarified.

plot (dateElemn, main ="relation elements “)

1. The relationship of the element to the type



Here the ggplot2 library was called drawing the element and its relationship to the glass manufacturing types.

