ESERCIZIO 1

I have chosen three variable from the file [Professional Life.xlsx](file:///C:\Users\Pasc_jr\OneDrive\Desktop\Professional%20Life.xlsx):

Qualitative variable: SEX

Discrete quantitative variable: AGE

Continuous quantitative variable: HEIGHT.

Let's create an algorithm to calculate frequency distribution for these three variables:

<!DOCTYPE html>

<html>

<head>

<title>Analisi file Excel</title>

<style>

table {

border-collapse: collapse;

width: 100%;

}

table, th, td {

border: 1px solid black;

}

th, td {

padding: 8px;

text-align: left;

}

.frequency-table {

margin-top: 20px;

}

h3 {

margin: 10px 0;

}

</style>

</head>

<body>

<h1>Carica un file Excel (.xlsx)</h1>

<input type="file" id="fileInput" accept=".xlsx">

<div id="output"></div>

<div class="frequency-table" id="frequencyAmbitious"></div>

<div class="frequency-table" id="frequencyHeight"></div>

<div class="frequency-table" id="frequencyDreamWorks"></div>

<div class="frequency-table" id="jointDistributionAmbitiousHeight"></div>

<script src="https://cdnjs.cloudflare.com/ajax/libs/xlsx/0.8.0/jszip.js"></script>

<script src="https://cdnjs.cloudflare.com/ajax/libs/xlsx/0.8.0/xlsx.js"></script>

<script>

var ExcelToJSON = function() {

this.parseExcel = function(file) {

var reader = new FileReader();

reader.onload = function(e) {

var data = e.target.result;

var workbook = XLSX.read(data, {

type: 'binary'

});

workbook.SheetNames.forEach(function(sheetName) {

var XL\_row\_object = XLSX.utils.sheet\_to\_row\_object\_array(workbook.Sheets[sheetName]);

displayDataInTable(XL\_row\_object);

calculateFrequency(XL\_row\_object, "Age", "frequencyAmbitious");

calculateFrequency(XL\_row\_object, "height", "frequencyHeight");

calculateFrequency(XL\_row\_object, "Sex", "frequencyDreamWorks");

calculateJointDistribution(XL\_row\_object, "height", "Sex", "jointDistributionAmbitiousHeight");

});

};

reader.onerror = function(ex) {

console.log(ex);

};

reader.readAsBinaryString(file);

};

};

function displayDataInTable(data) {

var table = document.createElement('table');

var thead = table.createTHead();

var tbody = table.createTBody();

var headerRow = thead.insertRow(0);

for (var key in data[0]) {

var th = document.createElement('th');

th.innerHTML = key;

headerRow.appendChild(th);

}

data.forEach(function (row) {

var newRow = tbody.insertRow();

for (var key in row) {

var cell = newRow.insertCell();

cell.innerHTML = row[key];

}

});

document.getElementById('output').innerHTML = '';

document.getElementById('output').appendChild(table);

}

function calculateFrequency(data, variableName, outputElementId) {

var frequencies = {};

var totalEntries = data.length;

data.forEach(function (entry) {

var value = entry[variableName];

if (value in frequencies) {

frequencies[value]++;

} else {

frequencies[value] = 1;

}

});

var result = '<h3>Analisi della variabile: ' + variableName + '</h3>';

result += '<table>';

result += '<tr><th>Valore</th><th>Frequenza Assoluta</th><th>Frequenza Relativa</th><th>Percentuale</th></tr>';

for (var value in frequencies) {

var frequency = frequencies[value];

var relativeFrequency = frequency / totalEntries;

var percentage = (relativeFrequency \* 100).toFixed(2);

result += '<tr><td>' + value + '</td><td>' + frequency + '</td><td>' + relativeFrequency.toFixed(2) + '</td><td>' + percentage + '%</td></tr>';

}

result += '</table>';

document.getElementById(outputElementId).innerHTML = result;

}

function calculateJointDistribution(data, variable1, variable2, outputElementId) {

var jointDistribution = {};

data.forEach(function (entry) {

var value1 = entry[variable1];

var value2 = entry[variable2];

var key = value1 + ' | ' + value2;

if (jointDistribution[key]) {

jointDistribution[key]++;

} else {

jointDistribution[key] = 1;

}

});

var result = '<h3>Distribuzione Congiunta tra ' + variable1 + ' e ' + variable2 + '</h3>';

result += '<table>';

result += '<tr><th>Valore</th><th>Frequenza Congiunta</th><th>Frequenza Relativa Congiunta</th><th>Percentuale Congiunta</th></tr>';

for (var key in jointDistribution) {

var frequency = jointDistribution[key];

var relativeFrequency = frequency / data.length;

var percentage = (relativeFrequency \* 100).toFixed(2);

result += '<tr><td>' + key + '</td><td>' + frequency + '</td><td>' + relativeFrequency.toFixed(2) + '</td><td>' + percentage + '%</td></tr>';

}

result += '</table>';

document.getElementById(outputElementId).innerHTML = result;

}

// Aggiungi un listener all'input file per avviare l'analisi del file quando viene selezionato

document.getElementById('fileInput').addEventListener('change', function (e) {

var file = e.target.files[0];

if (file) {

var excelParser = new ExcelToJSON();

excelParser.parseExcel(file);

}

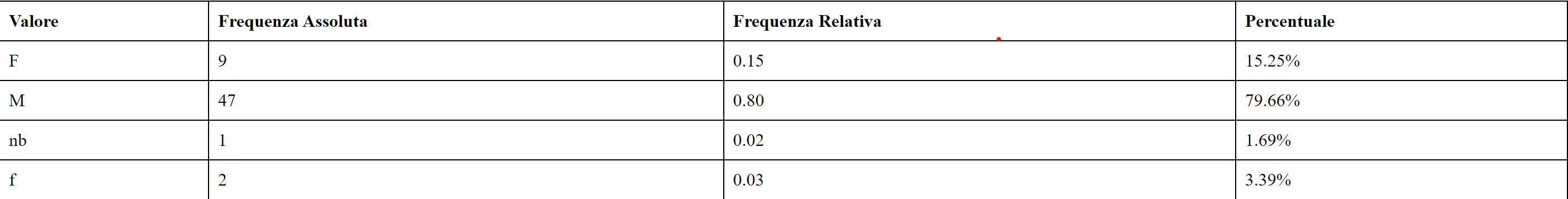
});

</script>

</body>

</html>

The result of this algorithm are:

* RELATIVE, ABSOLUTE, PERCENTAGE FREQUENCY FOR SEX
* Immagine che contiene testo, linea, schermata, Parallelo

  Descrizione generata automaticamenteRELATIVE, ABSOLUTE, PERCENTAGE FREQUENCY FOR AGE
* RELATIVE, ABSOLUTE, PERCENTAGE FREQUENCY FOR HEIGHT

Immagine che contiene testo, linea, Parallelo, numero

Descrizione generata automaticamente

* Immagine che contiene testo, numero, schermata, Parallelo

  Descrizione generata automaticamenteJOINT DISTRIBUTION BETWEEN HEIGH AND SEX VARIABLES