Actividad #9

Almacenamiento y Carga dinamico de Datasets CSV

- Nombre:
- Fecha:
- Reposiroty: https://github.com/vasanza/SSE
- Refrence: https://github.com/vasanza/Matlab_Code/tree/main
- Dataset: Photovoltaic Data Acquisition (PVDAQ) Public Datasets
- https://data.openei.org/s3_viewer?bucket=oedi-data-lake&prefix=pvdaq%2F2023-solar-data-prize%2F2105_OEDI%2Fdata%2F

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Descripción:

Objetivos:

- Generar y visualizar señales senoidales con diferentes parámetros.
- Organizar los datos en un arreglo tipo dataset combinando múltiples señales y **TimeStamp**.
- Exportar datos generados en MATLAB a un archivo **dataset.CSV** utilizando funciones personalizadas.
- Mantener una estructura de proyecto ordenada y respaldada usando carpetas y funciones (`src`, `git_sse`, `fSave_file`).

Copia la actividad en tu respaldo

```
%Configuracion de carpeta ./src para librerias
addpath(genpath('./src'));

% Definir rutas
miRespaldo = 'C:\Desktop\SSE_vic';  %<========
repositorio = 'C:\Desktop\SSE\2025';%<========

if true
    % repositorio -> respaldo
    git_sse(miRespaldo)
else
```

```
    % Mombre de la carpeta de la Actividad en el repositorio
    nombreCarpeta = string(split(cd, filesep));
    nombreCarpeta = nombreCarpeta(end) % Nombre de la carpeta
    % Regresar al repositorio
    cd(fullfile(repositorio,nombreCarpeta))
end
```

Desarrollo de la Actividad

Paso 1: Borrar variables en el workspace y limpiar cmd

```
clear % Borrar variables en el workspace y libera memoria RAM
clc % Limpia el Command Window
```

Paso 2: Configuración de carpeta ./src para librerias

```
addpath(genpath('./src'));
```

Paso 3: Configuración de carpeta ./data para datasets

```
datapath = fullfile('./data/');
```

Paso 4: Buscar nombres de archivos .csv en ./data

```
filename = FindCSV(datapath)
```

```
filename = 5×1 struct
```

...

Fields	name	folder
1	'Copy_2_of_2105_inv01_data.csv'	'C:\Users\victo\Desktop\SSE\2025\ACTIVIDAD9\data'
2	'Copy_3_of_2105_inv01_data.csv'	'C:\Users\victo\Desktop\SSE\2025\ACTIVIDAD9\data'
3	'Copy_4_of_2105_inv01_data.csv'	'C:\Users\victo\Desktop\SSE\2025\ACTIVIDAD9\data'
4	'2105_inv01_data.csv'	'C:\Users\victo\Desktop\SSE\2025\ACTIVIDAD9\data'
5	'Copy_of_2105_inv01_data.csv'	'C:\Users\victo\Desktop\SSE\2025\ACTIVIDAD9\data'

```
maxFiles = size(filename,1)
```

```
maxFiles = 5
```

Paso 5: Cargar automaticamente todos los archivos csv desde ./data

```
allData = [];
for i=1:maxFiles
    nameFile = filename(i).name;
    pathFile = strcat(datapath, nameFile)
    rawData = fLoad_dataset(pathFile);
    allData = [allData; rawData];
end
```

```
pathFile =
'.\data\Copy_2_of_2105_inv01_data.csv'
```

```
Warning: Column headers from the file were modified to make them valid MATLAB identifiers before creating
variable names for the table. The original column headers are saved in the VariableDescriptions property.
Set 'VariableNamingRule' to 'preserve' to use the original column headers as table variable names.
pathFile =
'.\data\Copy_3_of_2105_inv01_data.csv'
Warning: Column headers from the file were modified to make them valid MATLAB identifiers before creating
variable names for the table. The original column headers are saved in the VariableDescriptions property.
Set 'VariableNamingRule' to 'preserve' to use the original column headers as table variable names.
pathFile =
'.\data\Copy_4_of_2105_inv01_data.csv'
Warning: Column headers from the file were modified to make them valid MATLAB identifiers before creating
variable names for the table. The original column headers are saved in the VariableDescriptions property.
Set 'VariableNamingRule' to 'preserve' to use the original column headers as table variable names.
pathFile =
'.\data\2105_inv01_data.csv'
Warning: Column headers from the file were modified to make them valid MATLAB identifiers before creating
variable names for the table. The original column headers are saved in the VariableDescriptions property.
Set 'VariableNamingRule' to 'preserve' to use the original column headers as table variable names.
pathFile =
'.\data\Copy_of_2105_inv01_data.csv'
Warning: Column headers from the file were modified to make them valid MATLAB identifiers before creating
variable names for the table. The original column headers are saved in the VariableDescriptions property.
Set 'VariableNamingRule' to 'preserve' to use the original column headers as table variable names.
```

```
clear rawData nameFile filename;
```

Paso 6: Extraer y graficar las variables

```
allData.Properties
```

```
ans =
  TableProperties with properties:

            Description: ''
               UserData: []
         DimensionNames: {'Row'  'Variables'}
          VariableNames: {1×6 cell}
    VariableDescriptions: {1×6 cell}
           VariableUnits: {}
      VariableContinuity: []
                RowNames: {}
        CustomProperties: No custom properties are set.
      Use addprop and rmprop to modify CustomProperties.
```

```
t = datetime(allData.measured_on);
VariableNames = allData.Properties.VariableNames
```

```
VariableNames = 1×6 cell
'measured_on''inv_string01_ac_output__kwh__inv_150164''inv_string01_ac_output__p ···
```

```
MaxVariables = size(VariableNames,2);

% 2 por que el timeStamp ya fue leido
dataArray = [];
for i=2:MaxVariables
    variable = allData{:,VariableNames(i)};
    dataArray = [dataArray, variable];
end
```

```
figure;
maxSamples = size(dataArray,1);
samples = 121610
```

```
samples = 121610
```

```
plot(t(1:samples,:),dataArray(1:samples,:)); % las 1k primeras filas

legend(string(VariableNames(2:end)));
xlabel('Tiempo');
ylabel('Valores');
title('Señales en función del tiempo');
grid on;
```