Resource: 6 Importing, processing, and representing data in MATLAB

We will import the .lvm file into MATLAB with the MATLAB function ${\tt lvm_import}.$

 \Box 1. Download the following .zip file:

ricopic.one/resources/lwm_import_v22.zip.

- □ 2. Extract the contents of the .zip archive. Do this by navigating to the file, right-clicking it, and selecting Extract all... or "opening" it (viewing its contents in Windows Explorer) and clicking the button Extract all files, as shown in Figure 03.5.
- □ 3. Copy the file lvm_import.m to either your ~/Documents/MATLAB directory or the directory in which your data file (.lvm) resides (e.g. ~/Documents/me316/lab03).
- □ 4. Create a MATLAB script and save it *in the same directory as your data file*. Within the script, we can load the data file with the following command.

data_struct = lvm_import('your_file_name.lvm');

You now have a struct class variable data_struct from which we can extract the data with the following commands.

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Figure 03.5: extracting files from the lwm_import_v22.zip archive.

```
myrio_t = data_struct.Segment1.data; % time array
myrio_output = data_struct.Segment2.data; % myrio output
myrio_input = data_struct.Segment3.data; % myrio input
```

You now have three array variables <code>myrio_t</code>, <code>myrio_output</code> (\widetilde{V}_s), and <code>myrio_input</code> ($\widetilde{\nu}_o$).

Resource 6.1 Plotting the data

Now we can plot the results. Here's an example of how that can be done.

```
figure; % open a new figure
plot(myrio_t,myrio_output,'xr'); % plot myrio output (Vs)
hold on;
plot(myrio_t,myrio_input,'xb'); % plot myrio input (vo)
grid on; % turn the grid on
xlabel('time (s)') % label the x-axis
ylabel('voltage (V)') % label the y-axis
legend('V_s','v_o')
```