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

We will import the `.lvm` file into MATLAB with the MATLAB function `lvm_import`.

☐ 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.

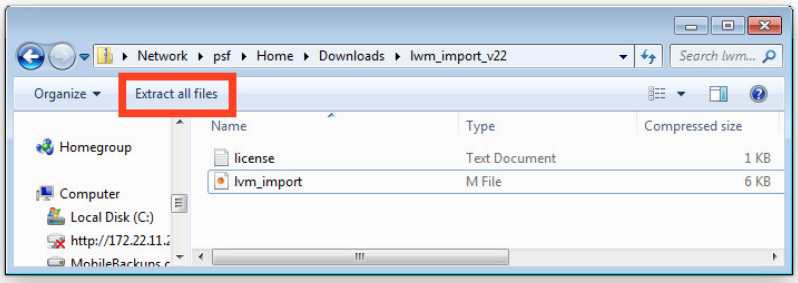


**Figure 03.5:** extracting files from the `lwm_import_v22.zip` archive.

```
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 `myrio_t`, `myrio_output` ($\widetilde{V}_s$), and `myrio_input` ($\widetilde{v}_o$).

### 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')
```