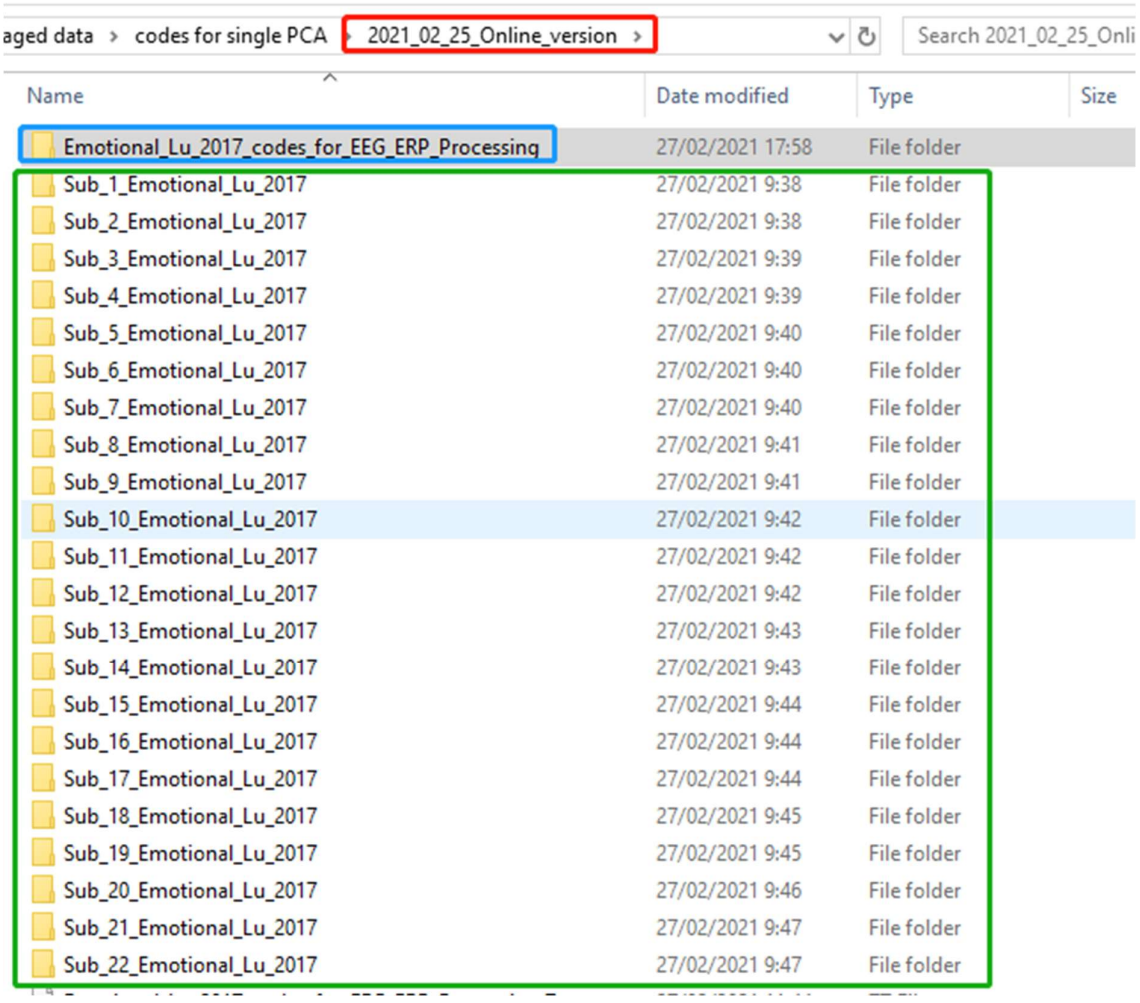
(1) If you want to successful run those codes (marked by blue color), please put the cods and the EEG datasets (marked by green color) in the same folder (marked by red color), as show in the following figure:



(2) Fourth techniques are used to extract N2 of interest:

Before using those techniques to extract N2, Please first handle 'm_Filter_data_by_wavelet_filter.m' so that the preprocessed single-trial EEG data are filtered by wavelet filter.

(a) 'WF': N2 is quantified using conventional time-domain analysis at group analysis; Please run 'm_Conventional_time_domain_analysis_for_filtered_data' to obtain grand waveforms at specific electrodes, topographies, and similarities of topographies across all subject, statistical analysis results, and mean/peak amplitudes of all subjects.

(b)'iPCA': N2 is separately quantified from the single-trial EEG of individual subject using temporal principal component analysis and Promax rotation. Please first run 'm_Conventional_time_domain_analysis_for_filtered_data' to generate template and then run 'm_Individual_PCA_Rotation_single_trial_filtered_data_iPCA'. You can select to plot temporal and spatial components when extracting N2 from individual subject (line 64: 'Flag_plot_component = 2;%% Whether plot temporal and spatial components or not(1.Yes; 2.No)').

(c) 'aPCA': N2 is measured from the averaged ERP data across single trials of all subject simultaneously by using temporal principal component analysis and Promax rotation. Please first run 'm_Conventional_time_domain_analysis_for_filtered_data' to generate template and then turn to 'm_Averaged_Group_PCA_Rotation__Projection_filtered_data'.

(d) 'sPCA': N2 is measured from the single-trial EEG data of all subject simultaneously by using temporal principal component analysis and Promax rotation. Please first run 'm_Conventional_time_domain_analysis_for_filtered_data' to generate template and then turn to 'm_Single_trials_Group_PCA_Rotation_Projection_filtered_data'.

(3) After N2 is processed by the four techniques, we can plot mean/ standard values of similarities for different conditions: 'm_Plot_similarities_topographies_different_techniques' and plot mean/peak amplitudes of all subjects 'm_Plot_mean_peak_amplitudes_different_techniques_BOXPLOT'.