Homework 10: EEG and visual ERP

Perform the following analysis with the EEG data (ERP_Faces.mat, ERP_houses.mat and ERP_objects.mat) we used in class for electrode number 59.

1. In class we identified the N170 and P200. Visual ERP responses also have an early positive response called P100, which happens approximately 100 ms after stimulus presentation. Identify the amplitude and latency of the P100 response for each of the stimulus categories (faces, objects, and houses). Show the P100 responses using a bar and errorbar graph. Perform a t-test across categories to determine whether the P100 differed across stimulus categories **(4 points)**

2. Compute the sensitivity and the specificity of the P100 and N170 responses of the **objects** and **houses** categories. As threshold for the P100 choose the mean of the P100 over the two categories. As threshold for the N170 choose the mean of the N170 over the two categories. Which response separates the stimulus categories better? **(6 points)**