Duration: 8 weeks - 10 weeks

Stages:

0) Quick and dirty end to end feel
- load eeg data
- plot filtered vs unfiltered data for different electrodes
- calculate a couple basic electrode features
- do above for multiple epochs
- plot feature values across epochs

1) Build basic building blocks with good object-oriented design
- Re-referencing of EEG data
- Basic one electrode feature sets
- Keep extensibility in mind while designing classes / interfaces

2) Feature Values across epochs
- Processing of EEG epochs
- Build a pipeline for putting the building blocks together
- Plot feature values across epochs

3) Reliability metrics, other statistics

4) Multiple electrode feature sets

5) Visualization

Note: Documentation and testing to be done at each step

Details

Work with EDF files

EEG Reference: Forehead (i.e as recorded), Average, Cz, Bipolar, (Laplacian)

Epoch durations: 2s, 4s, 8s -> 64s in multiples of 8 (8, 16, 24, 32, 40, 48, 56, 64)

Frequency bands: delta, theta, alpha, lower-alpha, upper-alpha, beta, lower-beta, upper-beta

reliability:
- within a recording session
- across multiple recording sessions

electrode location / electrode-pair

Starter code
- Loading EDF data
- Filtering