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- **MBID_list_to_recordingsData.jpynb:** Replicating the recordingsInfo.json automatically with the name recordingsData, given a list of MBIDs. It includes:
  - recordingsList: the MBID list of the records.
  - The record information, now including the usul information. (All usul and makam names are coded with the Turkish alphabet,first letter capitalized)
  - Pitch Space
  - Pitch Track
  - The Pitch Track is obtained by utilizing the PredominantMelodyMakam object. The default time step was 2.902 msec. Since we need the pitch track only for human visualization, it is reduced to 10msec by changing the hopSize.
  - The time step is found by, $timeStep = \frac{hopSize}{samplingFrequency}$. So, for Fs = 44100 Hz, a hopSize of 441 is required.
  - The effect of changing the hopSize from its default 128 to 441 samples with a default of 2048 samples frame length is not known exactly but for educational purposes, it seems negligible.
  - The pitches are truncated to 2 digits after the decimal to compress the pitchTrack as the current precision is more than needed and silences are notated with an 'S'. This can be the first step towards compression.
  - **The Chunk Size parameter in the PredominantMelodyMakam object and its limitations are not understood.**
  - The Pitch Space is obtained by:
    1. extracting the pitch series,
    2. accessing the tonic in Hz from the Dunya server,
    3. computing the *unfolded pitch distribution* using the PitchDistribution object with its .from_hz_pitch method,
    4. finding the peaks and their locations in the distribution,
    5. Obtaining the pitch space in cents w.r.t *the tonic*.
  - The perde names in a makam and their functions are taken from the *Turkish Music Makam Guide*, Murat Aydemir, 2010, İstanbul and added to a note dictionary.
  - The perdeler in cents are converted to pitches in frequencies using the Converter object.
  - To each perde, a key from the QWERTY English keyboard is assigned starting from Q descending until M.
  - The keyboard mapping is done using the number of perdeler in a makam as the modulus and assuming that the unfolded pitch distribution, no matter how many octaves it spans, is continuous i.e it does not skip any perde.
  - It should be noted that the peak detection algorithm with the default 0.05% threshold, can return up to 24 perdeler. This may require the folding of the lowest and highest octave to their neighboring octaves.
  - **The reference pitch in Hertz is also not understood, is it a global parameter for cents calculation when the tonic information is not available?**

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- If the these are okay, I am starting to play with the Makam Synthesizer, and I am going to run thorough Rafael's html and java codes. However, the pitch track has discontinuities and I could use recommendations on how to smooth it.